# R G U H S

# Compendium of Pharmacy Research Publications

**Published by the Faculty of Pharmacy Colleges affiliated to RGUHS in National & International Journals during 2010**

June 2011 / Vol 2

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# RGUHS

Compendium of Research Articles Published in International and National Journals by the **Faculty of Pharmacy Colleges** affiliated to RGUHS during 2010

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# VICE-Chancellor's Message


The Scientific and Research papers published in reputed National and International Journals by the teachers of Pharmacy Colleges affiliated to this University is being compiled in one bunch. The scientific papers with research interest in the respective fields are useful for teachers and also the students if a compendium of such research publication is one bunch handy for reading is published.

With the intension of boosting inter disciplinary research activities in all the affiliated colleges of this University, RGUHS brought out the compendium of research publications already published in reputed International and National Journals by the faculty of the affiliated colleges during the year 2009.

There was overwhelming response from the faculty and students of the affiliated colleges which encouraged us to publish Volume II of the compendium separately for Medical, Dental and Pharmacy faculties.

I hope that the publication of compendium of scientific publications by the faculty of this University will be well received by all the stake holders. If this publication inculcates in the faculty and students of this University to undertake new research activities and publish the research articles in reputed Journals, the effort of University will be considered as successful.

I welcome the comments and suggestions for improvement.

**Dr. S. Ramananda Shetty**

Vice-Chancellor

# Faculty with Maximum Numbers of Publications of Research Articles in National and International Pharmacy Journals during 2010

Dr. Padmaa M Parakh
The Oxford College of Pharmacy,
Bangalore
(46 Articles)

Dr. Upendra Kulkarni
RMES's College of Pharmacy
Gulbarga
(20 Articles)

Dr. Mohd Gulzar Ahmed
Sri Adichunchanagiri College of Pharmacy
B.G.. Nagara
(19 Articles )

# RGUHS
## Compendium of Dental Research Publications

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# *Compendium of Pharmacy Publications*

RGUHS

# THE OXFORD COLLEGE OF PHARMACY

6/9, I Cross, Begur Road, Hongasandra, Bangalore 560 068

| Sl. No. | Name of Journal, Volume No. Issue and Period | Author/s | Title of the article |
|---|---|---|---|
| 1. | Journal of Pharmacy Research. 4 (2), 401-402,2011. | Silpi Chanda, Deepak M Padmaa M Paarakh, Amit Agarwal. | Phytochemical studies on stem bark of *Crataeva nurvala* Ham. |

**Abstract :**

Fractionation of the butanol partitioned aqueous extract of the stem bark of *Crataeva nurvala* afforded succinic acid, mannitol and lactic acid. The structures of these compounds were elucidated on the basis of spectroscopic methods such as UV, NMR and MS. These compounds were isolated for the first time from the plant and are found to be suitable for use as marker compound for the standardization of the aqueous extract of stem bark of *Crateava nurvala*, commercial extract and phytopreparation containing *Crateava nurvala* by HPLC method.

| | | | |
|---|---|---|---|
| 2. | Journal of Pharmacy and Chemistry. 5(1),22-25,2011. | Sandeep, Saikat Sen, Padmaa M Paarakh, Rajachakraborty, Angad Verma, Ashutosh Mishra Hari Pratap Singh. | Evaluation of peripheral analgesic activity of *Jasminum grandiflorum* Linn. Leaf extracts. |

**Abstract:**

The extracts of leaf of *Jasminum grandiflorum* L. (Family: Oleaceae) were investigated for analgesic activity in formalin test andwrithing test method. The dried power of leaf extracted with different solvents according to their polarity such as petroleum ether, ethanol and water. All the extracts given at a dose of 100 and 200 mg/kg b.w through orally. Extracts shows dose dependent analgesic activity. Aqueous extract of *Jasminum grandiflorum* leaf at a dose of 200 mg/kg produce highest activity is both the models.

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|---|---|---|---|
| 3. | International Journal of Pharmacy and Pharmaceutical Sciences. 3(2), 131- 134,2011. | Ravichandrian VD Padmaa M Paarakh. | Pharmacognostical and phytochemical investigation on leaves of *Ficus hispida*. |

**Abstract:**

*Ficus hispida* (Syn: *Ficus oppositifolia* Roxb; Family: Moraceae) commonly known as devil fig, hairy fig is grows in Tropical and Subtropical regions of India, used for variety of purpose in traditional medicine. The usefulness of this plant is described in many folk books including Ayurveda and is scientifically evidenced, and different biologically active phytoconstituents were isolated from plant. But no reports are available on morph anatomy, and phytochemical studies, hence present attempt was undertaken to investigate the microscopically and preliminary phytochemical and Physico-chemical studies on the leaves of *Ficus hispida*. The study reveals the leaves are simple, opposite, decussate, caducous. The transverse section of the leaves shows presence of epidermis, sponge parenchyma, bicollateral vascular bundles, nonglandular, glandular trichome and spiral vessels. The powder microscopy revealed the presence of anomocytic stomata, glandular trichome, covering trichome and prismatic calcium oxalate crystals. Physicochemical parameters like ash value, extractive value and phytochemical screening with different reagents showed the presence of fluorescence compounds, steroids, triterpenoids, phenols, tannins and flavonoids.

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| 4. | International Research Journal Pharmacy 2(1),111-113,2011. | Nadella Durga Padmaa M Paarakh. | Antibacterial activity of different extracts of stem bark of *Holoptelea integrifolia* (Roxb.) Planch, |

**Abstract :**

The petroleum ether, benzene, chloroform, methanol and aqueous extracts of the stem bark of *Holoptelea integrifolia* were evaluated for the antibacterial activity against various microorganisms viz *Staphylococcus aureus, Bacillus subtilis, Escherichia coli* and *Pseudomonas aeruginosa*. Disc diffusion method was adapted for the assessment of *in vitro* antibacterial activity. The antibacterial activity of different extracts of *Holoptelea integrifolia* at various concentrations were evaluated where zone of inhibition was compared with the standard drug i.e. ampicillin. Chloroform extract was found to be very effective against all the test microorganisms used; petroleum ether extract was only effective against *P. aeruginosa*; benzene extract was effective against *E.coli* and *B.subtilis*; methanol extract was effective against *E.coli* and aqueous extract was effective against *S.aureus* and *E.coli*, respectively when compared to standard drug ampicillin. The minimum inhibitory concentration for chloroform extract was found to be 50,300,25 and 100 $\mu$g/ml against *S.aureus, B. subtilis, E. coli* and *P. aeruginosa* ; for petroleum ether extract was 100 $\mu$g/ml (*P.aeruginosa*); for benzene extract was 100 $\mu$g/ml(*E.coli*) and 25 $\mu$g/ml (*B.subtilis*); for methanol extract was 100 $\mu$g/ml (*E.coli*) and for aqueous extract was 50 $\mu$g/ml (*S.aureus)* and 25 $\mu$g/ml( *E.coli)* respectively suggesting the antibacterial activity of *Holoptelea integrifolia*.

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|---|---|---|---|
| 5. | International Journal of Research in Pharmaceutical Sciences. 2(1), 66- 68,2011. | Sravani T<br>Padmaa M Paarakh. | Evaluation of anthelmintic activity of rhizomes of *Hedychium spicatum Buch*. Ham. |

**Abstract :**

*Hedychium spicatum* Buch. Ham. (Zingiberaceae), commonly known as spiked ginger lily, is found in the entire Himalayan region. Traditionally, the rhizomes are used in the treatment of respiratory disorders, fevers, tranquilizer, hypotensive, antispasmodic, CNS depressant, analgesic, anti-inflammatory, antimicrobial, antioxidant, antifungal, pediculicidal and cytotoxic activities. The present study is an attempt to explore the anthelmintic activity of rhizomes of *Hedychium spicatum* against adult Indian earthworms, *Pheretima posthuma*. The time taken for each worm for paralysis and death was determined. The results were compared with that of standard i.e., piperazine citrate. Methanol extract of *Hedychium spicatum* produced dose dependent anthelmintic activity whereas aqueous extract was not all effective. Methanol extract showed better anthelmintic activity when compared with the standard drug piperazine citrate.

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|---|---|---|---|
| 6. | International Journal of Pharma and Bio Sciences. 2(2), 15-19,2011. | Nagaraja MS<br>Padmaa M Paarakh. | *In vitro* anthelmintic activity of stem bark of *Millingtonia hortensis* Linn. |

**Abstract :**

The present study was undertaken to evaluate anthelmintic activity of crude petroleum ether, benzene, chloroform, methanol and aqueous extracts of *Millingtonia hortensis* stem bark using adult Indian earthworms, *Pheretima posthuma*. which involved determination of time of paralysis (P) and time of death (D) of the worms. Piperazine citrate was included as standard reference and normal saline as control. Where as in control group, worms were observed for 24 hours and no paralysis or death was found during that period. The results of present study indicated that methanolic extract of the stem bark of *Millingtonia hortensis* exhibited better activity than the standard and produced a significant dose dependent anthelmintic activity.

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| 7. | International Journal of Pharmaceutical Sciences and Drug Research, 2(4),269- 271,2010. | Rajesh R, Chitra K<br>Padmaa M Paarakh. | *In vitro* anthelmintic activity of aerial parts of *Aerva lanata* Linn Juss. |

**Abstract :**

Methanol and aqueous extracts of *Aerva lanata* Linn Juss were taken for anthelmintic activity against Indian earthworm *Pheritima postuma*. Various concentrations of both extracts were tested and results were expressed in terms of time for paralysis and time taken for death of worms. Piperazine citrate (10 mg/ml) was used as reference standard and normal saline as a control group. Dose dependent activity was observed in both the extracts and the result shows that the methanol extract possesses more activity than aqueous extract and thus may be useful as an anthelmintic.

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| 12. | Pharmacologyonline Newsletter, 2,706-710,2010. | Padmaa M Paarakh Usha Gavani. | Antioxidant activity of *Nerium odorum Soland* and *Thevetia neriifolia* Juss, |

**Abstract:**

The aqueous extract of *Nerium odorum* Soland and methanol extract of *Thevetia neriifolia* Juss were evaluated for 1, 1-diphenyl-2-picrylhydrazyl (DPPH) radical scavenging activity. Gallic acid and butylated hydroxyanisole (BHA) were used as reference standards. They exhibited strong antioxidant radical scavenging activity with $IC_{50}$ value of 0.4 $\mu$g/ml, 1.15 $\mu$g/ml, 15.45 $\mu$g/ml and 43.79 $\mu$g/ml for Gallic acid, BHA, *Nerium odorum* Soland and *Thevetia neriifolia* Juss respectively. The strongest antioxidant activity of the extracts could be due to the presence of flavonoids.

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|---|---|---|---|
| 13. | Indian Journal of Natural Products and Resources, 1,49-52,2010. | Satish V, Usha Gavani Ravichandrian VD, Padmaa M Paarakh. | Antimicrobial studies on the extract of *Cocculus hirsutus* Linn. and *Hytis suaveolens* Poit, |

**Abstract:**

Extracts of *Cocculus hirsutus* Linn. and *Hyptis suaveolens* Poit. were screened for their*in vitro* antimicrobial activity by agar disc diffusion method. The antimicrobial activity of petroleum ether, chloroform, methanol and aqueous extracts of the leaves of these plants were studied using *Staphylococcus aureus, Listeria monocytogenes, Escherichia coli*, *Serratia marcescens* and *Aspergillus flavus* as test organisms. Petroleum ether extracts of *C. hirsutus* and *H. suaveolens* were found to be more effective against*Escherichia coli* and *Serratia marcescens* and *Aspergillus flavus*, respectively when compared to other extracts of both the plants. Phytochemical screening of the petroleum ether extract of *C. hirsutus* and *H. suaveolens* revealed the presence of alkaloids and steroids, respectively which suggests that these phytoconstituents may be responsible for their antimicrobial activity.

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| 14. | International Journal of Chemical Sciences, 7(4),2377-2383,2009. | Rajesh Gupta, Padmaa M Paarakh. | Antibacterial activity of different extracts of the plant *Bauhinia variegate* |

**Abstract:**

Antibacterial activity of petroleum ether, chloroform, methanol and aqueous extracts of leaves of Bauhinia variegate was determined against gram positive and gram negative bacteria. Penicillin and Gentamycin were used as reference standards for comparison of activity. The activities were found to be Concentration dependent for all different samples tested. It was found that aqueous extract has antibacterial activity against Escherichia coli, Bacillus subtilis, Pseudomonas aeruginosa and Staphylococcus aureus while methanol extract has this activity against Pseudomonas aeruginosa and Staphylococcus aureus with minimum inhibitory concentration as compared with standard(Penicillin 10 $\mu$g/mL and gentamycin 80 $\mu$g/mL).The petroleum ether extract and chloroform extracts were active against Staphylococcus aureus and Escherichia coli. The minimum inhibitory concentration for aqueous extract was 10 $\mu$g/mL, 10 $\mu$g/mL, 50 $\mu$g/mL and 50 $\mu$g/mL,respectively against Staphylococcus aureus, Escherichia coli, Bacillus subtilis, and Pseudomonas aeruginosa), for methanol extract was 500 $\mu$g/mL (Staphylococcus aureus) and 50 g/mL(Pseudomonas aeruginosa),for petroleum ether extract was 100 $\mu$g/mL (Staphylococcus aureus) and 250 $\mu$g/Ml (Escherichia coli), for chloroform extract was 250 $\mu$g/mL (Escherichia coli) and 500 $\mu$g/mL (Staphylococcus aureus).

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| 15. | Pharmacologyonline newsletter, 3,561- 573,2009. | Padmaa M Paarakh. | *Coriandrum sativum* Linn - A Review, |

**Abstract:**

*Coriandrum sativum* Linn (Dhanyaka; Apiaceae) is a widely used medicinal plant throughout India and popular in various Indigenous System of Medicine like Ayurveda, and Siddha. In the Traditional System of Medicine, the fruits are used as astringent, aromatic, anthelmintic, emollient, anti-inflammatory, stomachic, carminative, antibilious, digestive, appetizer, constipating, diuretic, antipyretic, stimulant, aphrodisiac, refrigerant, tonic, expectorant, anodyne, dyspepsia etc. The present review is therefore an effort to give a detailed literature on pharmacognosy, phytochemistry and pharmacological activities of *Coriandrum sativum.*

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| 16. | Pharmacologyonline newsletter, 2,823-827,2009 | Chetana SH, Sangeeta Sajjan, Padmaa M Paarakh Vedamurthy AB. | Antibacterial activity of extract of seeds of *Nigella sativa* Linn, |

**Abstract:**

Extracts of seeds of *Nigella sativa* Linn (Ranunculaceae) were screened for their *in vitro* antibacterial activity by agar diffusion method in comparison with standard antibiotic ampicillin, tetracycline, streptomycin, gentamycin and levofloxacin. The antibacterial activity of hexane, chloroform, methanol and aqueous extract of seeds of the plant were studied using *Staphylococcus aureus, Klebsiella pneumoniae, Escherichia coli* and *Pseudomonas aeruginosa* (Clinical isolate, Bacteria) as test organism. All the extracts were effective against all the four microorganisms. Only levofloxacin showed a higher zone of inhibition while all other standard antibiotics had a zone of inhibition less than the extracts of *Nigella sativa* indicating that the plant can fight these organisms effectively and it could be better alternative to the modern medicine.

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|---|---|---|---|
| 17. | Pharmacologyonline newsletter,2,601-604,2009 | Paras Malik, Usha Gavani Padmaa M Paarakh. | Anthelimintic activity of *Annona squamosa* Linn leaves, |

**Abstract:**

Present study reports anthelimintic activity of various extracts obtained from the leaves of *Annona squamosa* Linn against earth worms *Phertima posthuma*. Among all the extracts tested at 20mg/ml concentration, methanolic extract showed potent anthelmintic activity when compared with the standard drug albendazole.

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| 18. | Pharmacologyonline newsletter,2,477-481,2009 | Paras Malik, Usha Gavani Padmaa M Paarakh. | Antioxidant activity of *Annona squamosa* Linn leaves, |

**Abstract:**

The different extracts of leaves of *Annona squamosa* Linn (Annonaceae) were evaluated for, 1, 1-diphenyl-2-picrylhydrazyl (DPPH) radical scavenging activity using ascorbic acid as reference standard. The extracts exhibited strong antioxidant activity with $IC_{50}$ values of 4.51$\mu$g/ml, 4.1$\mu$g/ml, 4.65$\mu$g/ml and 2.69$\mu$g/ml for acetone, methanol, aqueous extract and ascorbic acid respectively. The flavonoids and tannins present in the extracts may be responsible for the antioxidant activity.

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| 19. | Pharmacologyonline newsletter, 2,586-595,2009 | Sandeep Padmaa M Paarakh. | Jasminum grandiflorum Linn (Chameli): Ethnobotany, Phytochemistry and Pharmacology- A review, |

**Abstract:**

*Jasminum grandiflorum* Linn (Chameli / Yasmin; Oleaceae) is native to Tropical and warm Temperate regions and cultivated in France, Italy, China, Japan, India, Morocco and Egypt. The plant is documented to possess beneficial effects as odontalgic, thermogenic, aphrodisiac, antiseptic, emollient, anthelmintic, deobstruant, suppurative, tonic, in fixing loose teeth, ulcerative stomatitis, leprosy, skin diseases, ottorrhoea, otalgia, wounds, corns and aromatherapy. Pharmacological activities of the plant reported so far are spasmolytic, anti-inflammatory, antimicrobial, antioxidant, antiulcer, cytoprotective, chemoprotective, wound healing and antiacne activity. The present review is an attempt to highlight the various ethnobotanical and traditional uses as well as phytochemical and pharmacological activities reported so far from *J. grandiflorum*.

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|---|---|---|---|
| 20. | Pharmacologyonline Newsletter,2,10-122,2009 | Salim KP<br>Padmaa M Paarakh | A Phytopharmacological review of *Syzygium cumini* (L.) Skeels, |

**Abstract:**

*Syzygium cumini* (L.) Skeels (Jaman, Indian Blackberry; Myrtaceae) is a widely used medicinal plant throughout India and popular in various Indigenous System of Medicine like Ayurveda and Siddha. In the Traditional System of Medicine, the various plant parts such as bark, fruit, seed and leaf are used as astringent, sweet, sour, acrid, refrigerant, carminative, diuretic, digestive, in diabetes, leucorrhoea, gastric disorder, fever, skin diseases and wounds. The present review is therefore an effort to give a detailed survey of the literature on pharmacognosy, phytochemistry and pharmacological activities of *Syzygium cumini*.

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|---|---|---|---|
| 21. | Journal of Pharmacy Research,2(8),<br>1317-1318,2009. | Padmaa M Paarakh,<br>Khosa R L, Sahai M. | Constituents of Polyalthia cerasoides –<br>their detailed spectral details. |

**Abstract:**

The details of isolation and spectral analysis of an oxo-aporphine alkaloid, Liriodenine, (+) – quercitol and sucrose, reported for the first time to occur in the stem bark of *Polyalthia cerasoides*, by the authors, are described.

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| 22. | Journal of Pharmacy Research,2(8),1315-316 | Rajesh Gupta<br>Padmaa M Paarakh<br>Usha Gavani. | Isolation of phytoconstituents from the leaves of *Bauhinia variegate* Linn leaves. |

**Abstract:**

Fractionation of crude petroleum ether extract of the leaves of *Bauhinia variegata* Linn (Leguminosae) led to the isolation of dotetracont-8, 16,21-triene-13-ol (1), 12,17,18,23,24-pentamethyl dotetracont-13, 17,23-triene-12-ol (2), hexacos-11-en-15, 20-diol (3) and lupeol (4). Their structures were elucidated by spectroscopic methods such as UV, IR, NMR and LCMS. All the compounds were isolated for the first time from this plant.

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| 23. | Journal of Pharmacy Research,<br>2(8),1313-1314,2009 | Sumit Gupta,<br>Padmaa M Paarakh<br>Usha Gavani. | Isolation of phytoconstituents from the leaves of *Murraya koenigii* Linn leaves, |

**Abstract:**

Fractionation of petroleum ether partitioned ethanol extract and crude petroleum ether extract of the leaves of *Murraya koenigii* Linn (Rutaceae) led to the isolation of 5,8-dimethyl furanocoumarin (1) and 1-al, 3[6', 6' dimethyl 5-hexene] carbazole (2) and b-sitosterol (3). Their structures were elucidated by spectroscopic methods such as UV, IR, NMR and LCMS. All the compounds were isolated for the first time from this plant.

| | | | |
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| 24. | Pharmakine,1(4),22-25,2009 | Pavithra N<br>Padmaa M Paarakh | Phytoconstituents from stem bark of *Thevetia neriifolia* Juss, |

**Abstract:**

Fractionation of chloroform extract of the stem bark of *Thevetia neriifolia* Juss.(Apocynaceae) led to the isolation of ursolic acid, acetyl ursolic acid, 6-keto acyclic geranialne type monoterpene, oleanolic acid and ellagic acid. Their structure were elucidated on the basis of spectroscopic methods such as IR, NMR and LCMS.

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|---|---|---|---|
| 25. | Biomed,4(1),76-78,2009. | Pavithra N<br>Padmaa M Paarakh. | Oleanolic acid from *Nerium odorum* Soland, |

**Abstract:**

Oleanolic acid, a triperpene was isolated from chloroform extract of the dried leaves of *Nerium odorum* Soland. for the first time. Its structure was elucidated on the basis of spectroscopic methods such as IR, NMR and MS.

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| 26. | Journal of Pharmacy Research 2(7),1206-1207,2009. | Sandeep, Usha Gavani<br>Padmaa M Paarakh | Antibacterial activity of *Jasminum grandiflorum* Linn leaves. |

**Abstract:**

Extracts of *Jasminum grandiflorum* Linn (Oleaceae) were screened for their in vitro antibacterial activity by agar diffusion method in comparison with standard antibiotic penicillin. The antibacterial activity of petroleum ether, chloroform, acetone, methanol and aqueous extract of leaves of the plant were studied using *Staphylococcus aureus, Bacillus subtilis, Escherichia coli* and *Pseudomonas aeruginosa* as test organism. Out of all extracts tested, petroleum ether, methanol and aqueous extracts were effective against all the four microorganisms. Chloroform extract was only effective against *Bacillus subtilis* and *Pseudomonas aeruginosa*. Acetone extract was most effective against *Pseudomonas aeruginosa* and *Escherichia coli*.

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|---|---|---|---|
| 27. | Journal of Pharmacy Research 2(7),1196-1198,2009. | Rajesh Gupta,<br>Padmaa M Paarakh<br>Usha Gavani. | Pharmacognostical and phytochemical screening of *Bauhinia variegate* Linn leaves. |

**Abstract:**

Pharmacognostical characters of the leaves of *Bauhinia variegata* Linn was studied which showed the presence of thin walled epidermis, parenchymatous cells, abundant solitary calcium oxalate crystals, vascular bundles and multicellular covering trichomes. Leaf constant viz.,stomatal index -5.27, vein islet number - 8.3, vein termination - 6.6, palisade ratio -7.6 were also studied. Physiochemical parameter such as total ash - 8 % w/w, water soluble ash value-2 % w/w, acid insoluble ash value - 6 % w/w, alcohol extractive value- 8 % w/w, water soluble extractive value -18.4 % w/w and loss on drying - 7 % w/w were also determined. Phytochemical screening showed the presence of steroids, saponins, flavonoids, alkaloids and tannins.

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| 28. | Journal of Pharmacy Research 2(7),1192-1193,2009. | Deenanath Jhade,<br>Padmaa M Paarakh<br>Usha Gavani. | Isolation of phytoconstituents from the leaves of *Chenopodium album* Linn. |

**Abstract:**

Fractionation of crude petroleum ether extract of the leaves of *Chenopodium album* Linn lead to the isolation of b-sitosterol (1), lupeol (2) and 3 hydroxy nonadecyl henicosanoate (3). Their structures were elucidated by spectroscopic methods such as UV, IR, NMR and LCMS.Compound 2 and 3 were isolated for the first time from this plant.

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| 29. | Herbal Heritage,1(2),90-93,2009. | Ravichandrian VD,<br>Padmaa M Paarakh<br>Usha Gavani | Pharmacognostical and studies on the leaves of *Hyptis suaveolens* Poit. |

**Abstract:**

The pharmacognostical study was carried on the leaves of *Hpytis suaveolens*, which showed glandular and covering trichomes, abundant oil globules, epidermal cells with stomata and calcium oxalate crystals. Physicochemical parameters like extractive values, ash values and loss on drying and leaf constants viz., stomatal index, palisade ratio, vein-islet and vein termination number were also determined.

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|---|---|---|---|
| 30. | Nigerian Journal of Natural Products and Medicine 12,1-3,2008. | Satish V, Usha Gavani Padmaa M Paarakh. | Pharmacognostical studies on the leaves and stem of *Cocculus hirsutus* Linn. |

**Abstract:**

Pharmacognostical studies were carried out on the leaves and stem of *Cocculus hirsutus* Linn, which showed covering trichomes, epidermal cells in leaf and fragments of fibres, sclerenchymatous tissues with xylem vessels in stem. Physicochemical parameters such as water, alcohol soluble extractive values were found to be 6.30 %, 13.10 % and 19 %, 8.60 % w/w for leaves and stem respectively. The total ash values, acid insoluble ash and water soluble ash were found to be 2.20 %, 0.40 %, 0.60 % and 5.2 %,0.60 %, 1.50 % w/w for leaves and stem respectively. The loss on drying was found to be 1.21 % and 1.30 % w/w for the leaves and stem respectively. The leaf constants such as stomatal index (6.50), vein islet number (3), vein termination number (5) and palisade ratio (4.9) were also determined.

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|---|---|---|---|
| 31. | Nigerian Journal of Natural Products and Medicine 12,28-30,2008. | Pavithra N, Padmaa M Paarakh Usha Gavani. | Pharmacognostical studies on stem bark of *Thevetia neriifolia* Juss. |

**Abstract:**

Pharmacognostical studies were carried out on the stem bark of *Thevetia neriifolia* Juss. which showed rhytidoma with suberized cork, cortex, starch grains, prism of calcium oxalate crystals, lignified stone cells, secondary phloem with medullary rays. Physicochemical parameters such as water and alcohol soluble extractive values were found to be 20 % and 21.6 % w/w for the stem bark. The total ash value, acid insoluble ash and water soluble ash were found to be 7 %, 1.6 % and 2.5 % w/w respectively. The loss on drying (12 % w/w) was also determined.

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|---|---|---|---|
| 32. | Herbal Heritage,1(2),81-83,2009. | Sandeep Padmaa M Paarakh. | Isolation of Phytoconstituents from the leaves of *Jasminum grandiflorum* Linn. |

**Abstract:**

Fractionation of chloroform partitioned ethanol extract of the leaves of *Jasminum grandiflorum* Linn lead to the isolation of Catechin, β-sitosterol, gallic acid and oleanolic acid. Their structures were elucidated by spectroscopic methods such as UV, IR, NMR and LCMS. All the compounds were isolated for the first time from this plant.

| | | | |
|---|---|---|---|
| 33. | Herbal Heritage,1(2),75-80,2009. | Deenanath Jhade, Padmaa M Paarakh Usha Gavani | Pharmacognostical and phytochemical screening of leaves of *Chenopodium album* Linn. |

**Abstract:**

The pharmacognostical study was carried on the leaves of *Chenopodium album*, which showed thin walled polyhedral epidermal cells with stomata and vascular tissue. Physicochemical parameters like extractive values, ash values and loss on drying and leaf constants viz., stomatal index, palisade ratio, vein-islet and vein termination number were also determined.phytochemical screening of the extracts was done to determine the different phytoconstituents present in the extract.

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| 34. | Herbal Heritage, 1(1),8-17,2009. | Padmaa M Paarakh. | A phyto-pharmacological review of *Gmelina arborea* Roxb. |

**Abstract:**

*Gmelina arborea* Roxb (Gambhari/ Coomb teak; verbenaceae) is a widely used medicinal plant throughout India and popular in various Indigenous System of Medicine like Ayurveda and Siddha. In the traditional system of medicine, the various plant parts such as bark, root, leaves, fruits and flower are used as tonic, laxative, growth of hair, ulcers, constipation, anthelmintic, hallucination, fever, bilious affections, stomachic, refrigerant, haemorrhage, gonorrhea, aphrodisiac, diuretic, in leprosy and skin diseases. The present review is therefore an effort to give a detailed survey of the literature on pharmacognosy, phytochemistry and pharmacological activities of *Gmelina arborea*.

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| 35. | Pharmacologyonline Newsletter,1,195- 208,2009. | Padmaa M Paarakh | Phytoconstituents from the *genus Petunia* - A review, |

**Abstract:**

A review of the phytoconstituents of the genus *Petunia* (Solanaceae) so far reported, has been presented considering that the genus comprises of a number of varieties of ornamental garden plants with wide distribution, the flowers of which possess variously stripped and colored corollas. Keeping in view of the potential of the genus, an attempt is made to present a review of phytoconstituents of the geuns *Petunia* which still remains as a source of lead molecules.

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| 36. | Pharmacologyonline Newsletter,1,474- 478,2009 | Sumit Gupta,<br>Padmaa M Paarakh<br>Usha Gavani | Antioxidant activity of *Murraya koenigii* Linn leaves, |

**Abstract:**

The different extracts of *Murraya koenigii* Linn (Rutaceae) were evaluated for 1, 1-diphenyl-2-picrylhydrazyl (DPPH) radical scavenging activity. Ascorbic acid was used as reference standard. The extracts exhibited strong antioxidant radical scavenging activity with $IC_{50}$ value of 4.72 $\mu$g/ml, 4.10 $\mu$g/ml, 4.46 $\mu$g/ml and 2.69 $\mu$g/ml for acetone, alcohol, aqueous extract and ascorbic acid respectively. The phytochemical screening suggests that phenolic and flavonoids present in these extracts of the leaves might provide considerable antioxidant activity.

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| 37. | Pharmacologyonline Newsletter,1,270-275,2009 | Sumit Gupta,<br>Padmaa M Paarakh<br>Usha Gavani. | Antibacterial activity of *Murraya koenigii* Linn leaves |

**Abstract:**

Extracts of *Murraya koenigii* Linn (Rutaceae) were screened for their in vitro antibacterial activity by agar diffusion method in comparison with standard antibiotic penicillin. The antibacterial activity of petroleum ether, chloroform, acetone, methanol and aqueous extract of leaves of the plant were studied using *Staphylococcus aureus, Bacillus subtilis, Escherichia coli* and *Pseudomonas aeruginosa* as test organism. Out of all extracts tested, chloroform, acetone and methanol extracts were effective against all the four microorganisms. Aqueous extract was more effective against *Bacillus subtilis* and *Staphylococcus aureus*. Petroleum ether extract was more effective against *Pseudomonas aeruginosa, Bacillus subtilis* and *Escherichia coli*.

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| 38. | Pharmacologyonline Newsletter,1,153- 156,2009 | Sandeep,<br>Padmaa M Paarakh<br>Usha Gavani. | Anthelimintic activity of *Jasminum grandiflorum* Linn leaves, |

**Abstract:**

The present study reports anthelmintic activity of various extracts obtained from the leaves of *Jasminum grandiflorum* Linn (Oleaceae) against adult earth worms *Pheretima posthuma*. Among all the extracts tested at 20 and 40 mg/ml concentration, methanol, chloroform and aqueous extracts showed better anthelmintic activity when compared with the standard drug albendazole.

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| 39. | Journal of Pharmacy Research, 2(4),594-605,2009. | Padmaa M Paarakh<br>Khosa R L. | Phytoconstituents from the genus *Polyalthia*- review, |

**Abstract:**

A review of the phytoconstituents of the genus *Polyalthia* (Annonaceae) so far reported, has been presented considering that the genus comprises of 70 species and distributed all around the world. Keeping in view of the potential of the genus, an attempt is made to present a review of phytoconstituents of the genus *Polyalthia* which still remains as a source of lead molecules.

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| 40. | Natural Product Radiance,8(1),84-90,200 | Padmaa M Paarakh. | *Ficus racemosa* Linn. – A overview, |

**Abstract:**

**:** *Ficus racemosa* Linn. is a moderate-sized avenue tree found throughout India either wild or cultivated for its fruits eaten by villagers. It is popular in Indigenous System of Medicine like Ayurveda, Siddha, Unani and Homoeopathy. In the Traditional System of Medicine, various plant parts such as bark, root, leaves, fruits and latex are used in dysentery, diarrhoea, diabetes, bilious affections, stomachache, menorrhage, haemoptysis, piles and as carminative and astringent. The present review is therefore, an effort to give a detailed survey of the literature on its pharmacognosy, phytochemistry, traditional and pharmacological uses.

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| 41. | Journal of Pharmacy Research 2(3),404- 406,2009 | Padmaa M Paarakh<br>Chansouria J P N<br>Khosa R L. | Wound healing activity of *Annona muricata* extract, |

**Abstract:**

The wound healing activity of alcoholic extract of stem bark of *Annona muricata* was evaluated in albino rats by open wound method for a period of 12 days. Extract showed marked reduction in area of the wound in comparison with that of the control group from 4th days onwards suggesting its possible use in healing the wound.

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| 42. | Biomed , 3(3 &4),274-278,2008. | Padmaa M Paarakh. | Nitric oxide radical scavenging activity of *Hyptis suaveolens* Poit, |

**Abstract:**

The methanol extract of *Hyptis suaveolens* Poit. was evaluated for nitric oxide radical scavenging activity in in vitro method using a sodium nitroprusside generating nitric oxide system. Curcumin was used as reference standard. It exhibited strong nitric oxide radical scavenging activity with $IC_{50}$ values of 240.19 $\mu$g/ml and 40$\mu$g/ml for *Hyptis suaveolens* and Curcumin respectively.

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| 43. | Pharmakine, I(1),25-30,2008. | Vijay Nigam,<br>Padmaa M Paarakh<br>Murali B<br>Amit Agarwal. | A HPLC method for the quantitative estimation of Guggulsterone – E and Guggulsterone –Z in *Commiphora mukul* (Hook. Et. Stocks) Engl. gum resin |

**Abstract:**

A simple, rapid and convenient high performance liquid chromatography method has been developed to quantify guggulsterone E and Z, the marker compound in *Commiphora mukul* (Hook. Et. Stocks) Engl. (Burseraceae) gum resin. The quantification was carried out using a C18 (4.6 x 250 mm; 51/4) column and mobile phase comprising of acetonitrile and water in the ratio of 45 : 55 (v/v). the flow rate was 2 ml/min and the elutant eas monitoried at a wavelength of 242 nm, the retention time being 18.33 and 26.517 for guggulsterone E and Z respectively. The calibration curve for guggulsterone E and Z were found to be linear over the range of 12.64 to 809.12 $\mu$g/mland 16.88 to 1080.55 $\mu$g/ml and the correlation coefficient being 0.9991 and 0.9998 respectively. The method was validated as per I.P and ICH guidelines such as accuracy, specificity, precision, linearity, range and ruggedness. The method described herein is simple, accurate and precise and can be used in the routine analysis of *C.mukul* gum resin.

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| 44. | Journal of Natu ral Remedies, 8/2,116-131,2008 | Padmaa M Paarakh<br>Leena JP<br>Angelin ST. | Genus *Salacia*: A comprehensive review |

**Abstract:**

*Salacia* sps (Family: Celastraceae/Hippocrateaceae) is an important source of chemicals of immense medicinal and pharmaceutical importance such as salacinol, mangiferin and kotanalol which are effective as antidiabetic, antiobese, hepatoprotective, hypolipidemic and antioxidant agent. Hence, this review consider the importance of the genus *Salacia* and n attempt is made to present macroscopical, phytochemical and pharmacological activities of the genus *Salacia*.

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| 45. | International Journal of Pharmacology, 4(3),227-229,2008. | Usha G<br>Padmaa M Paarakh | Antioxidant activity of *Hyptis suaveolens* Poit, |

**Abstract:**

The antioxidant activity fo methanol extract of leaves of *Hyptis suaveolens* Poit was evaluated in vitro by 1, 1-diphenyl-2-picrylhydrazyl (DPPH) radical scavenging activity using gallic acid and butylated hydroxyanisole (BHA) as reference standards. They exhibited strong antioxidant radical scavenging activity with $IC_{50}$ values of 0.4 $\mu$g/ml, 1.15 $\mu$g/ml and 14.04 $\mu$g/ml for gallic acid, BHA and *Hyptis suaveolens*, respectively. The antioxidant activity of methanol extract could be due to the presence of flavonoids.

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| 46. | Biomed ,2(4),404-407,2008. | Pavithra N<br>Padmaa M Paarakh. | Screening of antibacterial activity of *Thevetia neriifolia* Juss. and *Nerium odorum* Soland, |

**Abstract:**

Extracts of *Thevetia neriifolia* Juss. and *Nerium odorum* Soland. were screened for their antibacterial activity in comparison with standard antibiotic Penicillin. The in vitro antibacterial activity of petroleum ether, benzene, chloroform, methanol and aqueous extracts of the plants were studied by disc diffusion method using *Staphylococcus aureus, Listeria monocytogenes, Escherichia coli* and *Serratia marcescens* as test organisms. Zone of inhibition ranged from 12 mm to 16 mm against standard zone of inhibition 24 mm. petroleum ether extract of *Nerium odorum* was found to be more effective against *S.aureus* when compared to petroleum ether, benzene and chloroform extracts of the both plants. None of the extract was effective against *E.coli*. Only methanol and water extract of *Nerium odorum* were effective against *L.monocytogenes*. Chloroform and methanol extract of *Thevetia neriifolia* were only effective against *S.marcescens*.

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| 47. | Journal of Medicinal Food, Vol. 10(2), , 2007, 361-365 | Sivajothi V,<br>Dey A, Jayakar B,<br>Rajkapoor B | Antihyperglycemic property of Tragia cannabina in streptozotocin-induced diabetic rats. |

**Abstract:**

The present study was performed to investigate the efficacy of an ethanol extract of the roots of Tragia cannabina for antihyperglycemic and antioxidant effects in streptozotocin (STZ)-induced diabetic rats. Male Wistar rats were administered T. cannabina (250 mg/kg) orally for 21 days, and blood glucose level was measured weekly. At the end of 21 days, concentrations of serum lipids such as total cholesterol, triglycerides, and high-density lipoprotein (HDL) and protein markers such as total protein, albumin, globulin, and albumin:globulin ratio (A:G) were estimated. Also, levels of enzymes such as serum glutamate oxaloacetate transaminase (SGOT), serum glutamate pyruvate transaminase (SGPT), and alkaline phosphatase (ALP) were determined. Antioxidant activity of the extract was evaluated by estimating lipid peroxides (LPO), superoxide dismutase (SOD), and catalase in liver of normal control and STZ- and extract-treated rats. Histopathological changes of liver and kidney were also studied in STZ-induced diabetic animals and normal controls. All these effects produced by the extract were compared with glibenclamide, a standard antidiabetic drug. Oral administration of T. cannabina for 21 days resulted in a significant reduction in blood glucose level, lipid concentration, and SGOT, SGPT, ALP, and LPO levels accompanied by an increase in the levels of SOD

and catalase in liver tissues of STZ-induced diabetic rats. Altered levels of protein markers also reverted back to normal. Histopathological changes of liver and kidney were returned to normal. The effects produced by the extract were comparable to that of glibenclamide. In conclusion, the T. cannabina showed significant antihyperglycemic and antioxidant effects in STZ-induced diabetic rats.

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| 48. | Iranian Journal of Pharmaceutical Research Volume 7, Number 1, 53-59 (7), 2008. | Vaiyapuri Sivajothi, Akalanka Dey, Balasubramanian Rajkapoorc | Antihyperglycemic, Antihyperlipidemic and Antioxidant Effect of *Phyllanthus rheedii* on Streptozotocin Induced Diabetic Rats |

**Abstract :**

The aim of this study was to investigate the effects of ethanolic extract of the whole plant of *Phyllanthus rheedii* wight P.rheedii as antihyperglycemic, antihyperlipidemic and antioxidant effect in streptozotocin (STZ) induced diabetic rats. Male Wistar rats were administered *P.rheedii* (250 mg/kg) orally for 21 days and blood glucose level was measured weekly. At the end of 21 days, the serum lipid metabolites such as total cholesterol, triglycerides, high density lipoproteins (HDL) and protein metabolites such as total protein, albumin, globulin and albumin:globulin ratio (A:G) enzyme level viz serum glutamate oxaloacetate transaminase (SGOT), serum glutamate pyruvate transaminase (SGPT) and alkaline phosphatase (ALP) were determined. In order to determine antioxidant activity of extract, liver tissues were homogenized in ice cold saline buffer and the assay of lipid peroxides (LPO), superoxide dismutase (SOD) and catalase (CAT) were performed in control, STZ and extract treated rats. All these effects were compared with glibenclamide as a reference antidiabetic drug. Oral administration of *P.rheedii* for 21 days resulted in a significant reduction in blood glucose level, lipid metabolism and enzymes level and significant improvement in LPO, SOD and catalase in liver tissues of STZ induced diabetic rats when compared with untreated diabetic rats. The protein metabolites were significantly altered near to normal. The effects produced by the extract were comparable to that of glibenclamide.In conclusion The *P.rheedii* showed significant antihyperglycemic, antihyperlipidemic and antioxidants effect in STZ induced diabetic rats.

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| 49. | Research Journal of Chemistry and Environment Vol.14 (3) Sept. (2010 | Sivajothi V. Leelaprakash G. | Cytotoxicity Screening of Alcoholic Extract of the Whole Plant of *Phyllanthus rheedii* |

**Abstract :**

The purpose of this study was to investigate The anticancer of alcohol (95%) extract of the whole plant of Phyllanthus rheedii. The MTT (methylthiazolyldiphenyl-tetrezolinum bromide) method was applied to compare the antitumoral activity of alcohol (95%) extract on lung carcinoma cell lines (A549), colon carcinoma cell lines (HCT-116), liver carcinoma cell lines (HEPG-2) and cervical carcinoma cell lines(HELA).

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| 50. | Journal of Pharmacy Research, Vol 3, No 8 (2010) | V.Sivajothi, N.Aswin, G. Leelaprakash, E. Baskar | Influence of aqueous extract of Ipomoea aquatica on alcohol-induced changes in antioxidant defenses in rats |

**Abstract :**

Alcoholic liver disease is an alcohol induced disease with genetic, psycho-social and environmental factors influencing its development and manifestations. The disease is often progressive and is considered to be a major cause of morbidity and mortality. The present study was conducted to evaluate the antioxidant effect of aqueous extract of *Ipomoea aquatica* (*I. aquatica*) on ethanol treated rats (18% ethanol 5ml/100g body weight for 45 days). *I. aquatica* extract (33.4g/kg body weight/day) was given for 45 days. Silymarin (0.1g/kg body weight/day) was given as a reference drug once daily for 45 days. Levels of serum marker enzymes (AST, ALT and ALP), Superoxide dismutase (SOD) and Catalase (CAT), lipid peroxidase (LPO) and lipid profiles were significantly.

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| 51. | Asian Journal Of Chemistry<br>Vol. 21, Issue. 8, Page : 5973 – 5978 | V. Sivajothi,<br>Akalanka Dey,<br>B. Jaykar | Evaluation of Acute and Subacute Toxicity of Alcoholic Extract of Whole Plant of *Phyllanthus rheed* |

**Abstract**

Present studies reports the acute and subacute toxicity of alcoholic (95 %) extract of whole plant of *Phyllanthus rheedii* in Swiss mice and Wister albino rats. The mice were divided into 5 groups of 10 animals and each group received once 100, 500, 1000, 2000 and 3000 mg/kg dose of extract by intra-gastric gavages for 1 d. For the sub acute toxicity, four groups of 6 rats (3 males and 3 females) were received distilled water (control), 125, 250 or 500 mg/kg of extract every 24 h orally for 28 d. The results indicated that the $LD_{50}$ of the extract was about 2588 mg/kg of body weight. No significant variation ($p < 0.05$) in the body and organ weights between the control and the treated group was observed after 28 days of treatment. Hematological analysis and clinical blood chemistry revealed no toxicity effects of the extract. Pathologically, neither gross abnormalities nor histopathological changes were observed. No mortality was recorded in 28 days. *Phyllanthus rheedii* extract was found to be fairly nontoxic.

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| 52. | Journal of Pharmacy Research,<br>Vol 4, No 3 (2011) | G. Leelaprakash,<br>S. Mohan Dass ,<br>V. Sivajothi | Mitigation of cadmium induced oxidative stress and hepatotoxicity by *Phyllanthus maderaspatensis* extracts in experimental animals. |

**Abstract:**

Cadmium (Cd) is an environmental and industrial pollutant that affects various organs especially liver in humans and animals. In this study, the protective effect the aqueous extract of *Phyllanthus maderaspatensis* (PM) on Cd-induced oxidative stress and hepatotoxicity was evaluated in male Wistar rats. Rats were administration PM extract at 500 mg/kg followed by an acute toxic dose of Cd (200$\mu$g/kg) for 10 days. At the end of the study there was a reduction enzyme marker like ALP, AST, ALT, SOD, CATALASE, GPX, GST and XAO.

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| 53. | Pharmacologyonline 3, 438-445, 2007. | Kalyan S Betanabhatla,<br>Jasmin Sajni R,<br>Raamamurthy J,<br>Christina Ajm,<br>Sasikumar S, Karthik R | Anti-inflammatory and anti-nociceptive activities of *heliotropium indicum* linn. In experimental animal models. |

**Abstract:**

Choloroform extract of Heliotropium indicum was investigated for anti-inflammatory and anti-nociceptive activities in experimental animal models. Anti-inflammatory activity was evaluated with carrageenan induced paw edema model in albino wistar rats of both sexes, and compared to a positive control drug, Diclofenac sodium. The extract was given (ip) in a concentration of 50, 100 & 150 mg/kg b.w. before carrageenan injection. The extract of H. indicum with a concentration of 150 mg/kg b.w. showed maximum (80.0%) inhibition on carrageenan induced rat paw edema. Anti-nociceptive activity was evaluated with hot plate model in male Swiss albino mice, and compared to a control drug, Pentazocine. The extract was given (ip) in a concentration of 50, 100 & 150 mg/kg b.w., 30 minutes before estimating the discomfort reaction (paw licking and jumping) which was recorded as response latency. The extract of H. indicum with a concentration of 150 mg/kg b.w. showed maximum (82.79%) anti-nociception in the hot-plate test.

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| 54. | Pharmacologyonline 2, 176- 191, 2008. | Karthik R,<br>Jasmin Sajni R,<br>Sasikumar S, Kalyan S,<br>Betanabhatla,<br>Christina Ajm,<br>Jagan Athimoolam,<br>K Sundara Saravanan | Evaluation of anti-tubercular activity of some synthesized benz spiro-oxirane Derivatives of indane-1, 3-dione |

**Abstract:**

In the development of organic therapeutic agents, pharmaceutical scientists have explored numerous approaches in finding and developing organic compounds that are now available to us in dosage forms suitable for the treatment of our ills and often for the maintenance of our health. The present work deals with evaluation of anti-tubercular activity of various aldehyde derivatives synthesized by Knoevenagel condensation method and substitution in the second position of indane-1, 3-dione nucleus. The formation of Spiro-oxirane derivatives by reaction with alkaline hydrogen peroxide was also attempted. The synthesized derivatives were screened for anti-tubercular activity and the compounds demonstrated some remarkable features to be actively considered as anti-tubercular drugs.

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| 55. | Journal of Natural remedies, Vol 7(2),2007, 229-233 | R. Rajesh, Sarfar A L.Sathiyanarayana N, S. Arulmozhi, S.Jubie, | Effect of leaf galls of *Piper nigrum* Linn. against carageenan induced inflammation in Albino rats |

**Abstract:**

Objective: To evaluate the anti-inflammatory activity of leaf galls of Piper nigrum Linn. against the carageenan induced paw oedema in albino rats.

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| 56. | Journal of Herbal Medicine and Toxicology, Vol 2(1),2008,51-56 | Ruby K, Rajesh R Sathiyanarayanan L, Arulmozhi S | Diuretic and Bronchodialator activity of *Plectranthus Amboinicus*(Lour.) |

**Abstract:**

The aim of the present study was to investigate the effect of various extracts of Plectranthus amboinicus (Lour.) for diabetic, electrolytic excretion and bronchodilator activity in animal experimental models. All the extracts show potent diuretic activity($p<0.01$) in tested albino rats at a dose of 200 mg/ kg and increase in the excretion of $Na^+$, $K^+$ and $Cl^-$ excretion was observed. The results are comparable with standard fruosemide at a dose of 10 mg/ kg. Fruosemide exhibited significant increase ($p<0.01$) in the Na+ excretion whereas K+ excretion was decreased. The alcoholic extract exhibited significant increase ($p<0.01$) in the excretion of Na+ and K+ and Cl- whereas other extracts showed various results. All the tested extracts showed marked bronchodilation in the tracheal chain of guinea pig among which, the ethanolic extract exhibited more prominent activity (54.16%) comparable with standard bronchodilator Aminophylline (70.83%).

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| 57. | Oriental Pharmacy and Experimental Medicine, Vol 9(2), 2009,142-148 | R. Rajesh, L.Sathiyanarayana N, S. Arulmozhi, Ruby K | Anxiolytic effect of leaf galls extracts of *Piper nigrum* Linn. in Swiss Albino mice |

**Abstract:**

Anxiety disorders are one of the serious problems which need proper therapy devpoid of side effects of presently available medicines. The present study evaluates the anxiolytic and sedative activity of leaf galls of Piper nigrum Linn. in Swiss albino mice. The pet. Ether, chloroform,ethylacetate and ethanol extracts of leaf galls of Piper nigrum were obtained by continuous soxhlet extraction. The prepared extracts were found to be safe upto 2000 mg/ kg body weight of mice in the acute toxicity study. Each extract was assessed for anxiolytic activity in Swiss albino mice by elevated plus maze, open field test, rota rod test and phenobarbitone induced sleeping time test. In the elevated plus maze test, the pet ether extract and chloroform extract at the dose of 50 mg/ kg b.w orally, significantly ($p< 0.01$) increased the number of entries and time spent in open arm comparable with standard diazepam at the dose of 10 mg/ kg b.w.p.o. In the open field test, pet. ether extract (50 mg/ kg b.w.p.o) showed significant increase ($P< 0.01$) in ambulation and center activity. Chloroform extract (50 mg/ kg b.w.p.o) was significant ($P< 0.01$) for both ambulation and center activity. Pet.ether extract(50 mg/ kg b.w.p.o) also showed significant activity ($P< 0.01$) in rota rod test. All the results are comparable with standard diazepam at the dose of 1 mg/ kg b.w.p.o. Moreover all the extracts showed significant ($P<0.01$) increased in the phenobarbitone induced sleeping time among which pet.ether showed more prominent activity (36% ) comparable with control. The results revealed that, the active pet.ether extract and chloroform extract of leaf galls of Piper nigrum Linn is worthwhile to develop the bioactive principle for anxiolytic activity.

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| 58. | Pharmacology online 2,2009, 644-649 | Ruby K, Rajesh R Sathiyanarayanan L, Arulmozhi S, | Hepatoprotective effect of Plectranthus Amboinicus (Lour.) against CCl4 induced Liver damage in Albino rats by its antioxidant property |

**Abstract:**

Plectranthus amboinicus is a medicinally important plant, finds its use in traditional as well as in medicinal system to treat a range of ailments like dyspepsia, indigestion, diarrhoea etc., The aim of the present study was to investigate the effect of ethanolic extract of Plectranthus amboinicus (Lour.) (EEPA) against carbon tetra chloride induced lipid peroxidation in rats. Administration of CCL for 7 days induces lipid peroxidation leading to liver damage. Hence the enzyme levels such AST and ALT which are good markers of liver condition have been elevated and also the serum bilirubin. Simultaneous administration of EEPA at the dose of 200 mg/kg reduced these elevated AST and ALT levels significantly ($p<0.001$) and serum bilirubin level was reduced significantly ($p<0.05$) substantiating that EEPA is inhibiting the $CCl_4$ induced liver damage in rats. This was further supported by the evidence of significantly ($p<0.001$) increased glutathione level indicating increased antioxidant enzyme level and significantly ($p<0.001$) decreased malondialdehyde level indicating the decreased oxidative stress. So, the present study supports the traditional claim of the plectranthus amboinicus for the hepatoprotective potential possibly through its antioxidant property.

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| Sl. No. | Name of Journal, Volume No. Issue and Period | Author/s | Title of the article |
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| 1. | Der Pharma Chemica, 2(5), 2010, 153- 63. | S.Rajasekaran, GopalKrishna Rao Sanjay Pai P N | Synthesis, Antitubercular, Antibacterial and Antioxidant Activity Of Some 2-Phenyl-3-Substituted Quinazolin-4(3H)-Ones. |

**Abstract:**

In recent years there is a tremendous increase of drug resistant pathogens, especially mycobacterium tuberculosis leading to the design and development of newer antimycobacterial compounds. The reaction of 2-phenyl-3-chloroacetamido quinazolin-4(3H)-ones with various aromatic amines and thiols gave N-(4-oxo-2-phenylquinazolin-4(3H)-yl)-2-[substituted heteroaryl] acetamide derivatives. The structure of the compounds has been confirmed by IR, 1HNMR, Mass spectral data and Elemental analysis. Antitubercular and antibacterial activities were performed by microbroth dilution and cup-plate method respectively. The compounds have also been screened for antioxidant activity by DPPH method. All the synthesized compounds have been subjected for physical parameter evaluation. Though the compounds showed moderate antioxidant activity, few compounds have shown good antitubercular activity and better antibacterial activity compared to the standard drug.

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| 2. | Journal of Chemical and Pharmaceutical Research.2(2), 2010, 462-468. | S.Rajasekaran, GopalKrishna Rao, Sanjay Pai P N Gurpreet Kaur Virya. | Synthesis and invitro study of biological activity of 2,3- Substituted Quinazolin-4(3H)-ones |

**Abstract:**

Quinazolinone and their derivatives have been studied extensively for various biological activities such as anti-inflammatory, antimicrobial, antitumor, antioxidant and anti-HIV activity. Imidazoles and triazoles have also been exploited for antimicrobial and antioxidant activities. In the present investigation the quinazolinone moiety has been clubbed with imidazole and triazole heterocyclic moiety to obtain the title compounds. All the synthesized compounds have been screened for their antibacterial activity against *S.aureus* (NCIM 2079), *B.subtilis* (NCIM 2697), *E.coli* (NCIM 2065) *and K.pneumonia* (NCIM 5082) and *invitro* antioxidant activity by 1,1-diphenyl-2,2-picryl hydrazyl free radical (DPPH) method. Interestingly the compounds containing thiol group showed pronounced antioxidant activity than other derivatives of the series.

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| 3. | Indian Journal of Heterocyclic Chemistry, Vol.19, Jan-March, 2010 303-304p. | GopalKrishna Rao, Rajasekaran S, Sanjay Pai P N, Srinivas Murthy M, Joydeep Sengupta Kalpana Devi | Synthesis And Antimicrobial Studies Of Some 2- Phenyl-1-[4-Phenyl-1, 3-Thiazol-2-Yl]-4-(Substituted Benzylidene)-Imidazoline-5-Ones |

**Abstract:**

A series of thiazolyl imidazolinones have been synthesizedand screened for their antimicrobial activity. Few of the compounds have shown promising activity against Gram positive organisms when compared with the standard drug.

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| 4. | Indian J.Pharm. Educ. Res. 44(3), Oct - Dec, 2010 | G.K.Rao, A.R.Ramesha, Amit Kumar Jain B.V.Adavni Rao | Effect of Different Acids on the Formation of E and Z Isomers of Doxepin, |

**Abstract:**

Doxepin is an important antidepressant drug useful in the treatment of mild to moderate endogenous depression. The synthesis of doxepin involves acid catalysis leading to the formation of E- and Z- isomers. So herein, we report the use and effect of various acid catalysts on the formation E- and Z- isomers. Characterization of both the isomers was achieved by using HPLC and NMR. Both NMR and HPLC analysis showed that E-isomer as the major component.

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| 5. | Journal of Chemical and Pharmaceutical Research.2(2), 2010, 101-106 | S.Rajasekaran, Gopal Krishna Rao, Sanjay Pai P N Vedavathy J. | Microwave Assisted Synthesis of Some 5-Pyridyl-2-[(N- SubstitutedPhenyl) thioacetamido]-1,3,4-oxadiazoles as Antibacterial and Antioxidant Agents |

**Abstract:**

A series of some 5-pyridyll-2-[(N-substituted phenyl) thioacetamido]-1,3,4-oxadiazoles were synthesized by both conventional and microwave method and characterized on the basis of IR, NMR Mass Spectral and elemental analysis. The title compounds were subjected for antibacterial activity against both gram positive and gram negative organisms and *invitro* antioxidant activity by 1,1-diphenyl-2,2-picryl hydrazyl free radical (DPPH) method.

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| 6. | Journal of Chemical and Pharmaceutical Research, 2(1), 2010, 482-488. | S.Rajasekaran, GopalKrishna Rao, Sanjay Pai P N Gurpreet Singh | Sodhi Synthesis, Antibacterial and *invitro* Antioxidant Activity of 2,3-disubstituted Quinazolin-4(3H)-ones |

**Abstract:**

Quinazolinone and their derivatives have been studied extensively for various biological activities such as anti-inflammatory, antimicrobial, antitumor, antioxidant and anti-HIV activity. Schiff bases have also been exploited extensively for antimicrobial and antioxidant activities. In the present investigation various quinazolinone amines have been clubbed with five membered heterocyclic aldehydes to obtain the title compounds. All the synthesized compounds have been screened for their antibacterial activity against *S.aureus, B.subtilis, E.coli and K.pneumonia* and *invitro* antioxidant activity by 1,1-diphenyl-2,2-picryl hydrazyl free radical (DPPH) method

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| 7. | E-Journal of Chemistry, 2010, 7(4), 1435-1439 | Gopal Krishna Rao<br>Ramaling B. Kotnal<br>PN Sanjay Pai | Synthesis and Biological Evaluation of 2-(3-Methyl-2- oxoquinoxalin-1(2H)-yl)-N'-(substituted phenylmethyledene / ethylidene) acetohydrazides, |

**Abstract:**

A series of quinoxaline derivatives was prepared and evaluated for antitubercular, antibacterial and antifungal activities. The title compounds were prepared by condensation of substituted aromatic aldehydes and substituted acetophenones with 2-(3-methyl-2-oxoquinoxalin-1(2*H*)-yl) acetohydrazide. Structures of all these compounds were confirmed by their spectral studies. Among synthesized compounds (**4r, 4t, 4u, 4w** and **4x**) have shown good anti tubercular activity (25 $\mu$g mL-1) when compared to reference drugs pyrazinamide (10 $\mu$g mL-1) and streptomycin (7.5 $\mu$g mL-1). In this study, few derivatives showed broad spectrum of antimicrobial activity at low concentration. The MICs (Minimum inhibitory concentration) of some compounds are 2-4 $\mu$g mL-1.

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| 8. | J. Chem. Pharm. Res., 2010, 2(3):368-373 | Gopal Krishna Rao,<br>Ramaling B. Kotnal<br>PN Sanjay Pai | *In-vitro* screening of quinoxaline-2-one derivatives for antitubercular activity, |

**Abstract:**

A series of ethyl 2-[(3-methyl-2-oxoquinoxalin-1(2*H*)-yl)acetyl]-3-oxo-2,3-dihydro-1*H*pyrazole- 4-carboxylate derivatives were prepared and evaluated for their antitubercular activities. All compounds were screened for *in vitro* antitubercular activity against *Mycobacterium tuberculosis* H37Rv (MTB). Minimum inhibitory concentrations were determined and interpreted for *Mycobacterium tuberculosis* H37Rv according to the procedure of the approved macro dilution reference method of antimicrobial susceptibility testing. Among all the compounds synthesized, (GKR 4b, 4c, and 4f) were found to be the most active compounds against MTB with MIC (25 $\mu$g/mL).

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| 9. | Indian Journal of Heterocyclic Chemistry, Vol.19, Jan-March, 2010, 293-294p. | GopalKrishna Rao<br>S.Rajasekaran,<br>Sanjay Pai | Microwave Assisted Synthesis of Some N-(4-oxo-2- sustitutedphenylquinazolin-3(4H)-yl)-2-[(5-aryl-1,3,4- oxadiazol-2-yl) sulfanyl] acetamides as Antitubercular Agents |

**Abstract:**

A series of some N-(4-oxo-2-substituted phenylquinazolin-3-(4*H*)-yl)-2-[(5-aryl-1,3,4-oxadiazole)sulfanyl] acetamides were synthesized and characterized on the basis of IR, NMR and Mass Spectral (MS) data. The title compounds were subjected to *in-vitro* antitubercular activity. Out the compounds tested few of them have shown significant antitubercular activity when compared to standard Streptomycin and Pyrazinamide.

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| 10. | Tetrahedron Letters 2010, 51, 5690-5693. | Gowda N.B.,<br>Rao, G.K.,<br>Ramakrishna, R.A., | A chemoselective deoxygenation of Noxides by sodium borohydride Raney nickel in water |

**Abstract:**

A simple and convenient protocol for deoxygenation of aliphatic and aromatic N-oxides to the corresponding amines in good to excellent yield using sodium borohydride–Raney nickel in water is reported. Other functional moieties such as alkenes, halides, ethers, and amides are unaffected under the present reaction condition.

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| 11. | Indian Drugs 47(7)2010,63-66 | Hussain A.K.,<br>Pai P.N.S<br>Rao G.K., | Simultaneous spectropotometric estimation of Metronidazole and Amoxycillin trihydrate in marketed formulation |

**Abstract:**

A series of ethyl-5-(substituted phenyl)-7-methyl-3-oxo-3, 5-dihydro-2H-thiazolo[3,2-A] pyrimidine-6-carboxylates (2a-i) were synthesized by cyclocondensation of ethyl-6-methyl-4-(substitutedphenyl)-2-thioxo-1,2,3,4-tetrahydropyrimidine-5carboxylate chloroacetic acid, acetic anhydride and acetic acid. The characterization of the compounds has been done by IR, 1HNMR and MS spectral data. The synthesized titled compounds were evaluated for their qualitative *in vitro* antibacterial and antioxidant activity by two fold serial dilution and DPPH method, respectively. All the title compounds have shown mild to moderate activity.

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| 12. | Indian Drugs 47(6)2010,45-48. | Nagarjuna C.H.,<br>Pai P.N.S.<br>Rao G.K. | Spectrophotometric Method for simultaneous estimation of Pyridoxine Hydrochloride and doxylamine succinate in tablets |

**Abstract:**

A UV Spectrophotometric method has been developed and validated for simultaneous estimation of pyridoxine hydrochloride and doxylamine succinate in tablet formulations using UV (Shinadzu) 1700 spectrophotometer with 0.1 N HCl as solvent. The λ max of pyridoxine hydrochloride and doxylamine succinate was found to be 290 and 262 nm respectively in 0.1 N HCl. Absorptivity of pyridoxine hydrochloride and doxylamine succinate was found to be 290 and 262 nm was 460.64, 97.72 and 73.31, 249.82 respectively. The linearity for both pyridoxine hydrochloride and doxylamine succinate was in the range of 5-50mcg/mL. The mean recoveries obtained for pyridoxine hydrochloride and doxylamine succinate were 95.7 -98.5% and 95.2-98.7% respectively. The developed method was found to be accurate, precise and rapid for the simultaneous estimation of pyridoxine hydrochloride and doxylamine succinate in tablets.

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| 13. | Indian J Heterocyclic Chemistry,<br>Jan-Mar.(19)2010,261-4. | Ranjit Kaur,<br>Gopal Krishna Rao,<br>P.N.Sanjay Pai | Synthesis of 5H-Dibenzo (b,f)azepine-5-{4-substituted benzylidene-2-methyl imidazole-5-one}carboxamides and their antioxidant activity, |

**Abstract:**

A series of some 5H-dibenzo (b,f) azepine-5-{4substituted-benzylidene-2-methylimidazole-5-one}-carboxamides were synthesized and characterized on the basis of IR, $^{1}$HNMR, and mass spectral (MS) data. The title compounds were subjected to *in-vitro* anti-oxidant activity using DPPH* method. Out of the compounds tested some of the molecules showed significant antioxidant activity when compared to standard Ascorbic acid.

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| 14. | Indian J Heterocyclic Chemistry,<br>Jan-Mar.(19)2010,273- 6. | Arun Pathak,<br>Venugopala KN,<br>Akaanksha Joshi,<br>GopalKrishnaRao,<br>Kalpana Devi, | Synthesis of ethyl -5-(substituted phenyl)-7-methyl-3-oxo-3,5- dihydro-2H-thiazolo(3,2-a)-pyrimidine-6-carboxylates, |

**Abstract:**

A series of ethyl-5-(substituted phenyl)-7-methyl-3-oxo-3, 5-dihydro-2H-thiazolo[3,2-A] pyrimidine-6-carboxylates (2a-i) were synthesized by cyclocondensation of ethyl-6-methyl-4-(substituted phenyl)-2-thioxo-1,2,3,4-tetrahydropyrimidine-5-carboxylates, chloroacetic acid, acetic anhydride and acetic acid. The characterization of the compounds has been done by IR, 1HNMR and MS spectral data. The synthesized titled compounds were evaluated for their qualitative *in vitro* antibacterial and antioxidant activity by two fold serial dilution and DPPH* method, respectively. All the title compounds have shown mild to moderate activity.

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| 15. | Int. J.Biolog. Chem.,3(2)1-7,2010. | K.Ranjit, GK Rao<br>PN Sanjay Pai, | Synthesis andbiological evaluation of N 1 - [((3z) -5-substituted- 2-oxo1,2-dihydro-3H-indol-3-ylidene]-5H-dibenzo[b,f] azepine- 5-carbohydrazides, |

**Abstract:**

A novel synthetic methodology of Schiff bases incorporating dibenzazepine carbohydrazide with isatin is described. The title compounds were prepared by condensation of carbohydrazide and substituted isatins. Structures of all these compounds were confirmed by their spectral studies. These compounds were screened for their *in vitro* antioxidant activity. From the biological studies, it was possible to observe that some of the compounds have shown good antioxidant activity when compared to the standard, ascorbic acid. Compounds with electron withdrawing substitutents (3f) and (3k) have shown better activity at lowest concentration than electron donating substitutents. The ambient conditions, good product yields and easy work up procedures make this methodology a better protocol for the synthesis of newer derivatives which can be explored further for biological activities.

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| 16. | J.Chem.Pharm.Chem Res.,2010,2(1):489-496 | Gopal Krishna Rao,<br>Ranjit Kaur<br>PN Sanjay Pai | Synthesis and biological evaluation of some dibenzazepine analogs |

**Abstract:**

Dibenzazepines and analogs exhibit a wide variety of biological activities like antidepressant, anticonvulsant, antipsychotic, antioxidant, antimicrobial etc.In the present study we have synthesized new analogs of dibenzazepines. The structures of these synthesized compounds were confirmed by IR, NMR, Mass and CHN analysis. All the values and results of this spectral and elemental analysis were found to be in the normal range. These compounds were evaluated for antimicrobial activity.

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| 17. | The Internet Journal of Pharmacology.<br>2010 Volume 8 Number 1. | V. Prakya, K. Vemula,<br>K. Devi S. Sonti<br>ex vivo and in vivo evaluation | Site-specific oral controlled release metformin tablets - development, in vitro, |

**Abstract:**

Oral absorption of metformin is confined to the upper part of intestine posing problems in the f3ormulation of extended release tablets. Therefore, the objective of the present study was to develop controlled-release mucoadhesive core tablets and confine the tablets to the specific site in the gastrointestinal tract. A projective coat protects the core tablets from mucoadhesion till the targeted site is reached. Once the tablet reaches the specific site, the coat dissolves exposing the core tablet for mucoadhesion. In vitro coat intactness test and ex vivo tablet bioadhesion test confirmed that the tablets were targeted and contained in the upper intestine. Further, the pharmacokinetic parametersobtained forJ metformin from the site-specific coated formulation were better ($P<0.05$) than that of the non-site-specific uncoated formulation in the in vivo studies. Standardized formulation was stable during the stability studies conducted as per ICH Q1C guidelines.

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| 18. | Indian J Pharm Sci. 2010 Jul;72(4):431-6. S. | B. Shirsand,<br>Sarasija Suresh,<br>L. S. Jodhana,<br>P. V. Swamy | Formulation Design and Optimization of Fast Disintegrating Lorazepam Tablets by Effervescent Method |

**Abstract:**

Fast disintegrating tablets of lorazepam were prepared by effervescent method with a view to enhance patient compliance. A $3^2$ full factorial design was applied to investigate the combined effect of two formulation variables: amount of crospovidone and mixture of sodium bicarbonate, citric acid and tartaric acid (effervescent material) on *in vitro* dispersion time. Crospovidone (2-8% w/w) was used as

superdisintegrant and mixture of sodium bicarbonate, citric acid and tartaric acid (6-18% w/w) was used as effervescent material, along with directly compressible mannitol to enhance mouth feel. The tablets were evaluated for hardness, friability, thickness, drug content uniformity and *in vitro* dispersion time. Based on *in vitro* dispersion time (approximately 13 s); the formulation containing 8% w/w crospovidone and 18% w/w mixture of sodium bicarbonate, citric acid and tartaric acid was found to be promising and tested for *in vitro* drug release pattern (in pH 6.8 phosphate buffer), short-term stability and drug-excipient interaction. Surface response plots are presented to graphically represent the effect of independent variables (concentrations of crospovidone and effervescent material) on the *in vitro* dispersion time. The validity of the generated mathematical model was tested by preparing two extra-design check point formulations. The optimized tablet formulation was compared with conventional marketed tablet for drug release profiles. This formulation showed nearly eleven-fold faster drug release ($t_{50\%}$ 2.8 min) compared to the conventional commercial tablet formulation ($t_{50\%}$ >30 min). Short-term stability studies on the formulation indicated that there were no significant changes in drug content and *in vitro* dispersion time ($P<0.05$).

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| 19. | Indian J Pharm Sci. 2010 Jan;72(1):130-3. | Shirsand SB, Suresh S, Swamy PV, Para MS, Nagendra Kumar D. | Formulation design of fast disintegrating tablets using disintegrant blends. |

**Abstract:**

In the present work, fast disintegrating tablets of prochlorperazine maleate were designed with a view to enhance patient compliance by direct compression method. In this method, crospovidone (up to 3% w/w) and croscarmellose sodium (up to 5% w/w) in combination were used as superdisintegrants. Since disintegrants complement each other, accelerating the disintegration process when used together. Estimation of prochlorperazine maleate in the prepared tablet formulations was carried out by extracting the drug with methanol and measuring the absorbance at 254.5nm. The prepared formulations were further evaluated for hardness, friability, drug content uniformity, *in vitro* dispersion time, wetting time and water absorption ratio. Based on *in vitro* dispersion time (approximately 12 s), one promising formulation was tested for *in vitro* drug release pattern in phosphate buffer pH 6.8 and short-term stability (at 40°/70% RH for 3 mo), drug-excipient interaction (IR spectroscopy) were studied. Among the formulations tested, formulation $DCPC_4$ containing 5% w/w of croscarmellose sodium and 3% w/w of crospovidone as superdisintegrant emerged as the overall best ($t_{50\%}$ 7.0 min) based on drug release characteristics in pH 6.8 phosphate buffer compared to commercial conventional tablet formulation ($t_{50\%}$ 17.4 min). Short-term stability studies on the promising formulation indicated that there were no significant changes in drug content and *in vitro* dispersion time ($p<0.05$).

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| 20. | Asian Journal of Pharmaceutics, Year 2010, Volume 4, Issue 3 205-211 | Jagadeesh G Hiremath, V Kusum Devi. | Preparation and in vitro characterization of paclitaxel-loaded injectable microspheres |

**Abstract:**

The main objective of this study was to develop paclitaxel loaded poly (caprolactone) injectable microspheres prepared by solvent evaporation method. Mircoparticles were characterized in terms of particle size and size distribution, surface morphology, drug physical state, and crystalline nature by using master size analyzer, scanning electron microscope, differential scanning calorimetry, and X-ray diffraction. Paclitaxel loading over different concentrations was analyzed by high-performance liquid chromatography. In vitro drug release studies were performed in phosphate buffer saline. Best formulation was selected for *in vitro* cytotoxic studies by using MCF-7 breast cancer cell lines.

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| 21. | Indian J.Pharm. Educ. Res. 44(3), July-Sep, 2010 | UV. Bhosale, PV. Swamy. V. Kusum Devi , Nimisha Jain | Effect of Polymer Concentration and Viscosity Grade on Atenolol Release from Gastric Floating Drug Delivery Systems |

**Abstract:**

Gastroretentive floating drug delivery systems of atenolol, an antihypertensive drug with an oral bioavailability of only 50% (because of its poor absorption from lower gastrointestinal tract) have been designed. Hydroxypropyl methylcelluloses of different viscosity grades (K4M and 50 cps) were used as polymers and sodium bicarbonate as gas generating agent to reduce floating lag time. Tablets were prepared by

direct compression method. The prepared formulations were further evaluated for hardness, friability, weight variation, drug content, swelling index, in vitro drug release pattern, short-term stability and drug-excipient interactions. Majority of the designed formulations displayed nearly first order release kinetics releasing more than 75% drug in 10 hours and remained buoyant for more than 24 hours. Drug release data shows that as the proportion and viscosity of polymer increases, drug release decreases**.** The formulation containing atenolol 50 mg, hydroxypropyl methylcellulose (50 cps) 100 mg and 37 mg sodium bicarbonate (20% w/w of tablet) as gas generating agent, appears to be a promising gastroretentive floating drug delivery system of the drug atenolol, releasing more than 90% of the drug in 10 hours.

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| 22. | Pharmacog review 2<br>010 Vol 4/ Issue 7/ Jan-Jun,2010 | Kusum Devi,<br>Nimisha Jain | Importance of novel drug delivery system in herbal medicines ' |

**Abstract:**

Novel drug delivery system is a novel approach to drug delivery that addresses the limitations of the traditional drug delivery systems. Our country has a vast knowledge base of Ayurveda whose potential is only being realized in the recent years. However, the drug delivery system used for administering the herbal medicine to the patient is traditional and out-of-date, resulting in reduced effi cacy of the drug. If the novel drug delivery technology is applied in herbal medicine, it may help in increasing the efficacy and reducing the side effects of various herbal compounds and herbs. This is the basic idea behind incorporating novel method of drug delivery in herbal medicines. Thus it is important to integrate novel drug delivery system and Indian Ayurvedic medicines to combat more serious diseases. For a long time herbal medicines were not considered for development as novel formulations owing to lack of scientific justification and processing difficulties, such as standardization, extraction and identification of individual drug components in complex polyherbal systems. However, modern phytopharmaceutical research can solve the scientific needs (such as determination of pharmacokinetics, mechanism of action, site of action, accurate dose required etc.) of herbal medicines to be incorporated in novel drug delivery system, such as nanoparticles, microemulsions, matrix systems, solid dispersions, liposomes, solid lipid nanoparticles and so on. This article summarizes various drug delivery technologies, which can be used for herbal actives together with some examples.

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| 23. | The Pharma Review.<br>Nov-Dec 2010, vol 8 no.48 | B.G.Shivananda,<br>Kusum Devi,<br>Nimisha Jain,<br>Uday Bhosale. | Mergers and Acquisitions in the Pharmaceutical Industry in India<br>- A Review |

**Abstract:**

One plus one makes three" this equation is the special alchemy of a merger or an acquisition. The key principle behind buying a company is to create shareholder value over and above that of the sum of the two companies. Two companies together are more valuable than two separate companies - at least, that's the reasoning behind mergers and acquisitions. This rationale is particularly alluring to companies when times are tough. Strong companies will act to buy other companies to create a more competitive, cost-efficient company. The companies will come together hoping to gain a greater market share or to achieve greater efficiency. Because of these potential benefits, target companies will often agree to be purchased when they know they cannot survive alone. The latest Pharma Insights report from Price Waterhouse Coopers (PWC) indicates that as pressures on the pharmaceutical industry increase, global consolidation will continue. According to the study, the consolidation will lead to the creation of new 'big biotech' companies in the Asia-Pacific region. The lack of research and development (R&D) productivity, expiring patents, generic competition and high profile product recalls are driving the mergers and acquisition (M&A) activity in the sector.

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| 24. | International Journal of Pharmacy and Pharmaceutical Sciences, Vol. 2, Issue 4, 2010 | Hiremath Jagdish,<br>V. Kusum Devi | Tamoxifen loaded Poly ( ε -caprolactone) based injectable microspheres for breast cancer, |

**Abstract:**

**:** One plus one makes three" this equation is the special alchemy of a merger or an acquisition. The key principle behind buying a company is to create shareholder value over and above that of the sum of the two companies. Two companies together are more valuable than two separate companies - at least, that's the reasoning behind mergers and acquisitions. This rationale is particularly alluring to companies when times are tough. Strong companies will act to buy other companies to create a more competitive, cost-efficient company. The companies will come together hoping to gain a greater market share or to achieve greater efficiency. Because of these potential benefits, target companies will often agree to be purchased when they know they cannot survive alone. The latest Pharma Insights report from Price Waterhouse Coopers (PWC) indicates that as pressures on the pharmaceutical industry increase, global consolidation will continue. According to the study, the consolidation will lead to the creation of new 'big biotech' companies in the Asia-Pacific region. The lack of research and development (R&D) productivity, expiring patents, generic competition and high profile product recalls are driving the mergers and acquisition (M&A) activity in the sector.

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| 25. | Indian J. Pharm. Pract.<br>3(1), Jan-Mar, 2010 | Anju N, Shobha R,<br>Nalini P | Comparison of Efficacy and Safety of Atropine Sulphate and Glycopyrrolate in the Treatment of Organophosphorus Poisoning at St. Martha's Hospital, Bangalore. |

**Abstract:**

Organophosphorus poisoning (OP) is the most common poisoning in India because of their easy availability. Atropine is considered the drug of choice in the management of OP poisoning and continues to be the standard treatment .Glycopyrrolate is a synthetic quaternary amine, a medication of the muscarinic anticholinergic group, with peripheral effects similar to those of atropine. The objective of this study was to compare the efficacy and safety of Atropine and Glycopyrrolate on OP poisoning patients. A total of 33 patients were enrolled in the study. All patients were recruited into two groups and accordingly received either Atropine or Glycopyrrolate as per the recognized dosing schedule as practiced in the hospital. The details of each OP poisoning case was observed and collected in the data collection form and assessed. All 33 patients were admitted to the ICU and the duration of hospital stay ranged from 2 to 21 days the mean ICU stay in Group-A was $5.43 \pm 2.50$, in Group-B was $6.42 \pm 5.13$ ($P = 0.511$). In Group-A, 40 patients required ventilation, whereas 40% did not and in Group-B, 36.85% required ventilation, and 63.15% did not ($P = 0.304$). Among the ADRs documented the most prominent one was Altered Sensorium seen in 64.28% cases in Group-A ($P < 0.001$) whereas in Group-B none had Altered sensorium. The total cost for the anticholinergic treatment in Group-A ranged from 43 rupees to 1503 rupees and in Group-B it was 639 rupees to 4032 rupees ($P < 0.001$) . 3 patients expired, two out of which 2 were from Group-A. The study revealed that both the groups had the same efficacy, but Atropine showed a very distinct CNS toxicity and Glycopyrrolate being a relatively expensive drug.

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| 26. | Indian J. Pharm. Pract. 3(2),Apr-Jun, 2010 | Mavesh I, Shoba,<br>Megha BY | Lamotrigine Induced Erythema Multiforme: A Case Report |

**Abstract:**

The prototypical lesion of Erythema Multiforme is a targetoid dusky erythematous patch, found predominantly on the extremities, although many different morphologies may be observed. Lamotrigine is an anti epileptic drug found to be effective to treat bi polar disorder, however it is reported to cause various hypersensitivity reactions ranging from a simple rash to life threatening reactions like Steven Johnsons Syndrome. A case of Lamotrigine induced Erythema Multiforme is discussed herewith.

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| 27. | Tropical Journal of Pharmaceutical Research, February 2010; 9 (1): 45-50 | N Lalitha, PN Sanjay Pai,<br>MG Vyshak,<br>Uvesh Kadri | Stability-Indicating reverse phase HPLC method for the determination of cefazolin |

**Abstract:**

Purpose: The aim of the present study was to establish the inherent stability of cefazolin through stress studies under a variety of ICH recommended test conditions and, also to develop a stability indicating assay. Methods: A stability-indicating HPLC assay method was developed and validated for cefazolin using an isocratic RP-HPLC method which employed an SS Wakosil II- C18 column (250 mm × 4.6 mm i.d., 5 m) with a mobile phase consisting of phosphate buffer (pH 6.8) and methanol (5:2 v/v), and UV detection at 254 nm at a flow rate of 1 ml/min. The stress testing of cefazolin was carried out under acidic, alkaline,neutral, oxidation and thermal conditions. Results: The drug peak was well resolved from the peaks of the degradation products. The proposed method was validated for sensitivity, selectivity, linearity, accuracy, precision and solution stability. From the degradation studies it was found that the drug was thermally stable but unstable in acidic, alkaline,neutral and oxidative conditions. The response of drug was linear in the concentration Range of 1 – 50 g/ml with the number of theoretical plates, and tailing factor being 1341 and 1, respectively. Limit of detection and limit of quantification were 0.1 and 0.2, g/ml respectively while recovery ranged from 95 -100%. Method precision and precision of the system were within the limits of acceptance criteria. Conclusion: This study presents a simple and validated stability-indicating HPLC method for the estimation of cefazolin in the presence of degradation products. The developed method is specific,accurate, precise and robust. All the degradation products formed during forced degradation studies were well separated from the analyte peak.

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| 28. | Journal of Basic and Clinical Pharmacy, 2010; 01(01):26-28. | Lalitha N, Sanjay Pai PN | Development and validation of RP-HPLC method for estimation of Cefotaxime sodium in marketed formulations |

**Abstract:**

A RP-HPLC assay method has been developed and validated for cefotaxime. An isocratic RP-HPLC was developed on a SS Wakosil II- C8 column (250 mm ×4.6 mm i.d., 5 m) utilizing a mobile phase of ammonium acetate buffer (pH 6.8) and acetonitrile (85:15 v/v) with UV detection at wavelength 252 nm at the flow rate 0 .8 ml/min. The proposed method was validated for sensitivity, selectivity, linearity, accuracy, precision, ruggedness, robustness and solution stability. The response of the drug was linear in the concentration range of 10-70 g/ml. Limit of detection and Limit of quantification was found to be 0.3 g/ml and 0.6 g/ml respectively. The % recovery ranged within 97-102 %. Method, system, interday and intraday precision was found to be within the limits of acceptance criteria. Method was found to be rugged when analysis was carried out by different analyst. The method was found to be sensitive and efficient with 2216 theoretical plates, 0.1128 mm HETP and tailing factor 1. The method was suitable for the quality control of cefotaxime in injection formulations.

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| 29. | Der Pharmacia Lettre, 2(4); 2010: 416- 428 | S. B. Puranik, P. N. Sanjay Pai A.S. Mohammad | Characterization and selection of stationary phase for Gas –Liquid Chromatography |

**Abstract:**

The function of the stationary liquid phase is to separate the sample components into discrete peaks. In addition, the liquid phase should have reasonable chemical and thermal stability. In order to function efficiently the stationary phase must remain in the liquid condition. Usually the lower temperature limit operations are kept 10-15 0 C below the upper temperature limit. The amount of column bleed (vaporization of the stationary liquid phase) must be minimized to prolong the column life, to prevent any fouling of the detector, and to maintain baseline stability on the chromatogram. It makes possible the separation of solutes with very similar properties: On the basis of their behavior with a solute, conclusions may be drawn concerning the nature and the general characterization of the particular solute; they contribute useful data to the knowledge of molecular interactions. Currently, no adequate directions are available for selection of columns. However selection has been proposed through matching of polarities of solutes with stationary phases. Certain theories based on Kovats retention indices and McReynolds Theory could be considered for this purpose. Improved resolution between the peaks was the primary objective for the new column selection, which was carried out based on the different models viz., Kovats retention indices and McReynolds Theory.

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| 30. | Indian Drugs, July 2010; 47(7): 63-66 | Hussain A K,<br>P.N Sanjay Pai,<br>GK Rao | Simultaneous spectrophotometric estimation of Metranidazole and Amoxycillin Trihydrate in marketed formulation |

**Abstract:**

A simple, rapid and economical spectroscopic method has been developed and validated for simultaneous estimation of metronidazole and amoxicillin trihydrate in combined dosage forms using simultaneous equation at 320 nm and 248 nm as two analytical wavelengths for metronidazole and amoxicillin trihydrate respectively in 0.1N NaOH. Both metronidazole and amoxicillin trihydrate at their λ max af 320 nm and 248 nm shows linearity at a concentration ranges of 10-70 mcg/mL. The developed method was found to be accurate, precise and reproducible and has been validated statistically.

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| 31. | Oriental Journal of Chemistry,<br>2010; 26(1):147-150. | G Mubeen,<br>Vaneeta Prakash,<br>Kadri Uvesh | Two spectrophotometric methods for determination of Ornidazole in tablets. |

**Abstract:**

Two simple, precise and accurate colorimetric methods have been developed and validated for determination of Ornidazole in bulk and tablet formulation. These methods involves formation of complex diazonium salt of reduced Ornidazole with Metacresol reagent and Resorcinol reagent which shows absorption maxima (lmax) at 425 nm and 435 nm respectively. The linearity was observed in the concentration range of 5-40 g/mL and 8-20 g/mL for method A and method B respectively. The assay result was found to be in good agreement with label claim. The recovery studies were carried out at three different levels. The methods were validated statistically and by recovery studies and they were found to be accurate, precise and reproducible for determination of Ornidazole in bulk and solid dosage form.

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| 32. | International Journal of Pharma and Bio Sciences 2010:1(1) | G. Mubeen, Mamta Pal, M.N. Vimala | HPLC method for analysis of Lercanidipine Hydrochloride in tablets |

**Abstract:**

A reverse phase HPLC method was developed for quantitative determination of Lercanidipine hydrochloride in tablets. The separation was achieved by using 250 X 4.6mm Wakosil C18 (5 m) column with a mixture of methanol: acetonitrile (70:30) as a mobile phase, at a flow rate of 1.0ml/min. The detection was carried out at 219nm, and the retention time was found to be 4.10min. Linearity was observed in the concentration range of 10-60 g/ml. The mean recoveries obtained for lercanidipine HCl ranged from 96.38 to 101.23 %. The LOD and LOQ was found to be 0.03 g/ml and 0.04 g/ml respectively. The developed method was found to be accurate, precise and rapid for analysis of Lercanidipine HCl in tablets.

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| 33. | Der Pharmacia Lettre, 2(6): 2010, 283-288 | Somashekar P.L,<br>Tripathy A. S,<br>Chandrashekar Javali,<br>Sathish K.P | Spectrophotometric determination of chondroitin sulfate in bulk drug and pharmaceutical formulation |

**Abstract:**

Simple, specific, precise and accurate spectrophotometric method has been developed for the estimation of chondroitin sulfate in bulk and tablet dosage form. The proposed method is based on the principle that chondroitin sulfate condensed with carbazole in presence of strong acid gave pink colour indication at wavelength of maximum absorbance at 530 nm. The Beer-Lambert's law obeyed in the range of 40 – 120 mcg/ml with correlation coefficient was at 0.999. The results presented are statistically validated in accordance with the guidelines provided by ICH. The recovery studies were carried out at three different levels. The precision was good with RSD lower than 2.0 %. The developed method was considerably easy, simple, reproducible and cost effective.

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| 34. | Phytomedicine 17 (2010) 1016–1026;<br>© 2010 Elsevier GmbH. All rights reserved.<br>doi:10.1016/j.phymed.2010.07.012 | S.M. Asdaq,<br>M.N. Inamdar | Potential of garlic and its active constituent, S-allyl cysteine, as antihypertensive and cardioprotective in presence of captopril |

**Abstract:**

It is known that various preparations of garlic and angiotensin-converting enzyme (ACE) inhibitor such as captopril (CAP) have benefi cial effects on the left ventricular function and cardiovascular events after myocardial infarction (MI) when used individually. There is no reported interaction between garlic homogenate (GH) and CAP during and after acute MI. Thus the purpose of the current study was to evaluate the possible pharmacodynamic interaction of GH with CAP on isoproterenol (ISO)-induced myocardial damage in rat. Female Wistar albino rats were treated with GH at three different doses of 125; 250 and 500 mg/kg orally for 30 days and CAP (30 mg/kg, *p.o.*) was incorporated in the interactive groups during the last seven days of GH treatment. Myocardial damage was induced by administration of ISO (150 mg/kg, *s.c.*) for two consecutive days. Biochemical parameters were studied in serum and heart tissue homogenate of all animals. The GH 250 mg/kg was found to dislodge the effect of ISO on superoxide dismutase and catalase and retained the activities of LDH and CK-MB. Incorporation of CAP during GH treatment provided further protection to myocardium from injury. However, higher dose of GH alone or with CAP failed to prevent damaging effect of ISO. Histopathological determinations confi rmed biochemical fi ndings. Thus it is concluded that the combination needs to be used carefully when garlic is consumed at high doses.

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| 35. | Journal of Pharmacy Research<br>2010, 3(3), 522-527 | S M B Asdaq<br>M N Inamdar | Effect of Chronic Therapy of garlic on biochemical and antioxidant changes in presence of Hydrochlorothiazide and Captopril in rats |

**Abstract:**

The aim of the present study was to evaluate the hypolipidemic and antioxidant potential of saffron and its active constituent, crocin, in hyperlipidemic rats. The animals fed either with normal fat diet or high fat diet were administered orally saffron (25, 50, and 100 mg/kg) or crocin (4.84, 9.69, and 19.38 mg/kg) in their respective groups for five consecutive days. Biochemical estimations of triglyceride (TG), total cholesterol (TC), high-density lipoprotein (HDL), low-density lipoprotein (LDL), alkaline phosphatase (ALP), aspartate transaminase (AST), alanine aminotransferase (ALT), malondialdehyde (MDA), glutathione peroxidase enzyme activity (GSHPx), total glutathione (GSH), and oxidized glutathione (GSSG) in serum and superoxide dismutase (SOD), catalase (CAT), thiobarbituric acid reactive species (TBARS), ferric reducing/antioxidant power (FRAP), and total sulfhydryl (SH) groups in liver tissue homogenate were carried out. Both saffron and crocin were effective in decreasing the elevated levels of TG, TC, ALP, AST, ALT, MDA, GSHPx, GSH, and GSSG in serum and increasing SOD, CAT, FRAP, and SH values in liver tissue with reduction in TBARS. The saffron was found to be superior to crocin indicating the involvement of other potential constituents of saffron apart from crocin for its synergistic behavior of quenching the free radicals and ameliorating the damages of hyperlipidemia.

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| 36. | Pak. J. Pharm. Sci.,<br>Vol.23, No.1, January 2010, pp.42-47 | S M B Asdaq,<br>M N Inamdar<br>Mohammed Asad | Pharmacodynamic Interaction of Garlic With Propranolol In Ischemia-Reperfusion Induced Myocardial Damage |

**Abstract:**

The present study was undertaken to explore the interaction of garlic homogenate (GH) with propranolol (PRO) on ischemia-reperfusion injury (IRI) in isolated rat heart preparation. Albino rats were treated with GH at three different doses of 125 mg/kg, (GH-125), 250 mg/kg (GH-250) and 500 mg/kg (GH-500) for 30 days orally. The hearts were excised and mounted on modified Langendorff setup and subjected to 15 min global no flow ischemia and reperfused for 15 min. Pretreatment of animals with PRO, GH-125 and GH-250 (either alone or in combination) provided significant protection to myocardium from IRI damage as indicated by significant decrease in LDH and CK-MB activities in perfusate and an increase in activities of these enzymes in heart tissue homogenate. Similarly, the recovery (%) in developed tension and heart rate were significantly more in treated groups during post-ischemia when compared to control. Moreover, GH-250 either

alone or with PRO showed significant increase in activities of antioxidant enzymes such as superoxide dismutase and catalase during IRI damage. However, GH-500 failed to show cardioprotective effect when given alone or along with PRO. These biochemical findings were supported by changes in histopathological studies.

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| 37. | Appl Biochem Biotechnol (2010) 162:358–372; DOI 10.1007/s12010-009-8740-7 | S M B Asdaq<br>M N Inamdar | Potential of Crocus sativus (saffron) and its Constituent, Crocin, as Hypolipidemic and Antioxidant in Rats |

**Abstract:**

**Aim:** The present study was carried out to determine the interaction of garlic with hydrochlorothiazide (HCTZ) and captopril (CAP) based on biochemical changes, antioxidant profile and histological determinations in rats.

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| 38. | PHYTOTHERAPY RESEARCH: Phytother. Res. 24: 720–725 (2010) Published online in 14 October 2009 Wiley InterScience, (www.interscience.wiley.com DOI: 10.1002/ptr.3009 | S M B Asdaq<br>M N Inamdar | Pharmacodynamic Interaction of Captopril with Garlic in Isoproterenol-induced Myocardial Damage in Rat |

**Abstract:**

The purpose of the present study was to investigate the role of fresh garlic homogenate (FGH) and its bioactive sulphur compound S-allyl cysteine sulphoxide (SACS) in potentiating antihypertensive and cardioprotective activities of captopril in rats. SACS was extracted from the fresh garlic using ion exchange resins with yield of 890 mg/kg garlic. The dose of SACS was calculated based on the amount of SACS extracted from 125 to 250mg of FGH. Albino rats weighing 150–200 g were fed with 10% fructose in fluid for 3 weeks for induction of hypertension and subsequently administered FGH (125 and 250 mg/kg, p.o.) or SACS (0.111 and 0.222 mg/kg/day, p.o.) for the next 3 weeks in their respective groups. In CAP alone and interactive groups (GH + CAP; SACS + CAP), captopril 30 mg/kg was given during sixth week of 10% fructose in fluid. At the end of drug treatment, animals were given isoproterenol 175 mg/kg subcutaneously for two consecutive days. Additionally, varying concentrations of SACS (4, 8, 16, 32 and 64 ng), CAP (1, 2, 4, 8 and 16 ng) and their combination (4:1) were checked for fall in blood pressure in hypertensive rats (10% fructose in fluid without pretreatment) as well as angiotensin-converting enzyme (ACE) inhibiting activity using guinea pig ileum. An isobolographic analysis was used to characterise the interaction between SACS and CAP for fall in blood pressure and ACE inhibiting evaluations. Administration of captopril, low and high doses of FGH (125, 250 mg/kg), either alone or together showed fall in fluid intake and body weight. The combined therapy of FGH 250 mg/kg and CAP was more effective in reducing systolic blood pressure, cholesterol, triglycerides and glucose. The SOD and catalase activities in heart tissue were significantly elevated in groups treated with FGH, SACS, CAP, FGH+ CAP and SACS + CAP. Further, combined therapy of FGH 250 mg/kg and CAP caused significant fall in LDH and CK-MB activities in serum and elevation in heart tissue homogenate. SACS in low dose was less effective than low dose of FGH; similarly, high dose of FGH was more efficacious than high dose of SACS. Corroborating with this, combined therapy of garlic (250 mg/kg) with CAP demonstrated higher synergistic action than combination of SACS (0.222 mg/kg) with CAP suggesting the role of additional bioactive constituents apart from SACS, responsible for therapeutic efficacy of garlic. Moreover, combination of SACS and CAP exerted super-additive (synergistic) interaction with respect to fall in blood pressure and ACE inhibition. This study may represent an advertence on concomitant use of garlic or its bioactive constituent, SACS, with captopril.

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| 39. | Pharmacologyonline 1: 879-890 (2010) | Tazneem.B,<br>Rema Razdan | Protective effect of ethanolic root extract of argyreia Speciosa against trinitrobenzene sulfonic acid induced Ulcerative colitis in rats |

**Abstract:**

Ulcerative colitis is a disease of immune disregulation that causes ulcers in the lining of the rectum and colon. The study of ethanolic root extract of *Argyreia speciosa* belonging to the family convolvulaceae was carried out to evaluate the effect in experimentally induced ulcerative colitis in rats. Adult Wistar rats of either sex were used (n = 36). Colitis was induced by a single intra-colonic application of 2,4,6-trinitrobenzene sulfonic acid(TNBS 20 mg) dissolved in 35% ethanol, into the descending colon. Rats were divided into six groups (n = 6). Group I received phosphate buffer saline, Group II TNBS, Group III, IV and V received TNBS + ethanolic root extract of *Argyreia speciosa* (with different doses of 50, 100 and 200 mg/kg), and Group VI received TNBS + Sulphasalazine (360 mg/kg). After completion of 14 days of treatment, animals were sacrificed and the following parameters were assessed: colon weight/length ratio, morphological score, histological examination, myeloperoxidase, malondialdehyde and superoxide dismutase activity. Anti-microbial activity of EREAS on standard microbial strains was studied by cup-plate and tube dilution method. TNBS induced ulcerative colitis caused increase in colon weight/length ratio, colonic tissue damage, myeloperoxidase activity, malondialdehyde activity and decrease in superoxide dismutase activity. Treatment with EREAS (100mg/kg, 200mg/kg) caused a dose dependent decrease in colon weight/length ratio, colonic tissue damage, myeloperoxidase activity, malondialdehyde activity and increase in superoxide dismutase activity. Our results indicate the efficacy of EREAS in TNBS induced experimental colitis model in rats. EREAS inhibited additional anti-microbial activity.

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| 40. | Pharmacog Magzine | Navneet singh,<br>Arghya Biswas,<br>Syed Imam Rabbani,<br>Kshama Devi<br>Salma Khanam | Hydroalcoholic root bark extract of Salacia oblonga prevented mitomycin-c induced sperm abnormality in Wistar rats |

**Abstract:**

The extract of root bark of *Salacia oblonga* (*SO*) belonging to the family Celastraceae was tested for the anti-mutagenic activity using sperm abnormality test in Wistar rats. The hydroalcoholic extract (0.5 and 1 gm/kg, b.w, p.o. daily for 7 days) was evaluated against Mitomycin-C (MMC-2 mg/kg, b.w, i.p.) induced testicular toxicity by estimating the sperm shape abnormality and sperm count. The sampling was done after 48 hours and 72 hours of the clastogen treatment. The antioxidant activity of the *SO* was evaluated by measuring the serum levels of superoxide dismutase(SOD) and catalase. The results indicated that prior treatment of *SO* had suppressed the changes produced by MMC. *SO* at a dose of 1.0 gm/kg bw had shown significant ($p<0.01$) inhibition in the sperm shape abnormality and sperm count in both the time intervals, while the lower dose (0.5 gm/kg, b.w) showed inhibitory effect mainly at 48 hr duration compared to the MMC group. The results also indicated that *SO* has improved ($p<0.01$) the status of serum antioxidant enzymes compared with the MMC group. The data from the study suggests that *SO* possess antimutagenic effect against MMC and the activity could be due its antioxidant potential.

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| 41. | Pharmacologyonline | Syed Imam Rabbani,<br>Kshama Devi<br>Salma Khanam | Effect of thiazolidinediones on the serum biomarker levels in the nicotinamide-streptozotocin induced type 2 diabetes |

**Abstract:**

Thaizolidinediones (TZDs), a PPAR-γ ligands are used to ameliorate the insulin resistance in the type-2 diabetes (T2DM). Recent clinical data suggest that the chronic therapy of TZDs increases the cardiovascular risk like congestive heart failure. Pioglitazone (PIO) and rosiglitazone (RSG) were tested in three doses viz., 1, 10 and 100 mg/kg to study their influence on the biomarker levels in nicotinamide (230 mg/kg) and STZ (65 mg/kg) induced T2DM. Administration of PIO and RSG for 4 weeksThaizolidinediones (TZDs), a PPAR-γ ligands are used to ameliorate the insulin resistance in the type-2 diabetes (T2DM). Recent clinical data suggest that the chronic therapy of TZDs increases the cardiovascular risk like congestive heart failure. Pioglitazone (PIO) and rosiglitazone (RSG) were tested in three doses viz., 1, 10 and 100 mg/kg to study their influence on the biomarker levels in nicotinamide (230 mg/kg) and STZ (65 mg/kg) induced T2DM. Administration of PIO and RSG for 4 weeks significantly altered the serum glutamate oxaloacetate (SGOT), serum glutamate pyruvate transaminase (SGPT), lactate dehydrogenase (LDH) and creatinine kinase (CK-MB) levels in the diabetic animals. A dose-dependent decrease in the level of SGOT was observed after the administration of PIO and the peak reduction ($P<0.001$) was observed at 10 and 100 mg/kg compared to the diabetic animals. In addition, PIO reduced ($P<0.001$) the SGPT and LDH levels at the tested doses in the diabetic

condition. On the other hand, RSG at 10 and 100 mg/kg reduced ($P<0.001$) the SGOT and SGPT levels, while the lower dose of RSG (1 mg/kg) decreased ($P<0.05$) only the SGOT level compared to the T2DM. At 100 mg/kg, RSG was also found to enhance ($P<0.001$) the level of LDH in the diabetic animals. Further, both PIO and RSG at 100 mg/kg increased the CK-MB level compared to the diabetic rats. The results indicated that PIO and RSG suppressed the NA-STZ mediated cytolytic damage in T2DM however, both drugs at 100 mg/kg increased the CK-MB levels suggesting the cardiac risk.

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| 42. | Advances in Pharmacology and toxicology | Syed Imam Rabbani<br>Kshama Devi<br>Salma Khanam | Effect of pioglitazone, metformin and glimepiride in combination on the erythropoietic and germinal cells in diabetic male rats. |

**Abstract:**

Triple drug combination of pioglitazone (Pio-1 mg/kg) + metformin (Met-50 mg/kg) + glimepiride (Gmp-0.2 mg/kg) orally for 4 weeks was tested against the nicotinamide (NA-230 mg/kg, ip)-streptozotocin (STZ-65 mg/kg, ip) induced micronuclei (MN) frequency and sperm abnormalities in male Wistar rats. The antioxidant status was evaluated by measuring the serum lipid peroxidation (LPO), catalase (CAT), superoxide dismutase (SOD) and glutathione peroxidase (GPx) levels. The combination treatment reduced ($P<0.001$) the incidences of MN, sperm shape abnormality and enhanced ($P<0.01$) the P/N ratio, sperm count compared to the diabetic state. Further, the Pio+Met+Gmp enhanced the antioxidant condition and reduced the hyperglycemia in the diabetic rats. The observations suggest that the combination of Pio+Met+Gmp reduced the somatic and germinal cells defect in diabetic animals, mostly by improving the antioxidant status.

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| 43. | International Journal of Pharmacy and Pharmaceutical Sciences Vol 2, Suppl 1, 2010 | Venu Pamidiboina,<br>Rema Razdan<br>M.G.hariprasad | Evaluation of the antihyperlipidemic, cardioprotective activity of a Polyherbal formulation |

**Abstract:**

Back ground & objectives Atherosclerosis is the leading cause of death in the developed and developing countries like India. It is associated with elevated lipid levels in the blood. Treatment of hyperlipidemia is one of the major approaches towards decelerating the atherogenic process. The objective of the study was to evaluate the antihyperlipidemic activity of Antichol, a polyherbal formulation in rats.

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| 44. | International Journal of Pharmacy and Pharmaceutical Sciences, 2010, Vol 2, Issue 4: 46-50. | Divya jyothi,<br>Salma Khanam,<br>Rokeya Sultana | Optimization of microwave assisted solvent extraction of withanolides from leaves of Ashwagandha. |

**Abstract:**

A simple and rapid microwave –assisted extraction (MAE) procedure was developed and optimized for fast extraction of withanolides from *Withania somnifera*. Several variables that can potentially affect the extraction efficiency, namely temperature, irradiation time, power of irradiation and powder size were optimized by means of orthogonal array design procedure. Quantification of withaferinA was done by validated HPTLC at 223nm. Under optimum conditions, MAE showed significantly higher recoveries and drastic reduction in extraction time than those obtained by conventional extraction method (soxhlet). In addition, a drastic reduction of the extraction time (4 min versus 14h) and solvent consumption (20ml versus 50ml) was achieved with MAE when compared with that provided by the soxhlet extraction as a reference method. The effect of microwave on cell destruction of plant material was observed by scanning electron microscopy (SEM).

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| 45. | Pharmacie Globale (IJCP) 2010, 4 (01): 1-5 | Divya jyothi,<br>Salma Khanam,<br>Rokeya Sultana | Optimization of microwave assisted extraction of withanolides from roots of Ashwagandha and its comparison with conventional extraction method |

**Abstract:**

In the present study, simple and rapid microwave-assisted solvent extraction (MASE) technique was developed for the extraction of withanolides in leaves of *Withania somnifera* and amount of withaferin A in the extracts were quantified by validated HPTLC method. Several variables that can potentially affect the MASE efficiency, namely temperature, irradiation time, power of irradiation and powder size were optimized by means of orthogonal array design procedure. Under optimum conditions, MASE showed significantly higher recoveries and drastic reduction in extraction time than those obtained by conventional extraction method (refluxation and soxhlation). In addition, a drastic reduction of the extraction time (2 min versus 14h) and solvent consumption (20ml versus 50ml) was achieved with MASE when compared with that provided by the conventional method. The effect of microwave on cell destruction of plant material was observed by scanning electron microscopy (SEM).

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| 46. | International journal of pharma world research 2010,Vol-1, Issue 2 :1-19. | S.Priya, Zeeshan Afsar Salma Khanam, Bhuvaneshwari | Studies on Antifungal Activity of Different Extracts of *Cassia fistula* and Bioactivity Guided Isolation and Identification of Antifungal Agent. |

**Abstract:**

The different parts of *Cassia fistula Linn*., such as leaves, fruits, seeds & stem bark wereextracted using water, aqueous methanol(40%) and methanol. The fungi *Candida albicans, Aspergillus niger, Trychophyton mentagrophytes and Epidermophyton floccosum* were selected for screening of antifungal activity by agar diffusion method and tube dilution method. Amphoterecin- B was used as standard antifungal agent. All the extracts of the bark showed good antifungal activity when compared to other extracts. Hence the bark was subjected to Phytochemical screening. All the extracts of the bark obtained by successive solvent extraction were also studied for antifungal activity. The methanol extract of bark showed maximum antifungal activity.Minimum inhibitory concentration was found to be 15 mg/ml. A TLC method was developed andBioautography was carried out for methanol extract using different fungi to localize the activeantifungal constituent and this was isolated by column chromatography and preparative TLC. Thiswas subjected to characterization using IR and 1H-NMR spectroscopy andwas found to be ananthraquinone derivative, 6-9-dimethoxy-3-methyl, 1,4,5-trihydroxy- anthraquinone-2-carboxylic acid.

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| 47. | Der Pharmacia Lettre, Feb:2010, | Rokeya Sultana, Salma Khanam, Kshama Devi | Evaluation of Immunomodulatory activity of Solanum xanthocarpum fruits aqueous extract |

**Abstract:**

*Solanum xanthocarpum* is widely recognized in Ayurvedic system of Indian medicine for tratment of respiratory problems. This plant is also known to be important rejuvenators and is useful in several chronic ailments. The present study was undertaken to explore the immunomodulatory activity of the aqueous extracts of *Solanum xanthocarpum* (family:Solanaceae) fruits on haematological parameter and neutrophil adhesion test using cyclophosphamide induced immunosuppression model. The extent of protection against immunosuppression was evaluated after 14 days of respective drug administration. The aqueous extract of fruits of *Solanum xanthocarpum* showed pronounced immunoprotective activity by increasing the %Hb, RBC, total WBC count and % neutophils at a dose of 100mg/kg body weight. Phytochemical screening of aqueous extracts of the plant showed presence of carbohydrates, glycosides, saponin, flavonoids, steroids, phenols, triterpenoids and diterpenes.

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| 48. | International Journal of ChemTech Research 2010, Vol.2, No.1: 205- 208. | Ayesha Siddiqua, K. B. Premakumari, Rokeya Sultana, Vithya Savitha | Antioxidant activity and estimation of total Phenolic content of Muntingia calabura by Colorimetry |

**Abstract:**

The antioxidant potential of the 99% methanolic extract of leaves of *Muntingia calabura* was assessed by using 1,1-diphenyl-2-picrylhydrazyl (DPPH) and total phenolic content was measured by Folin-Ciocalteau (FC) by Singleton and Rossi using Gallic acid and Tannic acid as the calibration standard. Moreover *Muntingia calabura* leaf *extract* showed strong reducing power and significant antioxidant activity. In the DPPH radical scavenging assay, the IC50 value of the extract was found to be 22 g/ml. The total phenolic content was measured by Folin-Ciocalteau was found to be 0.903 for Gallic acid when compare to 2.900 for tannic acid.

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| 49. | Archives of Applied Science research, 2010, 2 (4): 44-49. | Kuntal Das<br>Raman Dang. | Influence of biofertilizers on stevioside content in Stevia *rebaudiana* grown in acidic soil condition |

**Abstract:**

The present study was carried out to evaluate the influence of biofertilizers on stevioside content (Main active principle) in the leaves of Stevia rebaudiana grown in acidic soil condition. The six month field experiment study was revealed the combined application of three biofertilizers showed that the total yield of fresh biomass has been recorded an increase up to sixth month, being highest in the combined application of biofertilizers over that of their corresponding sole applications. The percent increase of bio-mass yield was recorded highest (22.14%) in the treatment when all the bio-fertilizers were applied together. Further the results envisaged the content of stevioside were recorded significantly higher (20.17 %) with the same treatments (T8) as compared to control by applied HPLC chromatogram. The chromatographic separations were carried out using a C18 column using the mobile phase consisting of methanol and water, and with UV detection at 210 nm. The limits of determination of stevioside were 4 g/ml for the leaf extracts.

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| 50. | Bio Med, April-June 2010, 5(2); 112-119 | Kuntal Das<br>Raman Dang<br>Harish Shah<br>Shivananda T.N<br>Syed Bilal | Evaluation of antifungal activity of various extract of *Holarrhena antidysenterica* Roxb. |

**Abstract:**

The present investigation was evaluated for potential antifungal activity of different extracts of *Holarrhena antidysenterica.* Separately leaves, stem and roots were extracted with chloroform, methanol and aqueous solvents and their antifungal activity were compared against *candida albicans*, *aspergillus niger* by agar well diffusion technique. The study revealed the potential antifungal activity of different extracts of this plant, determined with zone of inhibition against standard Fluconazole (10 g/0.1 ml). However all the extracts having concentration dependent significant antifungal activity ($P<0.001$) compared to standard. Such results variation may be due to the effect of rich steroidal phytoconstituents content in the plant. The methanolic extracts from this plant sources showed more potent than later two extracts. Results revealed methanolic bark extract at 15 mg/ml concentration showed higher activity ($17.2\pm0.058$) against *candida albicans* where as methanolic leaves extract showed higher activity ($20.2\pm0.11$) against*aspergillus niger* at concentration of 15 mg/ml. This proved that Kurchi is a potential antifungal agent as non antibiotics sources.

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| 51. | The Pharma Review, March-April, 2010, 112-118. | Kuntal Das,<br>Ramanan Dang,<br>Manjunath U Machale<br>Santoshsh Fatepuri. | Formulation and Evaluation of Herbal Gel Containing Stevia Leaves Extract |

**Abstract:**

The aim of this study was to formulate and evaluate the noble herbal moisturise gel containing Stevia extract. The cosmetic gel formulation was designed by using aqueous extract of *Stevia rebaudiana* leaves in varied concentrations (2.5%, 5.0% and 10.0%) and evaluated using physiological measurements. The gel was prepared by using various polymer bases (HPMC, Sodium CMC and Carbopol 934). Among them Carbopol 934 (Polymer grade) has given better gel formation at particular (1.0%) concentration. The gel was prepared by utilizing

Carbopol 934, Stevia extract, Propylene glycol 400 (5%), Methyl paraben (0.5%), and required amount of distilled water. Finally skin pH (6.8-7.0) was maintained by drop wise addition of tri-ethanolamine solution. The physicochemical parameters of formulations SF-I to SF-III, i.e. pH, viscosity, spreadability, extrudability were found to be in the range of 6.89 ± 0.20 – 6.98 ± 0.12, 7853- 24580 cps (at different RPM using spindle # 7, 250C), 27.32- 30.03 % and 89.21- 91.73% respectively. Stability study have carried out as per ICH guideline for 3 months at different temperatures and results revealed formulation containing 2.5% Stevia extract showed comparatively better stability than other formulations and control sample. Further all the formulations have studied for toxicity and skin irritancy on animal model (Rabbit) before application to the human volunteers. Results show there were no toxicity and no skin irritation to the animals by evaluated various parameters (PDI scores of eythema/edema, behavioral observations, body weight determination, hematological & biochemical parameters and histopathological analysis) when compared with control formulation.

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| 52. | Der Pharmacia Lettre, 2(6): 2010, 283 288 | Somashekar P.L, Tripathy A S, Chandrashekar Javali, Sathish K.P, | Spectrophotometric determination of chondroitin sulfate in bulk drug and pharmaceutical formulation |

**Abstract:**

Simple, specific, precise and accurate spectrophotometric method has been developed for the estimation of chondroitin sulfate in bulk and tablet dosage form. The proposed method is based on the principle that chondroitin sulfate condensed with carbazole in presence of strong acid gave pink colour indication at wavelength of maximum absorbance at 530 nm. The Beer-Lambert's law obeyed in the range of 40 – 120 mcg/ml with correlation coefficient was at 0.999. The results presented are statistically validated in accordance with the guidelines provided by ICH. The recovery studies were carried out at three different levels. The precision was good with RSD lower than 2.0 %. The developed method was considerably easy, simple, reproducible and cost effective

## SRI ADICHUNCHANAGIRI COLLEGE OF PHARMACY

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## DEPTARTMENT OF PHARMACEUTICS

| Sl. No. | Name of Journal, Volume No. Issue and Period | Author/s | Title of the article |
|---|---|---|---|
| 1. | Indian J Pharm Educ Res Vol. 44(1); 2010:56-65. | Prabhakara Prabhu Nissar Ahmed, Harish N.M, Mohd. Gulzar Ahmed R.Narayana Charyulu, D.Satyanarayana, Marina Koland. | Investigation of Colon Specificity of Novel Polymer Khaya Gum |

**Abstract:**

The fast disintegrating core tablets of budesonide, were prepared by direct compression technique. These tablets were coated with khaya gum and were further coated using eudragit S-100 by dip coating technique. The tablets were evaluated for hardness, friability, weight variation, swelling index, drug content, in vitro release studies and in vivo studies in rabbits. In vitro drug release studies were carried out in presence and absence of rat cecal contents and revealed that khaya gum, protected the drug from being released in the upper parts of the GIT to some extent but the enteric coated formulations completely protected the drug from being released in the upper parts of the GIT, and released the drug only in the colon by bacterial degradation of gums. It was found that the khaya gum did not completely protect the drug release in the upper digestive tract and exhibited different release profiles in presence and absence of rat cecal contents. Hence, it cannot be used alone either for targeting the drug to the colon or for sustaining or controlling the release of drugs.

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| 2. | Pak. J. Pharm. Sci.,<br>Vol.23, No.3, July 2010, pp.259-265. | Prabhakara Prabhu,<br>Nissar Ahmed,<br>Harish N.M,<br>Mohd. Gulzar Ahmed,<br>R.Narayana Charyulu,<br>D.Satyanarayana<br>EVS Subrahmanyam. | Investigation and Comparison of Colon Specificity of Novel Polymer Khaya Gum with Guar Gum. |

**Abstract:**

To investigate the colon specificity of novel natural polymer khaya gum and compare with guar gum. Release profile of tablets was carried out in presence and absence of rat cecal contents. The fast disintegrating core tablets of budesonide, were initially prepared by direct compression technique. Later, these tablets were coated with khaya gum or guar gum. These tablets were further coated using Eudragit L-100 and X-ray images were taken to investigate the location and integrity of the tablets in different parts of GIT in rabbits. The release profiles revealed that khaya or guar gum, protected the drug from being released in the upper parts of the GIT to some extent but the enteric coated formulations completely protected the drug, and released in the colon by bacterial degradation of gums. It was found that both the polymers exhibited different release profiles in presence and absence of rat cecal contents. However, enteric coat helped in targeting to colon very effectively. Better dissolution models revealed the colon specificity of polysaccharides alone cannot be used either for targeting to the colon or for sustaining or controlling the release of drug.

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| 3. | Int. J. Res. Pharm. Sci.<br>Vol- 1, Issue-3, 259-266, 2010. | Prabhakara Prabhu,<br>Nissar Ahmed,<br>Harish N.M,<br>Mohd. Gulzar Ahmed,<br>R.Narayana Charyulu,<br>D.Satyanarayana<br>EVS Subrahmanyam. | Preparation and Evaluation of Transdermal Patches of Papaverine hydrochloride. |

**Abstract:**

Transdermal patches of Papaverine hydrochloride were prepared by solvent casting method using ethyl cellulose: PVP, PVA: PVP and eudragit RL-100:RS-100 in different ratios. The physicochemical parameters like flexibility, thickness, smoothness, weight variation, moisture content, hardness and tensile strength were evaluated and found to be flexibles had, uniform thickness and weight, good drug content and little moisture absorption. The *in-vitro* diffusion studies by modified Keshery-Chein cell with cellophane as diffusion membrane showed the formulation followed zero order release. The formulation containing PVA:PVP as polymers showed faster release rate (hydrophilic polymers) compared to eudragit RL-100:eudragit RS-100 (hydrophobic polymers) or combination of hydrophilic and hydrophobic polymers (Ethyl cellulose and PVP). The stability studies indicated that all the patches maintained good physicochemical properties and drug content after storing the patches in different storage conditions. *In vivo* studies showed that papaverine hydrochloride helps in decreasing the effect of isoproterenol induced myocardial necrosis.

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| 4. | Res. J. Pharm. Bio. Chem. Sci:<br>Vol-1, Issue-3, 593-599, Jul-Sep 2010. | Mohd. Gulzar Ahmed,<br>Kiran Kumar GB,<br>Vedamurthy Joshi,<br>Irfan Ali | Comparative study of dissolution behavior on solid dispersions and inclusion complexes of rofecoxib. |

**Abstract:**

Drug dissolution studies are essential for assessment of drug absorption and many agents show the poor aqueous solubility results with poor absorption. The present study is aimed at improving the dissolution of poorly water-soluble NSAID, rofecoxib. The physical mixtures and solid dispersions were prepared in different proportions using hydrophilic carriers like PVP and PVPVA. Inclusion complexes of -cyclodextrin (CD) were also prepared in 1:1 and 1:2 ratios to study the influence on the dissolution rate. The prepared formulations were characterized for different studies. The dissolution rate were found to be in the following order: -CD >solid dispersion >physical mixture > pure drug. The enhancement in solubility of rofecoxib helps in improving its bioavailability and also to reduce its dose.

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| 5. | Int. J. Pharm. Bio Sci:<br>Vol-1, Issue-3, 01-08, Jul-Sep 2010. | Mohd. Gulzar Ahmed, Narayana Charyulu. R, Kanthraj. K, Harish. N.M Prabhakar Prabhu. | Preparation and Evaluation of Periodontal Strips of Gatifloxacin for Periodontal Diseases. |

**Abstract:**

Gatifloxacin is a broad-spectrum antimicrobial agent, which is active against a number of aerobic, anaerobic, gram positive and gram negative periodontal pathogens. In the present investigation, chitosan strips containing Gatifloxacin (10%, 20% and 30% by weight of polymer) were prepared by solution casting method using 1% v/v acetic acid in water. Further strips containing 30% gatifloxacin were cross-linked by exposing to the vapours of 2% v/v glutaraldehyde in water to extend the release. Macroscopical features revealed that drug was dissolved in the polymer matrix rather than dispersing. The prepared films were evaluated for their thickness, content uniformity, weight variation, tensile strength, hardness and *in-vitro* dissolution. The average weight and thickness of both the crosslinked and namcross-linked strips were uniform. There was a reduction in the tensile strength and increase in hardness when the films were cross-linked. Static dissolution studies showed a burst release initially followed by a progressive fall in the release of the drug and extended upto 19 days once the strips were cross-linked. Release kinetics of gatifloxacin from chitosan strips followed the higuchi's diffusional model and also showed zero order release profile.

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| 6. | Res. J. Pharm. Bio. Chem. Sci:<br>Vol-1, Issue-3, 693-698, Jul-Sep 2010. | Rajesh Kowti Harsha R, Dinesh R, Mohd. Gulzar Ahmed, Hareesh AR, Thammanna Gowda SS, Satish Kumar BP, Irfan Ali Mohd. | Antimicrobial activity of ethanol extract of leaf and flower of Spathodea campanulata P. Beauv. |

**Abstract:**

**:** The ethanol extract of leaf and flower of *Spathodea campanulata* was investigated for antimicrobial activity at 10 mg/ml concentrations by using Kirby-Bauer disc diffusion method against gram positive and gram negative organisms like *Escherichia coli, Klebsiella pneumonia, Proteus vulgaris, Pseudomonas sps, Salmonella typhimurium, Bacillus subtilis, Staphylococcus aureus, Vibrio cholera*. After incubation for 24 hrs, the zone of inhibition was compared with standard antibiotics genatmycin and streptomycin (10 g/ disc). From the dose dependent study it was observed that the ethanol flower extract was more potentent than leaf extract. Flavonoids and tannins present in the both ethanol extract may be responsible for the antimicrobial activity.

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| 7. | Journal of Pharmacy Research:<br>Vol-3, Issue-8, 1785-1787 Aug 2010. | Mohd. Gulzar Ahmed Kiran Kumar GB, Sathish Kumar BP. | Formulation and Evaluation of Nifedipine Transdermal Patches. |

**Abstract:**

Transdermal patches of nifedipine with different composition of PVP and PVA polymers were prepared by moulding technique. The physicochemical parameters such as appearance, thickness, weight, folding endurance, moisture absorption, percentage elongation and tensile strength were evaluated. The thickness and weight of all patches were in the range of 0.12 to 0.28 mm and 17.26 to 38.60 mg/cm2 respectively. Moisture absorption was increased as the concentration of PVP was increased. All the patches exhibited adequate folding endurance and good drug content uniformity. *In vitro* release profiles of the drug from different patches were studied using abdominal skin of albino rats and modified Keshary Chein diffusion cell for a period of 24 hrs and it was found that, as the concentration of PVP increased the drug release was also increased. Polymers and their combination influenced the film properties as well as the release characteristics. Effect of penetration enhancers on the *in- vitro* permeation of nifedipine across rat abdominal skin was carried out for patches with 3 different types of penetration enhancers showed all the patches with permeation enhancer increased the permeation of the drug from the membrane.

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| 8. | Journal of Current Pharmaceutical Research: Vol-2, Issue-1, 26-32, 2010. | Mohd. Gulzar Ahmed, Sathish Kumar BP, Kiran Kumar GB. | Formulation and Evaluation of Gastric Mucoadhesive Drug Delivery Systems of Captopril. |

**Abstract:**

Gastro-retentive beads of captopril were prepared by orifice ionic gelation method in 1:1 and 9:1 ratio of alginate along with mucoadhesive polymers viz; HPMC, MC, carbopol 934P, chitosan and cellulose acetate phthalate. The prepared beads were subjected for various evaluation parameters.The percentage drug content was found to be in the range of 59.4 - 91.9. It was observed that as the alginate proportion was increased, the average size of beads also increased. Photomicrographs revealed that the beads were spherical in shape. Alginate chitosan (9:1) beads showed excellent microencapsulation efficiency (89.7 percent). Alginate- Carbopol 934P exhibited maximum efficiency of mucoadhesion in 0.1 N hydrochloric acid (44 percent for 1:1 and 22 percent for 9:1) at the end of 8 hours, whereas least mucoadhesion was observed with alginate-Cellulose acetate phthalate beads. The *in vitro* release studies were carried out in 0.1 N hydrochloric acid and the release were found to be more sustained with Alginate-chitosan beads (9:1) than Alginate-Carbopol 934P (1:1) beads. The alginate-cellulose acetate phthalate beads showed the better sustained release as compared to all other alginatepolymer combinations. Regression analysis showed that the release followed zero order kinetics in 0.1 N hydrochloric acid (pH 1.2).

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| 9. | Int. Jour Pharm Sci: May-Aug 2010,2(2): 508-514 | Hareesh AR, Harsha R, Rajesh Kowti, Mohd. Gulzar Ahmed, Sathish Kumar BP, Dinesh R, Irfan. | *In Vitro* Antioxidant and free Radicals Scavenging activity of Flower of Spathodea Campunalata P Beauv. |

**Abstract:**

The aim of the study is to investigate the antioxidant activity of ethanol extract of flowers of *Spathodea campanulata* through TBARS, hydroxyl radical, DPPH radical scavenging assay. Ethanol extract of flowers of *Spathodea campanulata* showed significant dose dependent antioxidant activity, with a direct relationship between activity and concentration of extract. The extract showed an important free radical scavenging activity towards the lipid peroxidation inhibition, hydroxyl radical, DPPH radicals, with IC50 values of 201,200 and 225 $\mu$g/mL\ respectively. At 500$\mu$g/mL lipid peroxidation inhibition, hydroxyl radical, DPPH radical scavenging assay showed maximum inhibition 82, 84 and 68% respectively. The extract showed significant activity in the entire assay when compared to the standard antioxidants. These results clearly indicate that the ethanol extract of *Spathodea campanulata* flowers is a potential antioxidant and free radicals scavenging activity.

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| 10. | Int. Jour Pharm Sci: May-Aug 2010,2(2): 544-550. | Sathish Kumar BP, Yogesh HS, Hareesh AR Ganachari MS, Mohd. Gulzar Ahmed, Rajesh Kowti. | Role of Pharmacist in assessment and education regarding awareness of organophasphorous poisoning among the people. |

**Abstract:**

To assess and educate the people for creating awareness in handling of Organophosphorous poisoning and to create an awareness regarding accidental / occupational poisoning. It is an educational intervention study, in which the interviews were conducted among the randomly selected study subjects before and after educational programme and data were collected and analysed using paired.t. test. Data were collected and pooled and analyzed under the five aspects of knowledge, they are; storage, handling before spray, handling after spray, organophosphorus poisoning and first aid measures. Results showed that there was significant improvement in the knowledge scores before and after the educational intervention. It was also statistically ($p < 0.0001$) highly significant.

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| 11. | Pharmanest , Vol-1, Issue-1, 77- 82, 2010. | Mohd. Gulzar Ahmed, Kiran Kumar GB, Sathish Kumar BP Harish AR. | Formulation and Evaluation of Solid Dispersions of Aceclofenac. |

**Abstract:**

The present study is aimed at improving the dissolution of poorly water-soluble drug, aceclofenac solid dispersion technique was adopted to enhance solubility. The solid dispersions were prepared in different proportions using hydrophilic carriers like Urea and Mannitol. The dissolution rate studies were performed in both simulated gastric fluid and simulated intestinal fluid. It is observed that the dissolution was affected by the acidity of the medium. Solid dispersions gave faster dissolution rate when compared to corresponding physical mixture and pure drug. In vivo absorption and anti-inflammatory activity studies of solid dispersions also confirmed the above results. The FTIR and DSC studies revealed that there is no interaction between drug and carriers and the drug, aceclofenac is stable in solid dispersions.

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| 12. | Inventi Rapid: Ethnopharmacology Vol. 1, Issue 1, May 2010. | Hareesh AR, Chetan IA Rajesh Kowti, Harsha R, Mohd. Gulzar Ahmed, Satish Kumar BP Thammanna Gowda SS, Vedamurthy joshi | Nitric oxide and Superoxide radical scavenging of flower of *Spathodea campanulata* P. Beauv |

**Abstract:**

The present study is to investigate the antioxidant activity of ethanol extract of flowers of *Spathodea campanulata* by nitric oxide radical, superoxide radical scavenging assay and phosphomolybdonum method. Ethanol extract of flowers of *Spathodea campanulata* showed significant dose dependent antioxidant activity, with a direct relationship between activity and concentration of extract. The extract showed an important free radical scavenging activity towards the nitric oxide and superoxide radicals, with IC50 values of 175 and 246 g/mL respectively. Total antioxidant capacity was found to be 50 and 500 g/mL of *Spathodea campanulata* extract and was equivalent to 8.42 and 148.8 g/mL of α-Tocopherol. At 500 g/mL nitric oxide and superoxide radical scavenging assay showed maximum inhibition of 74 and 79% respectively. The extract showed significant activity in all assay when compared to the standard antioxidants. These results clearly indicate that the *Spathodea campanulata* flowers is a potential antioxidant and nitric oxide and superoxide radicals scavenging activity.

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| 13. | Int J Chem Sci 8(4), 2010, 2294- 2308. | Kanth Raj K, Minhas P Mohd. Gulzar Ahmed, Narayana Charyulu R, | Design and comparison of periodontal strips of gatifloxacin for periodontal diseases. |

**Abstract:**

Treatment of periodontitis aims at eradicating or controlling specific pathogens. Antibiotics are prime candidates for patient with recently diagnosed active periodontitis.. The purpose of this study was to design different polymeric strips containing same concentration of drug, ability to control and compare drug release characteristics by cross-linking and to study various pharmacokinetic parameters like physicochemical, stability and mass balance studies.

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| 14. | Indian Journal of Novel Drug delivery, 2(3), Jul-Sep, 2010, 88- 95. | Vedamurthy Joshi, Mohd. Gulzar Ahmed, Sarsija Suresh, Rajesh Kowti. | A Comparative Study: Solution Stability and Dissolution Behavior of Solid Dispersions Curcumin. |

**Abstract:**

Curcumin (CU), a yellow pigment obtained from Curcuma longa shows profound biological activities. Literature reveals that CU is insoluble in water and susceptible to higher pH. This work is focused firstly to study the susceptibility of curcumin in water, various pH conditions in presence and absence of ascorbic acid (AA), tartaric acid (TA) and citric acid (CA) by a simple UV absorption method and secondly to prepare and evaluate curcumin solid dispersions (CSD) by physical mixtures, hot melt method and solvent evaporation method using PEG-4000, PEG-6000 and PVP K-30 as carriers. Drug, carrier ratio for physical mixtures and hot melt method was 1:1, 1:4 and 1:8; drug, carrier and adsorbent (micro crystalline cellulose) ratio in solvent evaporation method was 1:1:2. Selected formulations were studied for TLC, FTIR, SEM, X-ray diffraction studies, in vitro release and in vitro absorption studies using everted rat gut technique. Results indicated that the CU and CSD were unstable in solution; the stability was more in acidic pH and decrease as the pH increases. Presence of AA, TA and CA in solution enhanced the CU aqueous stability relatively by 3 folds in pH 7.4 however more degradation was observed in CSD solutions in pH 7.4 even in presence of these acids. Hot melts of drug with PEG 6000 in 1:8 ratio showed maximum solubility than that of other CSDs. Hot melts showed burst release in 10 min followed by the degradation of curcumin in aqueous solution indicating occurrence of rapid hydrolytic reaction. In vitro absorption of hot melts and pure CU in rat gut was insignificant as the permeability of both were negligible.

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| 15. | International journal of Pharm Sci & Biotech , Vol-1, Issue-2, 2010. | Mohd. Gulzar Ahmed, Rajesh Kowti, Sathish Kumar BP, Harish AR, Harsha R Thammanna Gowda SS. | *In vitro* anti oxidant acitivity of leaves of Spathodea campanulata P Beauv. |

**Abstract:**

The aim of the study is to investigate the antioxidant activity of ethanol extract of *Spathodea campanulata* leaves in different model systems. Ethanol extract of *Spathodea campanulata* leaves showed significant dose depen-dent antioxidant activity, with a direct relationship between activity and concentration of extract. The extract showed an effective free radical scavenging activity towards the lipid peroxidation inhibition, hydroxyl radical, DPPH radicals with IC50 values of 220, 250, 185 g/mL respectively. At 500 g/mL, in TBARS assay, hydroxyl radical, DPPH radical scavenging assay, it showed maximum inhibition of 72, 76, and 74% respectively. These results clearly indicate that leaves of *Spathodea campanulata* is effective in scavenging free radicals and has potential antioxidant ability.

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| 16. | Int.J.Drug Dev.&Res, 2(3): 2010:622-628. | Rajesh Kowti, Harsha R, Mohd. Gulzar Ahmed, Harish AR, Dinesha R Irfan Ali Mohammed. | *In-vitro* free radical scavenging acitivity of leaves of *Spathodea campanulata P* Beauv. |

**Abstract:**

The present study is to investigate the antioxidant activity of ethanol extract of Spathodea campanulata leaves in different model systems. Ethanol extract of Spathodea campanulata leaves showed significant dose dependent antioxidant activity, with a direct relationship between activity and concentration of extract. The extract showed an effective free radical scavenging activity towards the nitric oxide and superoxide radicals with IC50 values of 160 and 198 $\mu$g/mL respectively. Total antioxidant capacity at 50 and 500 $\mu$g/mL of Spathodea campanulata extract was equivalent to 29.2 and 199.4 $\mu$g/mL of á-Tocopherol. At 500 $\mu$g/mL, in nitric oxide radical and superoxide radicalscavenging assay it showed maximum inhibition of 81 and 79% respectively. These results clearly indicate that leaves of Spathodea campanulata is a effective antioxidant and also superoxide and nitric oxide radicals scavenging activity.

# DEPARTMENT OF MEDICINAL CHEMISTRY

| Sl. No. | Name of Journal, Volume No. Issue and Period | Author/s | Title of the article |
|---|---|---|---|
| 1. | Res J PharmBioChem Sci. 1(1), 2010, 93 | N.K.Sathish<br>Y.C. Mayur | Microwave-assisted N-Alkylation of 1,3 substituted acridones in dry media |

**Abstract:**

N-Alkylation of 1,3-disubstituted acridones has been done under microwave irradiation in absence of solvent. Various dimethyl and diacetoxy substituted acridones have been alkylated at N10-position with alkyl halides (1-bromo, 3-chloro propane and 1-bromo, 4-chloro butane) by using NaOH/K2CO3 adsorbed on Al2O3 in the presence of TBAB under microwave irradiation. The compound 3a with 1,3-dimethyl substitution, showed good yield.

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| 2. | Int. J Pharma Bio Sciences, 1(3) 2010, 1-10. | Sathish NK GP<br>Senthil Kumar | Antihistaminic, Anticholinergic and Sedative Activities of Fexofenadine Analogue |

**Abstract:**

The Fexofenadine analogue 4-(4-(4-(Hydroxy diphenyl methyl)-1-piperidinyl)-1-oxo butyl)-fluorobenzene (analogue I) was screened for anti-histaminic activity by guinea pig tracheal chain, anticholinergic by guinea pig tracheal chain and sedative activity. The antihistamine effect of analogue I was examined by producing cumulative log concentration response curve of histamine acid phosphate induced contraction of tracheal chains 10 minutes after exposing tissue to compound at different dose levels (20 M, 60 M, and 200 M), and histamine 0.001 M. The effect of different concentrations of Analogue I was tested on each trachea, the concentration response curve to acetylcholine was constructed by cumulative addition of acetylcholine in absence and in presence of antagonists. Analogue I was incubated with the tracheal chain preparation for 30 minutes before addition of cumulative concentration of acetylcholine. Spontaneous motor activity was performed using Actophotometer. Results of the treated groups were compared with those of control group at each time interval. SMA measurements started 30 minutes after the administration of the compound and the results were compared with those of control. Analogue I exhibited significant anti-histaminic activity, anticholinergic activity and less sedative effect against various models.

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| 3. | Oriental J Chem.2010, 26(3) 941-9. | Gireesha MK,<br>Srinivasulu N,<br>Sathish NK, Irfan Ali M | Synthesis, Characterization and Pharmacological activity of Novel Thiazolidin-4-one analogues |

**Abstract:**

A new series of 4-oxo-thiazolidines **($3a_1$-$3a_6$)** were prepared by reacting Sulphadiazine with substituted aldehydes in alcohol medium in presence of strong base. The resulting Schiff's base undergoes cyclization with mercapto acetic acid and mercapto succinic acid to yield 4-oxo-thiazolidines **($3b_1$-$3b_6$).** The structures of the final synthesized compounds were confirmed by IR, $^1$H-NMR and MASS spectral technique. The title compounds were screened for their analgesic, anticonvulsant and antibacterial activities

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| 4. | Asian journal of Pharmaceutical and Clinical Research, 2010, 3(4) 80-82. | N.K.Sathish<br>N.M.Raghavendra | *In-vitro* and *In-vivo* Antitumor Activity of 1,3-Diacetoxy Acridones against EhrlichAscites Carcinoma |

**Abstract:**

Several structural classes of compounds were discovered against tumor, but many of the existing antitumor agents exhibit severe side effects. Hence there is a need to identify a novel chemical entity having a broad range of therapeutic activity with fewer side effects. In this direction, several 1,3- diacetoxy acridones [1-15] were screened for their antitumor activity against Ehrlich Ascites Carcinoma (EAC) using *invitro* and *invivo* models. Compound 11 showed highly significant antitumor activity against EAC in comparison with vincristine as standard.

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| 5. | Int. J. Drug Design and Discovery, Vol 1, Issue 4, 2010, 331-335. | N.K.Sathish, NM.Raghavendra, Irfan Aali Mohammed | Anti-tumour Activity of 1,3- Dimethyl Acridones against Ehrlich Ascites Carcinoma |

**Abstract:**

We report here in vitro and in vivo antitumour activity study of a series of 1,3-dimethyl-*N10* substituted acridone derivatives. All the molecules have been designed on the basis of the presence of specific recognition patterns consisting of electron donor, carbons. Chloro groups with precise spatial separation and structural features (lipophilicity,positive charge at neutral pH and presence of aromatic rings*)*. In vitro and in vivo antitumour effects have been demonstrated against EAC cell-lines. Compounds **2,7,8,9,12,13,14** and **15** exhibited good antitumour activity when compared to Vincristine and compound **14** (β-hydroxy ethyl) piperazine derivative with four carbon spacer exhibited good antitumour activity.

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| 6. | Journal of Pharmacy Research, 2010, 3(11) 2674-77. | Rohan Vijay Chavan, N.K.Sathish, Irfan Ali M Ashwinee Kumar Shrestha | Synthesis And Evaluation Of Some New Fexofenadine Analogues For Their Antihistaminic Activity |

**Abstract:**

A series of new fexofenadine analogues were synthesized by Friedel Craft acylation, nucleophilic substitution and reduction. All the synthesized molecules were screened for their antihistaminic activity against *in-vitro* method on goat trachea. The actions of synthesized compounds were done on isolated goat tracheal chain and were compared with standard Fexofenadine. The contractions of the selected doses were recorded in presence of varying concentration of different analogues was calculated. The % inhibition for Goat tracheal tissue is calculated in the response caused by histamine in the absence of drug. The analogue Fd, Ff and Fg exhibited good antihistaminic activity and remaining compounds showed better antihistaminic activity when compared to standard Fexofenadine.

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| 7. | Indian J of Het Chem. Oct-Dec 2010 | G.N.V.SunilKumar N.K. Sathish | Synthesis, Characterization and Antibacterial activity of 3-(2- (substituted phenyl)-1,3,4-oxadiazole) propyl thio -2, 3-dihydro- 1, 3-benzoxazol-2-ones " |

**Abstract:**

**:** 3-(2-(Substituted phenyl)-1, 3, 4-oxadiazole) propyl thio -2, 3-dihydro-1, 3-benzoxazol-2-ones **($B_{3a-i}$)** were synthesized by reacting the catalytic amount of 5-(substituted phenyl)-1, 3, 4-oxadiazole-2-thiol **($B_{2a-i}$)** and 5-chloro-3-(3-chloropropyl)-2, 3-dihydro-1, 3-benzoxazol-2-one **($B_{1b}$)** using TBAI and Potassium carbonate in acetonitrile. The synthesized compounds were characterized by IR, $^{1}$H-NMR and Mass spectral techniques and evaluated for their antibacterial activity. The compounds **$B_{3e}$, $B_{3i}$** and **$B_{3c}$** exhibited potent anti-bacterial activity when compared to Streptomycin.

# DEPARTMENT OF PHARMACEUTICAL CHEMISTRY

| Sl. No. | Name of Journal, Volume No. Issue and Period | Author/s | Title of the article |
|---|---|---|---|
| 1. | J Ethnopharmacol, 130 (2010) 103–106 | V. Jaishre, Shrishailappa Badami | Antioxidant and hepatoprotective effect of swertiamarin from *Enicostemma axillare* against d-galactosamine induced acute liver damage in rats |

**Abstract:**

**Ethnopharmacological relevance:** The whole plant of Enicostemma axillare Raynal (Family: Gentianaceae) is used in variety of diseases in traditional Indian system of medicine including hepatic ailments. **Aim of the study:** Swertiamarin isolated from Enicostemma axillare Raynal was evaluated for antioxidant and hepatoprotective activity.

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| 2. | Indian J. Exp. Biol. 48, 2010, 896- 904. | Jaishree V, Shrishailappa Badami, Praveen Thaggikuppe Krishnamurthy | Antioxidant and hepatoprotective effect of the ethyl acetate extract of *Enicostemma axillare* (Lam). Raynal against CCl 4 - induced liver injury in rats |

**Abstract:**

*Enicostemma axillare* is used in Indian traditional medicine as a liver tonic. Its ethyl acetate extract has shown potent *in vitro* antioxidant activity and found to contain 7.26% of a bitter secoiridoid glycoside, swertiamarin. Hence, in the present study the ethyl acetate extract was screened for hepatoprotective and antioxidant properties against $CCl_4$ induced hepatic injury in rats. The hepatoprotection was assessed in terms of reduction in histological damage and changes in serum enzymes and metabolites. The pretreatment with the extract at 100 and 200 mg/kg body weight doses given orally for eight days prior to $CCl_4$ caused significant restoration of altered biochemical changes due to $CCl_4$ towards the normal in serum, liver and kidney. The extract treatment at 200 mg/kg body weight was found to be more potent than the standard silymarin at 100 mg/kg body weight in reversing most of the biochemical parameters. Histopathological studies complemented the results of biochemical estimations in providing a proof of hepatoprotective and antioxidant actions of the extract. The study provides a support to the ethnomedical use of *E. axillare* in India.

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| 3. | Nat. Prod. Radiance, 2010, 1(2), 168-173. | VK Jinesh, V. Jaishree, S. Badami, W. Shyam | Comparative evaluation of antioxidant properties edible and nonedible leaves of *Anethum graveolens* Linn |

**Abstract:**

The study was conducted to compare *in vitro* antioxidant activities of ethanol extract of edible and non edible leaves of *Anethum gravaleons* Linn. The antioxidant activity was evaluated using nine different standard methods. The green leaves extract exhibited high percentage of inhibition in most of the methods when compared to the yellow leaves extract. The HPTLC of the yellow leaves extract exhibited six compounds instead of four observed in green leaves extract The total phenol content of the yellow leaves extract was found to be high, indicating there was no relationship between activity and total phenol content. The study supports the traditional use of green leaves as vegetable and food flavoring agent.

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| 4. | Int. J. Pharm. Sci. Bio . Volume 1(1), 2010; 47-52. | Irfan a. Mohammed , E. V. S Subrahmanyam, A.R.Hareesh, Rajesh Kowti | Synthesis, antimicrobial studies of some schiff '' s bases and Novel 5-aryl((8-quinolinoxy methyl)- 1,3,4-oxadiazole Derivatives. |

**Abstract:**

In present study we developed an efficient method for preparing 1, 3, 4-oxadiazoles, commencing from hydrazides and substituted aldehydes. The reaction of hydrazides with substituted aldehydes in the presence of ethanol to yield schiffs bases and further treating with Chloramine-T to produce 5- aryl (8-quinolinoxymethyl)-1, 3, 4-oxadiazoles. The compounds thus obtained were identified by spectral data and screened for their antimicrobial activity.

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| 5. | Ind. J. Heterocyclic. Chem. 2010, vol-20, 05-08. | Irfan A. Mohammed, Subrahmanyam E.V.S | Synthesis, Characterization and Antimicrobial studies of some substituted 8-([1,2,4]triazolo[3,4-b][1,3,4]thiadiazol-3-ylmethoxy) quinoline |

**Abstract:**

A variety of novel 8-([1,2,4]triazolo[3,4-*b*][1,3,4]thiadiazol-3-ylmethoxy)quinolines have been synthesized by reacting 5-[(quinolin-8-yloxy) methyl]-4*H*-1, 2, 4-triazole-3-thiol with a variety of aromatic acids The starting material aroylhydrazide was synthesized from 1-(quinolin-8-yloxy)butan-2-one. The title compounds obtained were identified by spectral data and investigated for antimicrobial activities.

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| 6. | Pharmanest Vol.1 (1) Sep-Oct- 2010, 38-42. | Irfan A. Mohammed , E. V. S. Subrahmanyam, A.R. Hareesh, Rajesh Kowti | Synthesis and Antimicrobial Activity of Some Novel 1-[(quinolin-8yloxy)-Methyl Urea |

**Abstract:**

An efficient method for preparing 1-[(quinolin-8yloxy)-methyl urea, commencing from hydrazides and substituted aromatic amines, has been developed. The reaction of hydrazides with aceticacid and sodiumnitrite in the presence of dioxane to yield (Quinolin-8yloxy)-acetylazide and further treating with amines to produce the title compounds 1-[(quinolin-8yloxy)-methyl urea (4a-j). The compounds thus obtained were identified by spectral data and have been screened for their antimicrobial activity.

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| 7. | Research Journal of Pharmaceutical,Biological and Chemical Sciences, July – September 2010 Volume 1 Issue 3 Page No. 691-698. | Rajesh Kowti, Harsha R, Mohd. Gulzar Ahmed, Hareesh AR, Thammanna Gowda SS, Dinesha R, Irfan Ali M Satish Kumar BP | Antimicrobial activity of ethanol extract of leaf and flower of *Spathodea campanulata* P. Beauv |

**Abstract:**

The ethanol extract of leaf and flower of *Spathodea campanulata* was investigated for antimicrobial activity at 10 mg/ml concentrations by using Kirby-Bauer disc diffusion method against gram positive and gram negative organisms like *Escherichia coli, Klebsiella pneumonia, Proteus vulgaris, Pseudomonas sps, Salmonella typhimurium, Bacillus subtilis, Staphylococcus aureus, Vibrio cholera*. After incubation for 24 hrs, the zone of inhibition was compared with standard antibiotics genatmycin and streptomycin (10 g/ disc). From the dose dependent study it was observed that the ethanol flower extract was more potent than leaf extract. Flavonoids and tannins present in the ethanol extract may be responsible for the antimicrobial activity. Keywords: *Spathodea Campanulata,* antimicrobial activity, disc diffusion method, minimum inhibitory concentration (MIC)

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| 8. | Journal of Pharmacy Research 2010, 3(8),1951- 1954. | Rajesh kowti, Satish kumar B.P, Harsha. R, Dinesha. R, Irfan A mohammed, Thammanna Gowda SS Hareesh A.R. | *In vitro* antioxidant activity of leaves of *Mentha Arvensis* linn. |

**Abstract:**

The aim of the study is to investigate the antioxidant activity of ethanol extract of leaves of *Mentha arvensis* through TBARS (Thiobarbituric acid reactivesubstance), hydroxyl radical scavenging assay, DPPH (1,1-diphenyl-1-picryl hydrazyl radical) radical scavenging assay, nitric oxide radical scavenging assay, superoxide radical scavenging assay and phosphomolybdonum method. Ethanol extract of leaves of *Mentha arvensis* showed significant dose dependent antioxidant activity, with a direct relationship between activity and concentration of extract. The extract showed an important free radical scavenging activity towards the lipid peroxidation inhibition, hydroxyl radical, DPPH, nitric oxide, superoxide radicals, with IC50 values of 64,52, 46, 36 and 38 g/mL respectively. Total antioxidant capacity was found to be 50 and 100 g/mL of *Mentha arvensis* extract and was equivalent to 24.72 and 68.53 g/mL of a-Tocopherol. At 100 g/mL lipid peroxidation inhibition, hydroxyl radical scavenging assay, DPPH radical scavenging assay, nitric oxide radical scavenging assay and superoxide radical scavenging assay showed maximum inhibition 76, 85, 82, 86 and 74% respectively. The extract showed significant activity in all the assay when compared to the standard antioxidants. These results clearly indicate that leaves of *Mentha arvensis* is effective in scavenging free radicals and has potential to be a powerful antioxidant.

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| 9. | Research Journal Of Pharmaceutical, Biological and Chemical Sciences July – September 2010 Volume 1 Issue 3 Page No. 593-599 | Mohd. Gulzar Ahmed, Kiran Kumar GP, Vedamurthy Joshi Irfan Ali Mohammed | Comparative study of dissolution behavior on solid dispersions and inclusion complexes of rofecoxib. |

**Abstract:**

The drug dissolution studies are essential for the assessment of drug absorption and many pharmaceutical agents the poor aqueous solubility resulting in poor absorption. The present study is aimed at improving the dissolution of poorly water-soluble NSAID, rofecoxib. The physical mixtures and solid dispersions were prepared in different proportions using hydrophilic carriers like polyvinylpyrrolidone (PVP) and polyvinylpyrrolidonevinyl alcohol (PVPVA). Inclusion complexes of -cyclodextrin (CD) were also prepared in 1:1 and 1:2 molar ratios to study the influence on the solubility and dissolution of rofecoxib. The prepared formulations were characterized for percentage yield, drug content, average particle size, hygroscopic studies and IR spectral studies. The dissolution rate studies were performed in phosphate buffer, pH 7.4 and the dissolution were found to be in the following order: -CD > solid dispersion > physical mixture > pure drug. The enhancement in solubility of rofecoxib helps in improving its bioavailability and also to reduce its dose.

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| 10. | Int. J. Ph. Sci. May-June, 2010; 2(2), 508-514. | Hareesh A.R, Rajesh Kowti, Harsha R, Mohd. Gulzar Ahmed, Satish Kumar BP, Dinesha R, Irfan Ali Mohammed, Thammanna Gowda SS | *In-vitro* Antioxidant and Free Radicals Scavenging Activity of Flower of *Spathodea campanulata* P. Beauv, |

**Abstract:**

The aim of the study is to investigate the antioxidant activity of ethanol extract of flowers of *Spathodea campanulata* through TBARS,hydroxyl radical, DPPH radical scavenging assay. Ethanol extract of flowers of *Spathodea campanulata* showed significant dose

dependent antioxidant activity, with a direct relationship between activity and concentration of extract. The extract showed an important free radical scavenging activity towards the lipid peroxidation inhibition, hydroxyl radical, DPPH radicals, with IC50 values of 201,200 and 225 $\mu$g/mL respectively. At 500$\mu$g/mL lipid peroxidation inhibition, hydroxyl radical, DPPH radical scavenging assay showed maximum inhibition 82, 84 and 68% respectively. The extract showed significant activity in the entire assay when compared to the standard antioxidants. These results clearly indicate that the ethanol extract of *Spathodea campanulata* flowers is a potential antioxidant and free radicals scavenging activity.

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| 11. | Int.J. Drug Design and Discovery, Vol 1, Issue 4, 2010, 331-335. | N.K. Sathish, N.M. Raghavendra, Irfan ali Mohammed | Anti-tumour Activity of 1,3- Dimethyl Acridones against Ehrlich Ascites Carcinoma |

**Abstract:**

We report here in vitro and in vivo antitumour activity study of a series of 1,3-dimethyl-*N10* substituted acridone derivatives. All the molecules have been designed on the basis of the presence of specific recognition patterns consisting of electron donor, carbons. Chloro groups with precise spatial separation and structural features (lipophilicity, positive charge at neutral pH and presence of aromatic rings*)*. In vitro and in vivo antitumour effects have been demonstrated against EAC cell-lines. Compounds **2,7,8,9,12,13,14** and **15** exhibited good antitumour activity when compared to Vincristine and compound **14** (β-hydroxy ethyl) piperazine derivative with four carbon spacer exhibited good antitumour activity.

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| 12. | Journal of Pharmacy Research, 2010, 3(11) 2674-77 | Rohan Vijay chavan, N.K. Sathish, Irfan Aali M, Ashwinee Kumar Shrestha | Synthesis And Evaluation Of Some New Fexofenadine Analogues For Their Antihistaminic Activity |

**Abstract:**

A series of new fexofenadine analogues were synthesized by Friedel Craft acylation, nucleophilic substitution and reduction. All the synthesized molecules were screened for their antihistaminic activity against *in-vitro* method on goat trachea. The actions of synthesized compounds were done on isolated goat tracheal chain and were compared with standard Fexofenadine. The contractions of the selected doses were recorded in presence of varying concentration of different analogues was calculated. The % inhibition for Goat tracheal tissue is calculated in the response caused by histamine in the absence of drug. The analogue **Fd, Ff** and **Fg** exhibited good antihistaminic activity and remaining compounds showed better antihistaminic activity when compared to standard Fexofenadine.

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| 13. | Oriental J Chem.2010, 26(3) 941-9. | Gireesh MK, Irfan Ali M, Srinivasulu N, Sathish NK, | Synthesis, Characterization and Pharmacological activity of Novel Thiazolidin-4-one analogues. |

**Abstract:**

A new series of 4-oxo-thiazolidines **($3a_1$-$3a_6$)** were prepared by reacting Sulphadiazine with substituted aldehydes in alcohol medium in presence of strong base. The resulted Schiff's base undergoes cyclization with mercapto acetic acid and mercapto succinic acid to yield 4-oxo-thiazolidines **($3b_1$-$3b_6$).** The structures of the final synthesized compounds were confirmed by IR, $^1$H-NMR and MASS spectral technique. The title compounds were screened for their analgesic, anticonvulsant and antibacterial activities.

## GOVERNMENT COLLEGE OF PHARMACY

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## DEPARTMENT OF PHARMACOGNOSY


| Sl. No. | Name of Journal, Volume No. Issue and Period | Author/s | Title of the article |
|---|---|---|---|
| 1. | Int J of Pharm Bio Arch. 2010; 1(2): 183-6. | Rajendra CE, Shashidhara S, Hanumantharaju N, Mehaboob Ali Nadaf, Mohan CG. | HPLC estimation of *Withaferin A* and *Boswellic* acid in formulated gels |


**Abstract:**

*Withania somnifera and Boswelia serrata* are important drugs of many ayurvedic preparations. The interactions of the ingredients in the process of formulations are unimaginable. Hence, the attempt made in order to assess the concentration of Boswellic acid and Withaferin A in the formulation. 2% W/W each of Methanolic Extracts of *Withania somnifera* and *Boswellia serrata* were prepared, incorporated in gel formulations using different polymers and estimated the content of Withaferin A & Boswellic acid in the formulations using HPLC method. The results shown 95-105% of expected Withaferin A and 96-104% of expected Boswellic acid in formulations.


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| 2. | J Cur Pharm Res. 2010; 2(1): 36-9. | Altaf ahmed, Shashidhara S, Rajasekharan PE, Hareesh Kumar V, Honnesh NH. | *Invitro* regeneration of *Acorus calamus* – An important medicinal plant. |


**Abstract:**

The present study is an effort to identify suitable hormonal combinations for *invitro* propagation of *Acorus calamus* (L.). Inoculation of rhizome explants on MS media containing different combination and concentrations of auxins produces multiple shoots. Inoculation on MS media containing IBA alone produces number of roots. Plantlets produced using rootlets were acclimatized and transplanted. About 90% of the *in vitro* Micropropagated plants were healthy and useful for propagation. *In vitro* preservation of germplasm is also safe method to protect species & reducing the risk of natural vagaries. Further estimation of secondary constituents from natural and *in vitro* plants and antimicrobial activity of both natural and invitro plants will be carried out in future.


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| 3. | Int J of Pharm and Pharmaceu Sci. 2010; 2(4):72-5. | Hanumantharaju N, Shashidhara S, Rajashekaran PE, Rajendra CE. | Comparative evaluation of antimicrobial and antioxidant activities of *Kaempferia Galanga* for Natural and Micropropagated Plant. |


**Abstract:**

Shoots and roots were induced from axillary buds of *Kaempferia galanga* when cultured on Murashige and Skoog (MS) medium supplemented with NAA + BAP (0.1mg + 1.0 mg/l). Liquid detergent (2%) + Alcohol (70%) + Mercuric chloride (0.1%) used for surface sterilization of explants.Rhizomes were developed after four months of transferring in to earthen pots. The methanolic extracts of both micropropagated plant rhizome and natural plant rhizome were screened for antimicrobial activities against two gram -ve and two gram +ve pathogenic bacteria i.e. *Escherichia coli, Salmonella typhi, Bacillus subtilis* and *Staphylococcus aureus*. The methanolic extract of micropropagated plant was exhibited significant inhibition activity compared to natural plant extract. The antioxidant activity of methanolic extract of the rhizomes of micropropagated plant has not showed significant activity than natural plant rhizome extract.

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| 4. | Pharmacology Online 2010; 2: 121-32. | Vivek Kumar R, Satish Kumar K, Shashidhara S, Anitha S. | *Tephrosia Purpurea* (Sarapunkha): Review. |

**Abstract:**

*Tephrosia purpurea*, a commonly used herb in Ayurvedic medicine. This review article is presented to compile all the updated information on its pharmacological activities,which were performed by widely different methods. Studies indicate Sarapunkha possesses anti hyperglycemic, antilipidperoxidative ,wound healing, immuno modulatory, relative toxicity against *corcyra cephalonica,* anti carcinogenic, antibiotic,anti-*Helicobacterpylori*,cancer chemopreventive, hepatoprotective, antioxidant antilithiatic, antimicrobial, antileishmanial ,antituberculosis activity.These results are very encouraging and indicate this herb should be studied more extensively to confirm these results and reveal other potential therapeutic effects.

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| 5. | Pharma science monitor 2010; 1 (3): 711-9. | Vivek Kumar R, Satish Kumar, Shashidhara S, Chandrashekhar MS. | Preliminary Pharmacognostic Evaluation and Phytochemical Studies on Leaf of *Asystasia Dalzelliana* (Neelkanth). |

**Abstract:**

The leaves of *Asystasia dalzelliana* (Acanthaceae) are reported to have great medicinal value in folk system of medicine. However, very limited work has been carried out on the drugs used in folk system toward documenting its ethno medicinal uses and establishing its phytochemical and pharmacognostic fingerprints. Studies were therefore carried out to determine the phytochemical and pharmacognostic profile of *Asystasia dalzelliana*. Pharmacognostic evaluation including examinations of morphological and microscopic characters, determination of leaf constant, moisture content, ash value, powder analysis, and extractive values. The phytochemical analysis of the various extract of powdered leaf revealed the presence of alkaloids, tannins, steroids, terpenes and flavonoids.

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| 6. | Int J of Biotec and Bioeng Res. 2010; 1 (2): 131–7. | Hanumantharaju N, Shashidhara S, Rajashekharan PE, Rajendra CE. | Evaluation of Ethyl-p-methoxy Cinnamate in Natural and in vitro Regenerated Plant of *Kaempferia galanga* by HPTLC Method. |

**Abstract:**

*Kaempferia galanga* belonging to Family Zingiberaceae is an acaulescent perennial species distributed in the tropics and subtropics of Asia and Africa, is a rare Indian medicinal herb, hence tissue culture method was developed for multiplication of Kaempferia galanga using axillary bud as explant. The sterilized axillary buds were inoculated on MS medium with different concentration of growth regulators such as NAA, BAP, BA and Kinetin. Maximum number of shoots and roots were produced with in 45 days on MS (Murashige and Skoog's) media supplemented with NAA + BAP. The rhizomes were developed after four months of transferring into the earthen pots. The HPTLC analysis of In vitro regenerated rhizome and natural rhizome sextracts has shown that ethyl-p-methoxy cinnamate as major component and the amount was significantly higher in in vitro regenerated plant than the natural plant.

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| 7. | Biomed 2010; 5(2):74-9. | Hareesh Kumar V, Shashidhara S, Rajashekaran PE, Altaf Ahmed. | Micropropogation of *Rauwolfia sepentina* Linn. A Potent endangered medicinal plant. |

**Abstract:**

*Rauwolfia serpentina* is an important medicinal plant, known to Indian communities from past many centuries. The plant has threatened

with extinction due to various reasons like low germination rate of seeds and over exploitation by local people. Due to the prevailing reasons there is a huge need for in vitro propogation of *Rauwolfia serpentina*. In our study various explants of Rauwolfia were inoculated in MS medium supplemented with different combination and concentrations of auxins and cytokininis. Nodal explants showed a good regeneration rate and media consisting of 1.5mg/LBA with 0.2mg/LNAA was found to be suitable for shoot induction. Half strength MS media with 0.5mg/LNAA and quarter strength MS media with 5.7$\mu$MIBA was found to be suitable for root regeneration.

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| 8. | Int J Pharm Pharm Sci.2010;2(4):879. | Hareesh Kumar V, Shashidhara S, Anitha S, Rajesh MS. | Quantitative Detection Of Reserpine in *Rauwolfia Serpentina* Using HPTLC |

**Abstract:**

*Rauwolfia serpentina* is medicinally famous herb in Ayurvedic and western system of medicine. Reserpine is an indole alkaloid and is important constituent of Rauwolfiawhich is reported to posses anti hypertensive and tranquilizing activity. In the present study High Performance Thin Layer Chromatography has been developed for detection, monitoring and quantification of Reserpine in Rauwolfia and its preparations, which was found to be rapid and accurate. The method proposed was precise, sensitive, specific and reproduciblewith an average recovery of 98.78%. The limit of quantification was observed to be 40ng, and C.V% $<$2.3%.

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| 9. | Int J of Pharma and Bio Sci. 2010;1(4): 429-34 | Hareesh kumar V, Nirmala P, Rajendra CE Shashidhara S | Reserpine content of *Rauwolfia serpentina* in response to geographical variation. |

**Abstract:**

Important requirement in the evaluation of herbal drug include the estimation of active constituent. Different factors like climate, altitude, rainfall and other conditions responsible for growth of plants may affect the content of active constituents. Collection of drug from different geographical sources can give useful conditions required for the production of maximum amount of secondary cell constituents. Rauwolfia Samples were collected from four different parts of southern India. HPLC chromatogram was developed for standard reserpine. Different samples were extracted using methanol and extracts were subjected to HPLC analysis to find out the content of Reserpine for preliminary information about the conditions that may influence on production of active constituents. Significant variation in the content of reserpine has been recorded.

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| 10. | Int.jContemporar Res andreview 2010;1(1) | Dattatraya BG, Shashidhara S, Deepak M, Rajendra CE Hanumantharaju N, Mehaboob AN. | Anti micriobial activities of the pet ether, chloroform, methanol andwater extracts of *Trigonella foenum- graecum* Linn seeds. |

**Abstract:**

Petroleum ether, chloroform, methanol and aqueous extracts of *Trigonella foenum-graecum* L. seeds were evaluated for antibacterial activity against *Escherichia coli* (ATCC 10536)*, Salmonella typhi* (ATCC 14028)*, Sta-phylococcus aureus* (ATCC 29737)*, Bacillus subtilis* (ATCC 6633) and antifungal activities against *Candida albicans* and *Aspergillus niger* were compared with positive control (Ciprofloxacin and Amoxicillin) for bacteria and (Ketoconazole and Fluconazole) for Fungi. Petroleum ether extract and methanolic extract at 1000 g/ml were found to be more significant compared to other extracts against both gram positive and gram negative bacteria and methanolic extract has shown significant inhibition activity against fungal growth.

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| 11. | Biomed 2010; 5(2): 120-4. | Anitha S, Suresh GS Manjunath PM | Wound healing activity of *Acalypha indica*L. |

**Abstract:**

The plant *Acalypha indica* belonging to the family Euphorbiaceae contains flavonoids as the chief constituent. In the present study an attempt was made to isolate flavonoids and evaluate wound healing activity of ethanolic extract of *Acalypha indica*. The defatted material was extracted twice with ethanol and the extract was subjected to acid hydrolysis by treating with 25 ml alcohol and 4% hydrochloric acid and refluxing for 2 hrs to separate the aglycone. The extract was chromatographed over silica gel using ethyl acetate: benzene (1, mixture yielded a yellow coloured compound having melting point 276$^0$C, on thin layer chromatography using methylene chloride: ethyl acetate (6:1), the compound showed single spot having the Rf value of 0.33. The ethanolic extract of plant obtained was formulated into ointment and used for wound healing activity by excision wound model. The percentage of wound contraction on 16$^{th}$ day in control group was 82.2 $\pm$0.15 and it was significantly increased in test group containing 5% and 10% ethanolic extract of A indica to 89.8$\pm$1.25 and 91.8$\pm$1.26. In the standard group containing framycetin it was observed that 92.5$\pm$1.25. This revealed the wound healing activity of ethanolic extract of *Acalypha indica.*

## DEPARTMENT OF PHARMACEUTICS

| Sl. No. | Name of Journal, Volume No. Issue and Period | Author/s | Title of the article |
|---|---|---|---|
| 1. | Ind drugs 2010; 47 (9): 47 – 54. | Swamy NGN, Rupa V, Abbas Z, Dosankappa S | Formulation and Evaluation of Nanosuspension for Enhancing the Dissolution of Poorly Soluble Mebendazole. |

**Abstract:**

Mebendazole belongs to a group of benzimidazoles, which is a widely used drug in the treatment of intestinal worm infestations. The drug is practically insoluble in water and has poor wettability. Many poor water soluble and poorly bioavailable drugs earlier called as “brick dust” candidates pose difficulty to develop drug formulation using conventional formulation techniques and were frequently abandoned in early stages of discovery. Hence, in the present study, it was attempted to formulate mebendazole in the form of nanosuspension. nanosuspension of mebendazole was achieved by modification of Quasi Emulsion Solvent Diffusion technique. Control of the preparation variables (drug-polymer ratio, stirring speed, duration of agitation, different surfactants with varied concentration) allowed formation of nanosuspension with diameter ranging between 750nm and 1020nm. The nanosuspensions were evaluated for particle size, drug entrapment efficiency, zeta potential measurement and subjected to scanning electron microscopy and *in-vitro* dissolution profiles. The *In-vitro* dissolution profile of the prepared nanosuspension showed that the rate of dissolution in case of nanosuspension was faster than the pure drug and micronized drug. The dissolution data followed matrix kinetics and the drug release followed fickian transport. The nanosuspension was checked for particle size, drug content, and Invitro dissolution profile after 6 months of stability study. Nanosuspensions were found to be stable for period of 6 months at 40$^0$ C $\pm$ 2$^0$ C / 75%RH $\pm$ 5% RH. Hence it was concluded that mebendazole could be formulated into a nanosuspension with improved dissolution characteristics and good stability.

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| 2. | Indian J. Pharm. Educ. Res. 2010; 44(4):310-4. | Swamy NGN, Mazhar Pasha, Zaheer Abbas. | Formulation and Evaluation of Diclofenac Sodium gels Using Sodium carboxymethyl hydroxypropyl guar and hydroxypropyl msethylcellulose. |

**Abstract:**

**:** In this investigation, Diclofenac sodium gels were formulated employing Sodium carboxymethyl hydroxypropyl guar and Hydroxypropyl methylcellulose as gelling agents. Hydroxypropyl methylcellulose (K4M) was employed at 5 % w/w strength whereas, Sodium

carboxymethyl hydroxypropyl guar formed a gel at 2.5 % w/w strength, gels were subjected for various evaluation tests such as pH measurement, assay, stability study, rheological evaluation, and invitro release studies across hairless albino rat skin. Gels formulated using Sodium carboxymethyl hydroxypropyl guar displayed a pH value of 7.48, whereas Hydroxypropyl methylcellulose gels revealed a pH value of 7.26. Stability studies revealed good physical stability and assay values did not show much variation from the initial drug content in both the cases with formulations stored at 25 C, 60% RH and 40 C, 70% RH for six months. Hydroxypropyl methylcellulose at 5% w/w strength revealed shear-thinning property, whereas Sodium carboxymethyl hydroxypropyl guar at 2.5 % w/w strength revealed both pseudoplastic and thixotropic property. The rheological data were fitted into Martin and Co'-worker equation to obtain a linear relationship and from the linear curve fittings, the 'N'- values; the possible flow indices for pseudoplasticity were arrived at. A 'N' value of 4.65 was obtained for Sodium carboxymethyl hydroxypropyl guar gels in contrast to a 'N' value of 1.52 in case of Hydroxypropyl methylcellulose gels. When subjected to In-vitro release studies across hairless albino rat skin, Sodium carboxymethyl hydroxypropyl guar based gels revealed a % cumulative drug release of 25.66 in contrast to a % cumulative drug release of 20.80 in case of Hydroxypropyl methylcellulose based gels at the end of 6 hours. From the above observations, Sodium carboxymethyl hydroxypropyl guar seems to be a promising pharmaceutical adjuvant in the formulation of Diclofenac sodium gels.

## DEPARTMENT OF PHARMACOLOGY

| Sl. No. | Name of Journal, Volume No. Issue and Period | Author/s | Title of the article |
|---|---|---|---|
| 1. | Doi:10.3814//62048: 2008:1- 6. | Satyanarayana S, Sultanpure CM, Gowda PO, Kumar EK | Drug-Drug interaction between pravastatin and gliclazide in animal models. |

**Abstract:**

The present study is planned to evaluate the safety of gliclazide (antidiabetic) therapy in the presence of pravastatin (antihyperlipidemic) in rats and rabbits. Studies in normal and alloxan-induced diabetic rats were conducted with oral doses of gliclazide, pravastatin, and their combination. Similarly, studies in normal rabbits were conducted with oral doses of gliclazide, pravastatin, and their combination with adequate washout periods in between the treatments. Blood samples were collected from rats and rabbits at different time intervals and were analyzed for blood serum gliclazide levels. Gliclazide produced hypoglycaemic/antihyperglycaemic activity in normal and diabetic rats with peak activity after 2 hours and 8 hours and hypoglycaemic activity in normal rabbits with peak activity after 3 hours. Pravastatin alone produced minor reduction in blood glucose levels in normal rats/diabetic rats/normal rabbits. Pravastatin increased the hypoglycaemic effect of gliclazide in normal rats/diabetic rats/normal rabbits when administered together. The serum insulin levels were increased with pravastatin treatment in rabbits. The serum gliclazide levels and pharmacokinetic parameters of gliclazide were altered significantly in presence of pravastatin in rabbits. The interaction observed appears to be pharmacokinetic interaction at metabolic and excretion levels.

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| 2. | J of Young Pharmacist 2010;2(2):152-5. | Sultanpur CM, Sathyanaryana S. | Drug-Drug interaction between paravastatin and gemfibrozil with gliclazide in rats. |

**Abstract:**

Diabetes mellitus is a condition of increased blood glucose level in the body. Antihyperlipidemic drugs like statins and fibrates are widely used for prophylactic treatment in dyslipideamia and atherosclerosis. Diabetic dislipidemia exists with increased triglycerides, low HDL and high LDL levels. Hence, with oral hypoglycemic drugs, the addition of a lipid-lowering drug is necessary for controlling dislipidemia. In such a situation, there may be chances of drug-drug interactions between antidiabetic and antihyperlipidemic drugs. The present study is planned to evaluate the safety of gliclazide (antidiabetic) in the presence of pravastatin and gemfibrozil (antihyperlpidemic) in rats. Studies in normal and alloxan-induced diabetic rats were conducted with oral doses of gliclazide and their combination with pravastatin and gemfibrozil, with an adequate washout period in between the treatments. Blood samples were collected in rats by retroorbital puncture at 0, 1, 2, 3, 4, 6, 8, 10 and 12 h. All the blood samples were analyzed for glucose by GOD -POD. Gliclazide (½ TD) produced hypoglycemic

activity in normal and diabetic rats, with peak activity at 2 and 8 h. Pravastatin (TD) + gemfibrozil (TD) combination treatment increased the hypoglycemic effect of gliclazide in normal rats or diabetic rats when administered together. The interaction observed due to inhibition of both the enzymes (CYP 450 2C9 and CYP 450 3A4) responsible for the metabolism of gliclazide showed increased half-life, which was seen in the present study. Because concomitant administration of gliclazide with provastatin and gemfibrozil in diabetes is associated with atherosclerosis, it should be contraindicated or used with caution.

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| 3. | Pharmacol online 2010; 1:816-23. | Chandrashekar MS, Satish K | Comprehensive Pharmacological review on Mimosa pudica- A Review. |

**Abstract:**

*Mimosa pudica* is commonly known as touch me not plant. It is a very important biologically and pharmacologically active plant. It has been used from ancient to the modern for many purposes. It contains most active principles like terpenoids, flavonoids, glycosides, alkaloids (mimosine), quinines, phenols, tannins, saponins, coumarin, sterols, steroids, sapogenin and flavonoids. This study indicates to highlight the role of few major constituents of plant, which have varied pharmacological actions and are be used as templates for designing new drugs. Mimosa pudica is one of those medicinal plants which have been used in the tradition pharmacopoeias for its various actions against variety of systemic and non systemic ailments.

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| 4. | Int J of Pharmaceu Sci Rev and Res. 2010;3 (2): 119-22. | Chandrashekar MS, Deepa K, Vijay KS. | Comprehensive review on HBA1c in diagnosis of Diabetes mellitus. |

**Abstract:**

The prevalence of diabetes in population and type 2 diabetes is particular, has reached epidemic proportions worldwide. The HbA1c test is currently one of the best ways to diagnose diabetes. Measurement of glycated hemoglobin is recommended for both (a) checking blood sugar control in people who might be pre-diabetic and (b) monitoring blood sugar control in patients with more elevated levels, termed diabetes mellitus. Measurement of HbA1c, is an estimation of long-term average glycemia, which assists diabetics as well as their physicians by providing treatment goals to reduce the risks associated with the development and progression of chronic complications of diabetes. Studies have shown that A1c is an index of average blood glucose over the preceding few weeks to months. HbA1c truly does not reflect glycemic control as claimed. There are many factors that cause variation in A1c results. Factors affectingmeasurement of HbA1c like erythrocyte turnover rate, alcoholism, use of certain drugs in treatment of malignancies, human immunodeficiency virus or hepatitis C virus infection are known provide false results. Hb variants are formed by single base pair mutations in the globin genes of haemoglobin, resulting in an amino acid substitution. There are over 700 silent variants of which most of them interfere with HbA1c. The measurement of HbA1c is usually by HPLC method, but interference of these Hb variants is known to provide false results, hence it is recommended to modify the method to get accurate results.

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| 5. | Res J of Pharmaceu Bio and Chem Sci. 2010;3: 320-9. | Chandrashekar MS | Influence of fenofibrate on pharmacodynamics and pharmacokinetics of gliclazide in rats and rabbits |

**Abstract:**

Atherosclerosis and dyslipidemia are associated with chronic diabetes, since diabetes disorder is supplementation with antihyperlipidemic drugs (fabric acid derivatives) may improve the condition. The purpose of this study is to know the effect of oral administration of fenofibrate on blood glucose & its influence on gliclazide induced hypoglycaemia in normal and alloxan induced diabetic rats. Studies were conducted in normal rats, alloxan induced rats and normal rabbits with oral doses of gliclazide (1/2 TD), fenofibrate (TD) and their combinations with adequate washout periods in between treatments. Blood samples were collected in rats from retro orbital puncture at 0, 1, 2, 3, 4, 6, 8, 10 and 12 h and by marginal ear vein puncture in rabbits at 0, 1, 2, 3, 4, 6, 8, 12, 18 and 24 h. All the blood samples analysed for glucose by GOD/POD method. The blood samples of rabbits were analysed by HPLC for gliclazide. Gliclazide (½ TD)

produced hypoglycaemic activity in normal, diabetic rats and normal rabbits. Fenofibrate (TD) alone had no hypoglycaemia in normal rats / diabetic rats / normal rabbits. It increased the hypoglycaemic effect of gliclazide when administered together. The serum gliclazide levels and pharmacokinetic parameters of gliclazide were altered significantly.

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| 6. | J of Natural Rem. 2009;9(2):235-41. | Rajesh MS, Harish MS, Sathyaprakash RJ, Raghuram shetty A, Shivananda. | Antihyperglycemic activity of the various extracts of *Costus speciosus.* |

**Abstract:**

Costus speciosus is known to possess antidiabetic properties and used in local health traditions in India but the validation of drug is not done. The activity of variuoyus fractions of drug is alos not reported. Inv view of its immense potential in andiabetic properties, systematic study was conducted with an objective to evaluarte the anti-hyperglycemic activity of petroleum either, chloroform, methanolic and aqueous ectracts of C. Seciosus rhixomes on over night fasted, sterptozotocin (STZ) induced diabetic rats. Blood glucose level (BGL) monitored at 0,30,60,120 and 240 minures suggested that all extracts of C. Speciosus resulted in reduction of BGL significantly except per either extract. Aqueous extract and methanolic extracts reduced. Similar studies conducted with oral glucose tolerance test (OGTT) confirmed the above findings suggesting that adueous extract and methanolic extracts of C.speciosus were highly effective in bringing down the BGL which was on par with the glibenclamide. Results from multiple dose studies wherein the drug was administered for 14 days also confirmed the above findings and the serum lipid profiles high density lipoproteins (HDL) low density lipoproteins (LDL) and very low density lipoproteins (VLDL) were found to be optimum in aqueous or methanolic extracts on par with normal healthy rats or standard drug glibenclamide treated rats.

## DEPARTMENT OF PHARMACHEMISTRY

| Sl. No. | Name of Journal, Volume No. Issue and Period | Author/s | Title of the article |
|---|---|---|---|
| 1. | Int J of Chem tech. Res. 2010; 2(3):1368-71. | Chaluvaraju KC, Ishwar Bhat K. | Synthesis and antimicrobial activities of Aminobenzylated mannich bases of pyrazinamide. |

**Abstract:**

A series of aminobenzylated mannich bases of pyrazinamide (2a to 2j) have been prepared by mannich reaction of aromatic aldehydes with pyrazinamide and secondary amines. The chemical structure of all the synthesizedcompounds have been elucidated by spectral studies (IR, H1 NMR). Also they have been assayed in vitro for their biological activity against E.coli, B.substilis, S.aureas bacterial species and A. niger and C. albicans fungal microorganisms.

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| 2. | J of Pharm Res. 2010; 3(1): 47-8. | Chaluvaraju KC, Ishwar Bhat K, Zaranappa. | Quantitative spectrophotometric determination of sulphacetamide sodium in bulk and in pharmaceutical dosage form. |

**Abstract:**

**:** A simple and rapid spectrophotometric method in visible region has been developed for the determination of sulphacetamide Sodium in bulk and in pharmaceutical dosage forms. The method is based on the formation of orange colour chromogen by diazotization of sulphacetamide sodium followed by a diazo-coupling reaction between the resulting product and phloroglucinol. The chromogen exhibited maximum absorbance at 417 nm and obeyed Beer's law in the concentration range of 2-10 mcg/ml. Statistical analysis and recovery studies validated the method.

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| 3. | J of Cur Pharm Res. 2010;1:39-42. | Santhosh kumar, Niranjan MS, Chaluvaraju KC, Jamakandi CM, Dayanand Kadadevar. | Synthesis and antimicrobial study of some Schiff bases of sulphonamides |

**Abstract:**

The purpose of research was to synthesize the better antimicrobial compounds using Different substituted aromatic aldehydes are chosen as the starting material for the synthesis of Schiff's Bases with sulfonamide helps to formation of Schiff bases in presences of alcohol and acidic reagent. Melting points of the synthesized compounds were determined by open capillary and are uncorrected. The purity of the compounds was checked using precoated TLC plates (MERCK, 60F) using chloroform: methanol (8:2) solvent system. The developed chromatographic plates were visualized under UV at 254nm. IR spectra were recorded using KBr on Shimadzu FTIR model 8400 spectrophotometer, 1H NMR spectra in DMSO on a BRUKER FT-NMR instrument using TMS as internal standard. All the synthesized compounds (Ia-Ij) were purified by successive recrystallization using ethanol. The purity of the synthesized compounds was checked by performing TLC. The structures of the synthesized compounds were determined on the basis of their FTIR and 1H NMR data. In accordance with the data obtained from antimicrobial activity, all the synthesized Schiff bases of sulphonilamide have shown good activity against the tested microbes. Among these Schiff bases of sulphanilamide, compound bearing trimethoxy group (If), methoxy group (Ie) and furan ring (Ii) has shown good activity against all the tested bacteria and fungi.Antibacterial and antifungal activity of the synthesized derivatives was done in comparison with ciprofloxacin and ketoconazole as standard to reveal the potency of synthesized derivatives. All the 4 selected strains of bacteria and fungi namely B. Subtilis, S. Aureus, E. Coli ,S.Typhi and C.Albicans,A. Niger showed sensitivity to all derivatives at higher concentration (200$\mu$g/ml) and no sensitivity at lower concentration.

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| 4. | Asian J of Chem. 2010; 22(8):6605-06. | Chaluvaraju KC, Ishwar Bhat K. | Antifungal evaluation of some novel aminobenzylated mannich bases |

**Abstract:**

In the present study, 8 synthesized amino benzylated Mannich bases were evaluated for their antifungal activity against the pathogenic strains of *Candida albicans* and *Aspergillus niger* using ketoconazole as reference standard drug. All the compounds studied have shown moderate antifungal activity with zones of inhibition ranging from 5-12 nm with the minimum inhibitory concentration ranging from 600-800 g/mL.

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| 5. | Int. J of Pharm and Pharmaceu Sci. 2010;2(3):182-7. | Sarfaraj Niazi, Chandrashekar Javali, Paramesh M. | Study of influence of linkers and substitutions on antimicrobial activity of some schiff bases. |

**Abstract:**

A series of twelve different Schiff bases in four sets each with different linkers and substitutions was synthesized by condensing appropriate aromatic amines with different aromatic aldehydes in the presence of glacial acetic acid a PH 4. The structures of all the synt6hesized compounds have been characterized on the e basis oif analytical and sopectral data. The antimicrobial acitivities of all these compounds 3 were evaluated by measuring zone of inhibition using agar diffusion method. The results of the antimicrobial activity showed that the compounds 3e (amide liker and pochloro phenyl substitutionbial and 3h (acetoxy amide linker and pocholoro phenyl substitution) had LogP Values of 3.77 and 3.74 respectively, and these were equivalence to the LogP values of standard Ketoconazole that showed significant antifunagal activities. None of the compounds showed good antibacterial activity except 3f (amide linker with ohydroxy phenyl substitutions )3g (with acetoxy amide linker ) and 3j (with succinamide linker) that had LogP values opf 3.03, 3.06 and 2.7 respectively compared to the standard ciprofloxcian with LogP value 0.77. The results showed the significance of linkers and different substitutions on Schiff bases over antimicrobial activities that should be considered for the design of new antimicrobial agents.

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| 6. | Int J of Pharmaceu Sci and Drug Res. 2010;2(3):182-7. | Jamakhandi CM, Chandrashekar Javali, Satish Kumar, Santosh Kumar, Sanjay Kumar D | New Fluorimetric Method of Determination for Lisinopril Dosage Forms. |

**Abstract:**

New fluorimetric analytical method which is simple, accurate, precise, specific is developed for determination of Lisinopril. The fluorimetric determination of Lisinopril is based on the formation of complex between Lisinopril and Fluorescien, measured at excitation wavelength of 366 nm and emission wavelength of 475 nm. Linearity was observed in the range of 0.03 – 0.15 $\mu$g ml$^{-1}$. The fluorimetric method shows regression coefficient of 0.99971, and Relative Standard Deviation 0.527. Tablet dosage forms were estimated were complied with percentage recovery studies of 99-100 %. The method was validated for linearity, precision, accuracy, specificity and statistically expressed.

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| 7. | Res J of Pharm Bio and Chem Sci. 2010;1(4):23-30. | Harsha Tripathy, Krishnanand ST, Laxmi Adhikary, Chandrashekar J | Microwave Assisted Parallel Synthesis of 1,4,5-Tri Substituted Imidazoles and their Pharmacological Evaluation. |

**Abstract:**

Among the advantages gained by employing microwave organic synthesis, most important one is the dramatic reduction in reaction times. In the present study various tri substituted imidazoles are synthesized using synthetic microwave oven, which showed significant reduction in reaction time, increased yield and synthesis of library of compounds in a very short time. Following microwave assisted parallel synthesis, six compounds were synthesized using six different amines and the yield was found to be 60-70%. The reactions were carried out in millimolar scale for optimization of reaction conditions and in molar scale for the bulk syntheses of the compounds. The synthesized compounds were characterized by Mass, NMR, IR and TLC. The activity check was performed in the area of Pharmacological evaluation, wherein synthesized compounds were screened for antiinflammatory activity by rat paw edema method and they showed good activity when given orally**.**

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| 8. | Research J of Pharm Biology and Chem Sci. 2010;1(4):31-44. | Harsha Tripathy, Krishnanand ST, Laxmi Adhikary, Chandrashekar J | Parallel Synthesis of Tetra Substituted Imidazoles by Microwave Irradiation and Evaluation of their Anti- inflammatory Activity |

**Abstract:**

Green chemistry is the design of chemical products and processes that reduce or eliminate the use and/or generation of hazardous substances. Imidazoles are one such library of compounds that is being extensively worked on. In the present study various tetra substituted imidazoles are synthesized using domestic microwave oven which showed significant reduction in reaction time, increased yield and very short time for the synthesis of library of compounds. All the compounds are synthesized by microwave assisted parallel synthetic method in solid phase. These multi component, one pot reactions were carried out in millimolar scale for optimization of reaction conditions and in molar scale for the bulk syntheses of the compounds. The synthesized compounds were characterized by Mass, NMR, IR and TLC and were screened for anti-inflammatory activity by rat paw edema method. Some of these compounds showed anti-inflammatory activity comparable to that of the market standard.

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## DEPARTMENT OF PHARMACEUTICAL CHEMISTRY

| Sl. No. | Name of Journal, Volume No. Issue and Period | Author/s | Title of the article |
|---|---|---|---|
| 1. | European Journal of Medicinal Chemistry 4365- 4369, 45 (2010) | Janardhanan Saravanan, Shamanna Mohan, Jay Jyoti Roy | Synthesis of some 3-substituted amino-4,5- tetramethylene thieno[2,3-d] [ 1,2,3]-triazin-4(3H)-ones as potential antimicrobial agents. |

**Abstract:**

A series of 3-Substituted amino-4,5-tetramethylene thieno[2,3-d] [1,2,3]-triazine-4(3H)-ones have been synthesized and characterized by UV,IR, 1H NMR, elemental and mass spectral analysis. The title compounds were evaluated for their antimicrobial activity by agar diffusion method against four bacteria and three fungi using Ampicillin and Miconazole nitrate as standards. The compounds VIIIa, IXa, Xa and XIa showed an antimicrobial efficacy considerably greater than the compounds Ia to VIIa with -H, phenyl and electron donating (activating) groups like methyl, ethyl and tolyl substitutions at R, suggesting that lipophillic groups like chloro, fluoro substitution on the phenyl ring plays an important role in enhancing the antimicrobial properties of this class of compounds. From the screening results it can be concluded that the compounds having the lipophillic groups like chlorophenyl and fluorophenyl groups at R exhibited appreciable antimicrobial activities. Whereas, the compounds are having eH, phenyl and electron donating (activating) groups like methyl, ethyl and tolyl substituents at R were less active against all the organisms used.

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| 2. | European Journal of Medicinal Chemistry (2009) 1–8 | B.P. Mallikarjuna, B.S. Sastry, K. Sathisha G.V. Suresh Kumar, Y. Rajendraprasad, S.M. Chandrashekar | Synthesis of new 4-isopropylthiazole hydrazide analogs and some derived clubbed triazole, oxadiazole ring systems – A novel class of potential antibacterial, antifungal and antitubercular agents |

**Abstract:**

In the present study a series of 4-isopropylthiazole-2-carbohydrazide analogs, derived clubbed oxadiazole–thiazole and triazole–thiazole derivatives have been synthesized and characterized by IR, 1H NMR,13C NMR, elemental and mass spectral analyses. The synthesized compounds were evaluated for their preliminary in vitro antibacterial, antifungal and antitubercular activity against Mycobacterium tuberculosis H37Rv strain by broth dilution assay method. The synthesized compounds 7a, 7b, 7d and 4 showed an antitubercular efficacy considerably greater than that of the parent 4-isopropyl-1,3-thiazole-2-carbohydrazide 1, suggesting that the substituted 4-isopropylthiazole-2-carbohydrazide moiety plays an important role in enhancing the antitubercular properties of this class of compounds. Compounds 2c, 3, 4, 6d, 7a and 7b exhibited good or moderate antibacterial and antifungal activity. Compounds 4 and 7b showed appreciable cytotoxicity at a concentration of 250 mM.

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| 3. | Int.J.Res.Pharm.Sci. Vol -1, Issue-2, 143-150 (2010). | Srinath R, Pinkal D. Vithlani, Saravanan J, Pravin S. Jagdale, Prashant Raghav, Aravind Shenoy | Synthesis and evaluation of Anti-Depressant like activity of some novel thieno-1,2,3-triazine-4-ones |

**Abstract:**

Five derivatives of Thieno 1, 2, 3 triazine 4 – ones were synthesized by a well known Gewald reaction followed by Diazotization. The chemical structures of the compounds were proved by Physical and Spectral data. Compounds were screened for its antidepressant

activity by using Tail Suspension Test (TST), Reserpine Induced Hypothermia and Forced Swim Test (FST). In Tail suspension test JSV 2a (3- furfuryl–5,6–dihydrocyclohexathieno [2,3-d][1,2,3] triazine-4(3H)-one) and JSV 2b (3-cyclohexyl-5,6-dihydrocyclohexathieno [2,3-d][1,2,3] triazine -4(3H)-one) showed significant activity ($p<0.001$) by decreasing immobility time of mice at higher dose levels (50mg/kg). At lower dose levels (25 mg/kg) only JSV 2a had decreased the immobility time and shown significant activity ($p<0.001$), while JSV 2c (3- furfuryl-5,6-dihydrocyclopentathieno [2,3-d][1,2,3] triazine -4(3H)-one), JSV 2d (3-cyclohexayl-5,6-dihydrocyclopentathieno [2,3-d][1,2,3] triazine -4(3H)-one) and JSV 2e (3-cyclohexayl-5,6-dimethylthieno [2,3-d][1,2,3] triazine -4(3H)-one) have not shown any activity at both dose levels. JSV 2b at 25mg/kg did not show any activity. Based on the results of TST out of five only two compounds were used for other two models as they have shown significant results. In Reserpine induced hypothermia test in Rats JSV 2a and JSV 2b at 50mg/kg showed significant activity ($p<0.001$). At lower dose levels (25 mg/kg) only JSV 2a has shown significant activity ($p<0.001$). JSV 2b at 25mg/kg did not show any activity. In Forced Swim Test JSV 2a and JSV 2b at 50 mg/kg have shown significant activity ($p<0.001$). JSV 2a at 25 mg/kg has shown significant activity ($p<0.001$) whereas; JSV 2b did not show any activity at 25 mg/kg. These results indicate that compounds possessed Anti-depressant activity. Anti-depressant activity of both the compounds at both the dose levels (25mg/kg and 50mg/kg) was comparable to standard drug Imipramine (20mg/kg).

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| 4. | Research Journal of Pharmaceutical, Biological and Chemical Sciences April – June 2010 Volume 1 Issue 2 Page No. 124-130 | Kavitha PN, P Vijayanthimala, J Saravanan, S Mohan | Synthesis, characterization and invitro antimicrobial activity of some novel 3-substituted amino 2-mercapto 5,6,7,8-tetra hydro benzo(b)thieno-(2,3-d) pyrimidine-4- (3h)-ones. |

**Abstract:**

An ecofriendly synthesis of 3-substituted amino 2-mercapto 5,6,7,8- tetrahydro -benzo (b) thieno-(2,3-d)-pyrimidine-4-(3H)-ones was carried out.Condensed quinazolines like thiadiazoloquinazolines & the corresponding bioisostere thiadiazolothienopyrimidines were found to be biologically active molecules, 2-substituted 1, 3, 4-thiadiazolo (2,3-b) quinazolin-4-ones was reported to possess activity from our laboratories. Therefore an attempt was made to utilize the concept of bio-isosterism for the synthesis of 3-substitutedamino 2-mercapto-5,6,7,8-tetrahydro(b) benzo thieno(2,3-d) pyrimidin-4(3H)-ones for activity. The 3- amino 2-mercapto-5,6,7,8-tetrahydro benzo(b)thieno (2,3-d) pyrimidin-4(3H)-ones was further treated with varioussubstituted aromatic aldehydes. The new synthesized compounds were characterized by MP, TLC, IR,1H NMR and Mass spectra. These synthesized compounds were subjected to anti-microbial studies using fewGram-positive, Gram-negative and fungal organisms. The standard drug used for anti-bacterial activity is Ampicillin and the standard drug used for anti-fungal activity is Miconazole nitrate. Among thecompounds tested, three compounds exhibited significant antimicrobial activity.

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| 5. | Asian J. Research Chem. 3(3): July- Sept. 2010 Page 751-754 | Kavitha PN, S. Mohan, J. Saravanan Subhajit Dutta | Microwave Assisted Synthesis, Characterization and Antimicrobial Activity of Some Schiff Bases of 2- Amino (4-Chloro Phenyl) Thiazoles |

**Abstract:**

2- amino (4- chloro phenyl)thiazoles were synthesized by brominating p-chloroaceto phenone to give p-chloro phenacyl bromide which was then reacted with thiourea in microwave synthesizer to give 2- amino (4- chloro phenyl)thiazoles(II). Later the compound II were treated with ten different substituted aryl aldehydes to yield ten new Schiffbases (III). The compounds were characterized by IR, 1H NMR and Mass spectral data. Investigation on theantimicrobial activity of these compounds was determined by cup plate method against bacteria and fungi. Among thecompounds tested, five compounds exhibited significant antimicrobial activity.

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| 6. | IJPI ' s Journal of Medicinal Chemistry | Kavitha.P.N, S. Mohan, J.Saravanan | Synthesis of some novel 4-(4-Chlorophenyl)2-aryl substituted metheniminothiazoles as possible antioxidant agents |

**Abstract:**

**:** 2- amino (4- chloro phenyl)thiazoles was synthesized by brominating p-chloroaceto phenone to give p-chloro phenacyl bromide which was then reacted with thiourea in microwavesynthesizer to give 2- amino (4- chloro phenyl) thiazoles(II). Later the compund II was treatedwith ten different substituted aryl aldehydes to yield ten new Schiff bases (III). The compoundswere characterized by IR, 1H NMR and Mass spectral data. Investigation on the antioxidantactivity of these compounds was determined by DPPH assay method. Among the compoundstested, three compounds exhibited significant antioxidant activity.

## DEPARTMENT OF PHARMACOLOGY

| Sl. No. | Name of Journal, Volume No. Issue and Period | Author/s | Title of the article |
|---|---|---|---|
| 1. | Journal of Complementary and Integrative Medicine Vol.7,issue 12010, p.p1-9 | Ramesh C, Nandakumar K, Rajesh.R, Srinath.R, GL Vishwanatha | Anti-urolithiatic activity of *Cedrus deodara* in rats. |

**Abstract:**

The petroleum ether extract of the heart wood of *Cedrus deodara* (PECD) was tested for its diuretic and anti-urolithiatic activity. The urolithiasis was experimentally induced by administering sodium oxalate (70 mg/kg, i.p) for 10 days. PECD (100 and 200 mg/kg) was orally gavaged daily 1 h before sodium oxalate (NaOx) administration for 10 days. In NaOx treated rats, crystal was observed in urine under light microscope and elevation of serum parameters indicated the development of nephrolithiasis in the control group. Concomitant administration of PECD for 10 days along with NaOx prevented elevated serum biochemical levels due to the elimination of these in urine. Histology of the kidneys also indicated that PECD treatment had protected against NaOx induced nephroliathiasis. These results obtained, confirmed the beneficiary effect of *Cedrus deodara* in urolithiasis.

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| 2. | International Journal of Research in Pharmaceutical Sciences Vol-1, Issue-2, 143-150, 2010 | Srinath R, Pinkal D. Vithlani, Saravanan J, Pravin S. Jagdale, Prashant Raghav Aravind | Synthesis and Evaluation of Anti-Depressant like Activity of Some Novel Thieno 1, 2, 3 – triazine 4 – ones |

**Abstract:**

**:** Five derivatives of Thieno 1, 2, 3 triazine 4 – ones were synthesized by a well known Gewald reaction followed by Diazotization. The chemical structures of the compounds were proved by Physical and Spectral data. Compounds were screened for its antidepressant activity by using Tail Suspension Test (TST), Reserpine Induced Hypothermia and Forced Swim Test (FST). In Tail suspension test JSV 2a (3- furfuryl–5,6–dihydrocyclohexathieno [2,3-d][1,2,3] triazine-4(3H)-one) and JSV 2b (3-cyclohexyl-5,6-dihydrocyclohexathieno [2,3-d][1,2,3] triazine -4(3H)-one) showed significant activity ($p<0.001$) by decreasing immobility time of mice at higher dose levels (50mg/kg). At lower dose levels (25 mg/kg) only JSV 2a had decreased the immobility time and shown significant activity ($p<0.001$), while JSV 2c (3- furfuryl-5,6-dihydrocyclopentathieno [2,3-d][1,2,3] triazine -4(3H)-one), JSV 2d (3-cyclohexayl-5,6-dihydrocyclopentathieno [2,3-d][1,2,3] triazine -4(3H)-one) and JSV 2e (3-cyclohexayl-5,6-dimethylthieno [2,3-d][1,2,3] triazine -4(3H)-one) have not shown any activity at both dose levels. JSV 2b at 25mg/kg did not show any activity. Based on the results of TST out of five only two compounds were used for other two models as they have shown significant results. In Reserpine induced hypothermia test in Rats JSV 2a and JSV 2b at 50mg/kg showed significant activity ($p<0.001$). At lower dose levels (25 mg/kg) only JSV 2a has shown significant activity ($p<0.001$). JSV 2b at 25mg/kg did not show any activity. In Forced Swim Test JSV 2a and JSV 2b at 50 mg/kg have shown significant activity ($p<0.001$). JSV 2a at 25 mg/kg has shown significant activity ($p<0.001$) whereas; JSV 2b did not show any activity at 25 mg/kg. These results indicate that compounds possessed Anti-depressant activity. Anti-depressant activity of both the compounds at both the dose levels (25mg/kg and 50mg/kg) was comparable to standard drug Imipramine (20mg/kg).

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| 3. | Asian Pacific Journal of Tropical Medicine | Manjula B.<br>Shivalinge Gowda K.P. | Metabolomics - An Exciting New Field with in the " OMICS " Sciences |

**Abstract:**

Metabolomics is a newly emerging Science which can be seen as an advanced, specialized form of Analytical Biochemistry. This technology is centered around the detection of small molecules and, by definition, excludes the organic biopolymers such as proteins and fatty acids. Important small metabolites include amino and other organic acids, sugars, volatile metabolites and most of the diverse secondary metabolites found in plants such as alkaloids, phenolic components and coloured metabolites such as carotenoids and anthocyanins. Key to any metabolomics approach is the aim to gain the broadest overview possible of the biochemical composition of complex biological samples in just one or a small number of analyses. Liquid or gas chromatography (LC or GC) are usually used to separate the individual components in complex organic extracts after which Mass Spectrometry (MS) is employed to detect the metabolites present. Alternatively, Nuclear Magnetic Resonance (NMR) may be used. Characteristic of this technology is the large scale nature of the analyses performed - involving not only the semi-automated production of a large amount of complex data per analysis but also performing these analyses sequentially on large numbers of samples. Highly complex data matrices are obtained - often of many Gigabytes. Consequently, metabolomics analyses can only be performed when all the necessary computing and bioinformatics tools are in place to allow automated data storage and efficient non-labour intensive data analysis. Metabolomics is usually used either for 'fingerprinting' samples to perform comparative analyses to detect differences of for 'profiling' where individual differential metabolites are identified for further analysis.

## DEPARTMENT OF PHARMACEUTICS

| Sl. No. | Name of Journal, Volume No. Issue and Period | Author/s | Title of the article |
|---|---|---|---|
| 1. | Indian drugs, September, 2010 | Rupa. V, Swamy NGN, Abbaz. Z, Dasankoppa FS. | Formulation & evaluation of nanosuspensions for enhancing the dissolution of poorly soluble mebendazole. |

**Abstract:**

Mebendazole belongs to the group of benzimidazoles, which is a widely used drug in the treatment of intestinal worm infestations. The drug is practically insoluble in water and has poor wettability. Many poorly water soluble and poorly bioavailable drugs earlier called 'brick dust' candidates pose difficulty to develop drug formulations using conventional formulation techniques and were frequently abandoned in early stages of discovery. Hence, in the present study, it was attempted to formulate mebendazole in the form of nanosuspensions. Nanosuspensions of mebendazole were obtained by adaptation of quasi emulsion solvent diffusion technique. Control of the preparation variables such as polymer to drug ratio, agitation speed, duration of agitation and different surfactants in varying concentrations allowed formulation of nanoparticles with a diameter ranging from 750nm to 1020nm. The nanosuspensions were evaluated for particle size, drug entrapment efficiency, zeta potential measurement and subjected to scanning electron microscopy and in vitro dissolution profiles. The zeta potential values of all the formulations showed excellent stability. The in vitro dissolution profile of the prepared nanosuspensions showed faster rate of dissolution when compared to pure drug and the micronized drug. The dissolution data followed matrix kinetics and the drug release followed Fickian transport. The nanosuspensions were found to be stable for a period of 6 months at 400 ± 20 / 75% RH ±5% RH. Hence it was concluded that mebendazole could be formulated into a nanosuspension with improved dissolution characteristics and good stability.

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| 2. | AAPS PharmSciTech, Vol. 11, No. 1, March 2010 , P No 433-440 | BS Sudha, BK Sridhar A. Srinatha | Modulation of Tramadol Release from a Hydrophobic Matrix: Implications of Formulations and Processing Variables |

**Abstract:**

In the present investigation, hydrogenated cottonseed oil (HCSO) was evaluated as a sustained release matrix for a freely soluble drug, tramadol. Hydrophobic matrix tablets of tramadol, was evaluated by compression of physical mixture of drug and wax, dispersion of drug in HCSO by hot fusion or solubilisation techniques. The method of preparation of tablet had a significant effect on drug release with higher release observed from direct compression matrices and slower release from matrix prepared by dispersion (hot-fused matrices). Influence of addition of hydroxypropylmethyl cellulose, sodium carboxymethyl cellulose, polyethylene glycol 4000 and surfactants like sodium lauryl sulphate and polysorbate 20 to HCSO matrix on drug release was investigated. The added excipients exhibited a propensity to enhance drug release from the HCSO matrix. NaCMC was effective at a lower ratio (<10%w/w) and when incorporated at higher level made HCSO matrix to erode and disintegrate in a short period.

## DEPARTMENT OF PHARMACOGONOSY

| Sl. No. | Name of Journal, Volume No. Issue and Period | Author/s | Title of the article |
|---|---|---|---|
| 1. | European Bulletin of Drug Research, Vol. (18), 2010. | Lakshmi Prasanna V, K. Lakshman, Pruthvi N Medha .M Hegde | Evaluation of Anthelminthic Activity of alcohol and aqueous extracts of leaves of *Tecoma stans* |

**Abstract:**

Alcohol and aqueous extracts of leaves of *Tecoma stans* were investigated for their anthelminthic activity against *Pheretima posthuma*. Three concentrations (10,20 and 50 mg/ml) of both extracts were used in this study,which involved the determination of time paralysis and time of death of worms. Alcoholic extract of *Tecoma stans* exhibited significant anthelminthic activity at higher concentration of 50mg/ml compared to aqueous extract. Piperazine citrate(15mg/ml) was used as reference standard in this study.

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| 2. | Experimental and Toxicologic Pathology, 18 July 2010. | B. S. Ashok Kumar, K. Lakshman, K.N. Jayaveera | Antidiabetic, antihyperlipidemic and antioxidant activities of methanolic extract of *Amaranthus viridis* Linn in alloxan induced diabetic Wistar rats, |

**Abstract:**

The aim of this study was to investigate the antidiabetic, antihyperlipidemic and antioxidant activities of methanolic extract of whole plant of Amaranthus viridis (MEAV) in alloxan (ALX) induced diabetic rats. Diabetes was confirmed after 5 days of single intraperitoneal injection of ALX (140mg/kg) in albino Wister rats. MEAV (200 and 400mg/kg) and glibenclamide (10mg/kg, p.o.) orally administered daily for 15 days, blood was withdrawn for glucose determination on 0, 1, 10 and 15 days respectively. On the 15th day, overnight fasted rats were sacrificed and blood was collected for the determination of high density lipoproteins cholesterol (HDL-C), low density lipoprotein cholesterol (LDL-C), very low density lipoprotein cholesterol (VLDL-C), total cholesterol (TC), total glycerides (TG) and total proteins (TP). For in vivo antioxidant activity of MEAV, liver tissues were homogenized and the assay of lipid peroxidation and was measured as Malondialdehyde (MDA), glutathione (GSH), catalase (CAT) and total thiols (TT) were performed in control, ALX and MEAV treated rats. MEAV at doses of 200 and 400mg/kg showed significant reduction is blood glucose, lipid profiles and significant improvement in MDA, GSH, CAT and TT when compared to diabetic control group. In vitro alpha-amylase inhibition activity of MEAV was also studied. We concluded that MEAV possess antidiabetic, antihyperlipidemic and antioxidant activities.

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| 3. | Int. J. Res. Pharm. Sci. Vol-1, Issue- 2, 199-204, 2010. | Girija, K. Lakshman P Udaya Chandrika, N.Pruthvi | Evaluation of antimicrobial Activity of various bark extracts of *Bombax malabaricu* |

**Abstract:**

This study was carried out with an objective to investigate the antibacterial and antifungal potential of Bark of Bombax malabaricum. Antibacterial activity of successive extracts (petroleum ether, chloroform, acetone, alcohol, water) of bark were carried out against two Gram positive bacteria – Bacillus Subtilis and Staphylococcus aureus and two Gram negative bacteria – Escherichia coli, Pseudomonas aeruginosa. The antifungal activity of the ex-tracts was evaluated on two common pathogenic fungi – Aspergillus niger and Candida albicans. The testing was done by the agar diffusion method. Zones of inhibition of extracts were compared with that of standard Amoxycillin for antibacterial activity and Ketoconazole for antifungal activity. The extracts showed antibacterial and anti-fungal activities comparable with that of standard against the organisms tested. The results showed that the Pe-troleum ether and chloroform extracts showed no activity while the alcoholic extract showed more activity than the acetone and aqueous extracts. The highest inhibitory activity was determined for alcoholic extract against E.coli (19.50 ± 0.5000 mm, inhibition zone diameter). On the other hand, the weakest inhibitory activity was de-termined against P. aeruginosa for aqueous extract (7.00 ± 0.5774 mm, inhibition zone diameter).

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| 4. | Asian Pacific Journal of Tropical Medicine (2010)412-420 | Ashok Kumar BS, Lakshman. K, Jayaveera KN, Vel Murgan C, Arun Kumar PA, Vinod Kumar R, Meghda Hegde, Sridhar SM | Pain management in mice using Methanol extracts of three plants belongs to family *Amaranthaceae* |

**Abstract:**

To investigate the analgesic activity of methanolic extract of Amaranthus viridis (A. viridis), Amaranthus caudatus (A. caudatus) and Amaranthus spinosus (A. spinosus). In this study, the analgesic activity of methanol extracts of all three plants at doses of 200 and 400 mg/kg were investigated by acetic acid-induced writhings test, hot plate test and tail immersion test for mice.It was found that all the three plants showed significant pain management effect ($P<0.01$) at a dose of 400 mg/kg, but showed a less significant effect at a dose of 20 mg/kg in the entire tests used for evaluation of analgesic activities ($P<0.05$).Methanol extracts of A. viridis, A. caudatus and A. spinosus show potent analgesic activities, and this study provides the scientific proof for their traditional claims.

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| 5. | Latin American Journal of Pharmacy (formerly Acta Farmacéutica Bonaerense) 29 (4): 635-9 (2010). | B. Ashok Kumar, K. Lakshman, D. Shekar K.N Jayaveera, C. Muragan | Antinociceptive and Antipyretic Activities of Methanol Extract *Amaranthus caudatus* Linn |

**Abstract:**

The methanolic extract of whole plant of *Amaranthus caudatus* Linn. (MEAC), was tested for antinociceptive (using hot plate method, acetic acid writhing and tail immersion) and antipyretic (using yeast induced pyrexia) activities using mice and rats at doses of 200 and 400 mg/kg body weight. MEAC significantly ($p < 0.05$) inhibited acetic acid induced writhing and also significantly delayed the reaction time of mice to thermal stimulation produced by the hot plate and hot water in tail immersion test. MEAC significantly ($p < 0.01$) reduced fever induced by yeast. These results suggest that the MEAC has exhibited significant antinociceptive and antipyretic effects, which were comparable with standard drugs.

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| 6. | International Journal of Biological and Pharmaceutical Research.1, 2010, 43-4 | K.Girija, K.Lakshman S.Mohan | Antihyperglycemic and Hypolipidemic activity of methonolic extract of *Amaranthus caudatus* Linn. Leaves in experimental diabetes |

**Abstract:**

**:** Amaranthus caudatus leaves are described in folk medicine as possessing anti-diarrheal, astringent, nutritive, tonic,hypoglycemic and hypolipidemic effects. To investigate the antihyperglycaemic and hypolipidemic effect of methanolic extract of leaves of Amaranthus caudatus in different models of rats. The anti hyperglycemic and hypolipidemic activity of methanolic extract of leaves of Amaranthus caudatus (MEAC) was evaluated by using normal and STZ (Streptozotocin) induced diabetic rats. The methanolic extract was administered to normal and STZ-induced diabetic rats at dose of 200 mg/kg and 400 mg/kg p.o. per day for 21 days. Blood glucose levels, Body weights were monitored at specific intervals and different biochemical parameters were also carried out. Histology of pancreas was performed. The statistical data indicated the significant increase in the body weight, decrease in the blood glucose, total cholesterol and serum triglycerides. HDL cholesterol level was significantly increased when treated with extract. Histologically, focal necrosis was observed in the diabetic rat pancreas but was less obvious in treated groups. The MEAC has beneficial effects in reducing the elevated blood glucose level and body weight changes and lipid profile of STZ induced rats.

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| 7. | International Journal of Biological and Pharmaceutical Research.1, 2010, Vol-I. 2010. 43-49. | Udaya chandrika, K. Girija, K. Lakshman, N. Pruthvi. | Evaluation of wound healing activity of bark of *Bombax malabaricum* |

**Abstract:**

*Bombax malabaricum*, commonly known as Red silk cotton tree, is used in folklore medicine in fomenting, sealing of secondary infection, healing of wounds and skin eruptions. There was no scientific evidence justifying the use of bark of *Bombax malabaricum*, therefore the present study was aimed at evaluation of wound healing activity of the plant. In the present study the bark of *Bombax malabaricum* were studied for wound healing activity by incorporating extract in simple ointment base B.P. in concentration of 2% (w/w) and 4% (w/w) .Wound healing activity was studied in three types of model in rats viz. excision, incision and burn wound model. The results were also comparable to those of a standard drug, nitrofurazone in terms of wound contracting ability, wound closure time, tensile strength. The statistical data indicated that the wound with ointment containing 4% w/w alcoholic extract exhibited significant ($P < 0.001$) wound contracting ability and period of epithelization. Significant tensile strength was observed with both the ointment formulations 2% w/w and 4% w/w. The results of histopathological examination supported the outcome of both excision and burn wound models. The experimental data demonstrated that *Bombax malabaricum* displayed remarkable wound healing activity.

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| 8. | International Journal of Research in Pharmaceutical Sciences. Vol-1, Issue-2, 199-204, 2010 | K. Girija, P. Udaya Chandrika, K Lakshman, N.Pruthvi | Evaluation of antimicrobial Activity of various bark extracts of *Bombax malabaricum* |

**Abstract:**

This study was carried out with an objective to investigate the antibacterial and antifungal potential of Bark of Bombax malabaricum. Antibacterial activity of successive extracts (petroleum ether, chloroform, acetone, alcohol, water) of bark were carried out against two Gram positive bacteria – Bacillus Subtilis and Staphylococcus aureus and two Gram negative bacteria – Escherichia coli, Pseudomonas aeruginosa. The antifungal activity of the ex-tracts was evaluated on two common pathogenic fungi – Aspergillus niger and Candida albicans. The testing was done by the agar diffusion method. Zones of inhibition of extracts were compared with that of standard Amoxycil-lin for antibacterial activity and Ketoconazole for antifungal activity. The extracts showed antibacterial and anti-fungal activities comparable with that of standard against the organisms tested. The results showed that the Pe-troleum ether and chloroform extracts showed no activity while the alcoholic extract showed more activity than the acetone and aqueous extracts. The highest inhibitory activity was determined for alcoholic extract against E.coli ($19.50 \pm 0.5000$ mm, inhibition zone diameter). On the other hand, the weakest inhibitory activity was de-termined against P. aeruginosa for aqueous extract ($7.00 \pm 0.5774$ mm, inhibition zone diameter).

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| 9. | International Journal of Biological and Pharmaceutical Research.1, 2010, 43-49. | K.Girija, K.Lakshman S.Mohan | Antihyperglycemic and Hypolipidemic activity of methonolic extract of *Amaranthus caudatus* Linn. Leaves in experimental diabetes |

**Abstract:**

Amaranthus caudatus leaves are described in folk medicine as possessing anti-diarrheal, astringent, nutritive, tonic,hypoglycemic and hypolipidemic effects. To investigate the antihyperglycaemic and hypolipidemic effect of methanolic extract of leaves of Amaranthus caudatus in different models of rats. The anti hyperglycemic and hypolipidemic activity of methanolic extract of leaves of Amaranthus caudatus (MEAC) was evaluated by using normal and STZ (Streptozotocin) induced diabetic rats. The methanolic extract was administered to normal and STZ-induced diabetic rats at dose of 200 mg/kg and 400 mg/kg p.o. per day for 21 days. Blood glucose levels, Body weights were monitored at specific intervals and different biochemical parameters were also carried out. Histology of pancreas was performed. The statistical data indicated the significant increase in the body weight, decrease in the blood glucose, total cholesterol and serum triglycerides. HDL cholesterol level was significantly increased when treated with extract. Histologically, focal necrosis was observed in the diabetic rat pancreas but was less obvious in treated groups. The MEAC has beneficial effects in reducing the elevated blood glucose level and body weight changes and lipid profile of STZ induced rats.

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| 10. | International Journal of Biological and Pharmaceutical Research. 1, 2010, Vol-I. 2010. 43-49. | Udaya Chandrika, K. Girija, K. Lakshman, N. Pruthvi. | Evaluation of wound healing activity of bark of *Bombax malabaricum.* |

**Abstract:**

Bombax malabaricum, commonly known as Red silk cotton tree, is used in folklore medicine in fomenting, sealing of secondary infection, healing of wounds and skin eruptions. There was no scientific evidence justifying the use of bark of Bombax malabaricum, therefore the present study was aimed at evaluation of wound healing activity of the plant. In the present study the bark of Bombax malabaricum were studied for wound healing activity by incorporating extract in simple ointment base B.P. in concentration of 2% (w/w) and 4% (w/w) .Wound healing activity was studied in three types of model in rats viz. excision, incision and burn wound model. The results were also comparable to those of a standard drug, nitrofurazone in terms of wound contracting ability, wound closure time, tensile strength. The statistical data indicated that the wound with ointment containing 4% w/w alcoholic extract exhibited significant ($P < 0.001$) wound contracting ability and period of epithelization. Significant tensile strength was observed with both the ointment formulations 2% w/w and 4% w/w. The results of histopathological examination supported the outcome of both excision and burn wound models. The experimental data demonstrated that *Bombax malabaricum* displayed remarkable wound healing activity.

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| 11. | Journal of Complementary and Integrative Medicine. 2010,Vol.7, Issue 1, Article 11, 1-9 | Ramesh C, Rajesh R, Nandakumar K, Srinath R, G L Viswanatha, Rajesh D, Sahil T Murugananthan G | Anti-urolithiatic activity of heart wood extract of *cedrus deodara* in rats |

**Abstract:**

The petroleum ether extract of the heart wood of *Cedrus deodara* (PECD) was tested for its diuretic and anti-urolithiatic activity. The urolithiasis was experimentally induced by administering sodium oxalate (70 mg/kg, i.p) for 10 days. PECD (100 and 200 mg/kg) was orally gavaged daily 1 h before sodium oxalate (NaOx) administration for 10 days. In NaOx treated rats, crystal was observed in urine under light microscope and elevation of serum parameters indicated the development of nephrolithiasis in the control group. Concomitant administration of PECD for 10 days along with NaOx prevented elevated serum biochemical levels due to the elimination of these in urine. Histology of the kidneys also indicated that PECD treatment had protected against NaOx induced nephroliathiasis. These results obtained, confirmed the beneficiary effect of *Cedrusdeodara* in urolithiasis.

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| 12. | Pharmacognosy Magazine, 2010;Vol 6 Issue 24, 336-338. | S. Swathi, G. Murugananthan, S. K. Ghosh | Oviposition deterrent activity from the ethanolic extract of *Pongamia pinnata*, *Coleus forskohlii,* and *Datura stramonium* leaves against *Aedes aegypti* and *Culex quinquefaciatus* |

**Abstract:**

Mosquitoes are responsible for spread of many diseases than any other group of arthropods. Diseases such as malaria, filariasis, dengue hemorrhagic fever (DHF), and chikunguinya are real threat to mankind. In the present study, ethanolic extracts of leaves of *Pongamia pinnata*, *Coleus forskohlii*, and *Datura stramonium* were evaluated for oviposition deterrent activity against *Aedes aegypti* and *Culex quinquefasciatus*. The oviposition deterrent tests of ethanolic extract of *Pongamia pinnata*, *Coleus forskohlii*, and *Datura stramonium* leaves reduced egg laying by 97.62%, 77.3%, 100% against *Aedes aegypti* and 59.10%, 39.22%, 82% against *Culex quinquefasciatus* at higher concentration (0.1%).

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| 13. | Research Journal of Pharmacognosy and Phytochemistry. 2(4): July-Aug.2010, 275-279 | Soosamma John, Madhavi T., Bincy Raj, Jincy Shaji, Vinutha Bhat | Phytochemistry and Pharmacology of an Important Indian Medicinal Plant *Crataeva nurvala Buch* Ham |

**Abstract:**

*Crataeva nurvala* Buch. Ham. (Capparidaceae) is a high-value medicinal tree that grows almost all over India, especially in the semiarid regions. Medicinal usage has been reported in traditional systems of medicine, such as Ayurveda and Unani. This drug is used in traditional system of medicine against a wide variety of urinary disorders. *Crataeva nurvala* is commonly known as Varuna. Many phytoconstituents have been isolated from the fruits, root bark and stem bark of Varuna. Lupeol is the major chemical constituent isolated from Varuna. The minor chemical constituents are cadabicine, cadabicinediacetate, catechin, (-) epicatechin-5-glucoside, (-)epiafzelechin, glucocapparin, lupeol acetate, spinasterol acetate and taraxasterol. Lupeol, a pentacyclic triterpene isolated from the root bark, has been shown to significantly minimize the deposition of Stone-forming constituents in kidneys. Investigations have also indicated the plant has anti-arthritic, hepatoprotective, and cardio-protective actions. This review briefly examines the Phytochemistry, biological activities, pharmacological actions, clinical studies, and medicinal applications of *Crataeva nurvala* to provide direction for further research.

## DEPARTMENT OF PHARMACEUTICAL ANALYSIS

| Sl. No. | Name of Journal, Volume No. Issue and Period | Author/s | Title of the article |
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| 1. | Journal of Chromatographic Science, Feb- 2010, Volume 48, Page Numbers 156- 160 | Nagaraj Gowda, Pradeep Kumar, Surender Panghal, Mashru Rajshree | ICH Guidance in Practice: Validated Reversed-Phase HPLC Method for the Determination of Active Mangiferin from Extracts of *Mangifera indica* Linn |

**Abstract:**

This study presents the development and validation of a reversed-phase liquid chromatographic method for the determination of mangiferin (MGN) in alcoholic extracts of mangifera indica. A Lichrospher 100 C18–ODS (250 × 4.6 mm, 5 m size) (Merck, Whitehouse Station, NJ) prepacked column and a mobile phase of potassium dihydrogen orthophosphate (0.01M) pH 2.7 ± 0.2–acetonitrile (15:85, v/v) with the flow rate of 1 mL/minwas used. MGN detection was achieved at a wavelength monitored at 254 nm with SPD-M 10A vp PDA detector or SPD 10AD vp UV detector in combination with class LC 10A software. The proposed method was validated as prescribed by International Conference on Harmonization (ICH) with respect to linearity, specificity, accuracy, precision, stability, and quantification. The method validation was realized using alcoholic extracts and raw materials of leaves and barks. All the validation parameters were within the acceptable limits, and the developed analytical method can successfully be applied for MGN determination.

## BHARATHI COLLEGE OF PHARMACY

B.E.T CAMPUS, BHARATHI NAGAR – 571422.

| Sl. No. | Name of Journal, Volume No. Issue and Period | Author/s | Title of the article |
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| 1. | International journal of Pharmaceutical Sciences review and research, Vol. no. 5, issue 2, 2010 | Ashvini Veera Raje Urs, Kunchu Kavitha, Ganesh Nanjan Sockan | Albumin Microspheres : An unique system as drug delivery carriers for non steroidal anti- inflammatory drugs (NSAIDs) |

**Abstract:**

Non steroidal anti inflammatory drugs are the most commonly used and widely prescribed drugs all over the world. With the wide advantages they are also associated with severe Gastro-Intestinal side effects. Developments of novel drug delivery systems have always been a challenge to formulation scientists because of their high instability and economic factor compared to the conventional dosage forms. Thus the main objective of this review was to present an alternative way of developing NSAIDs as microspheres specifically using albumin polymers, which are playing an increasing role as drug carriers in the clinical setting. Hence there is a prolonged release of the drug along with minimized side effects. A brief overview of the methods developed for the preparation of albumin microspheres and the most suitable techniques for optimum entrapment of drug is emphasized. The in-vitro evaluations are also explained. In order to appreciate the medical application possibilities of albumin microspheres in novel drug delivery, some fundamental aspects are also briefly discussed.

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| 2. | International journal of Pharm Tech research, Vol. no. 3, issue 2, 2010 | Basu S.K, Kavitha K, Rupesh Kumar M. | Preparation and evaluation of Trimetazidine Hydrochloride microspheres using Chitosan |

**Abstract:**

Microspheres of Trimetazidine Hydrochloride (TZ) were prepared by coacervation method without the use of chemical cross–linking agents such as glutaraldehyde to avoid the toxic reactions and other undesirable effects of the chemical cross-linking agents. Alternatively, ionotropic gelation was employed by using sodium-tripolyphosphate (Na-TPP) as cross linking agent. Chitosan was used as polymer. All the prepared microspheres were subjected to various physico-chemical studies, such as drug-polymer compatibility by Thin Layer Chromatography (TLC) and Fourier Transform Infrared Spectroscopy (FTIR), surface morphology by scanning electron microscopy (SEM), frequency distribution, encapsulation efficiency by High Peformance Thin Layer Chromatography (HPTLC), in-vitro drug release characteristics and release kinetics. TLC and FTIR studies indicated no drug-polymer incompatibility. Surface smoothness of microspheres was increased by increasing the polymer concentration, which was confirmed by SEM. As the drug to polymer ratio was increased, the mean particle size (MPS) of TZ microspheres was also increased. A maximum of 80% of drug entrapment efficiency was obtained by the method employed. All the MS showed zero order release kinetics followed by a Fickian diffusion mechanism. From the above data it was concluded that it may be possible to design a controlled drug delivery system for the prolonged release of TZ, improving therapy by possible reduction of time intervals between administrations.

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| 3. | Research Journal of Pharmacy and Technology, Vol no. 3, issue 3, 2010 | Sanat Kumar Basu, Kunchu Kavitha, Mani Rupesh Kumar | Formulation and evaluation of Tramadol Hydrochloride microspheres for oral delivery |

**Abstract:**

Microspheres (MS) of Tramadol Hydrochloride (TM) were prepared by coacervation method without the use of chemical cross–linking agent (glutaraldehyde) to avoid the toxic reactions and other undesirable effects of the chemical cross-linking agent. Alternatively, ionotropic gelation was employed by using sodium-tripolyphosphate (Na- TPP) as cross linking agent. Chitosan was used as polymer. All the prepared microspheres were subjected to various physico-chemical studies, such as drug-polymer compatibility by thin layer chromatography (TLC) and Fourier Transform Infrared Spectroscopy (FTIR), surface morphology by scanning electron microscopy (SEM),

frequency distribution, encapsulation efficiency by High Peformance Thin Layer Chromatography (HPTLC), in-vitro drug release characteristics and release kinetics. TLC and FTIR studies indicated no drug-polymer incompatibility. Surface smoothness of MS was increased by increasing the polymer concentration, which was confirmed by SEM. As the drug to polymer ratio was increased, the mean particle size (MPS) of TM microspheres was also increased. A maximum of 87% of drug entrapment efficiency was obtained by the method employed. All the MS showed initial burst release followed by a Fickian diffusion mechanism. It is possible to design a controlled drug delivery system for the prolonged release of TM, improving therapy by possible reduction of time intervals between administrations.

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| 4. | Scientia pharmaceutica, vol. no. 78, 2010 | Sanat Kumar Basu, Kunchu Kavitha, Mani Rupesh Kumar | Evaluation of Ketorolac Tromethamine microspheres by Chitosan/Gelatin B complex coacervation |

**Abstract:**

**:** Microspheres (MS) of Ketorolac Tromethamine (KT) for oral delivery were prepared by complex coacervation (method-1) and simple coacervation (method-2) methods without the use of chemical cross–linking agent (glutaraldehyde) to avoid the toxic reactions and other undesirable effects of the chemical cross-linking agents. Alternatively, ionotropic gelation was employed by using sodium-tripolyphosphate (Na-TPP) as cross linking agent. Chitosan and gelatin B were used as polymer and copolymer respectively. All the prepared microspheres were subjected to various physico-chemical studies,such as drug-polymer compatibility by Thin Layer Chromatography (TLC) and Fourier Transform Infra Red Spectroscopy (FTIR), surface morphology by Scanning Electron Microscopy (SEM), frequency distribution, encapsulation efficiency, in-vitro drug release characteristics and release kinetics. The physical state of drug in the microspheres was determined by Differential Scanning Calorimetry (DSC) and X-ray powder Diffractometry (XRD). TLC and FTIR studies indicated no drug-polymer incompatibility. All the MS showed release of drug by a fickian diffusion mechanism. DSC and XRD analysis indicated that the KT trapped in the microspheres existed in an amorphous or disordered-crystalline status in the polymer matrix. It is possible to design a controlled drug delivery system for the prolonged release of KT, improving therapy by possible reduction of time intervals between administrations.

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| 5. | International journal of Pharma Research and Development. Vol no. 2, issue 10, 2010 | Patel Mehul, Ganesh Nanjan Sockan, K.Kavitha, Tamizh Mani | Challenges in the formulation of bilayered tablets : A review |

**Abstract:**

Several pharmaceutical companies are currently developing bi-layer tablets, for a variety of reasons: patent extension, therapeutic,marketing to name a few. To reduce capital investment, quite often existing but modified tablet presses are used to develop and produce such tablets. This article explains why the development and production of quality bi-layer tablets needs to be carried out on purpose-built tablet presses to overcome common bi-layer problems, such as layer-separation, insufficient hardness, inaccurate individual layer weight control, cross-contamination between the layers, reduced yield, etc. Using a modified tablet press may therefore not be your best approach in producing a quality bi-layer tablet under GMP-conditions. Especially when high production output is required.

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| 6. | International journal of Pharm Tech research, Vol. no. 2, issue 3, 2010 | Kavitha K, Puneeth KP, Tamizh Mani T | Development and evaluation of Rosiglitazone maleate floating tablets using natural gums |

**Abstract:**The aim of present was to develop gatroretentive drug delivery system of Rosiglitazone maleate. Floating tablets of Rosiglitazone maleate was developed using gas forming agents, like sodium bicarbonate, tartaric acid and natural gums like Xanthan gum and Guar gum. The prepared tablets evaluated in terms of their precompression parameters, physical characteristics, *in vitro* release, buoyancy and buoyancy lag time. The formulation optimized for different concentration of natural gums like Xanthan gum and Guar gum. The results of *invitro* release studies showed that optimized formulation (F6) could sustain drug release (98%) for 12h and remain buoyant for 12h. The prepared tablets were evaluated in terms of their precompression parameters, physical characteristics, *in vitro* release, buoyancy, buoyancy lag-time. The formulations were optimized for the different concentrations of Xanthan gum and Guar gum. The results of the *in*

*vitro* release studies showed that the optimized formulation (F6) could sustain drug release (98%) for 12 h and remain buoyant for 12 h. The optimized formulation was subjected to various kinetic release investigations and it was found that the mechanism of drug release was predominantly diffusion with a minor contribution from polymeric relaxation. Optimized formulation (F6) showed no significant change in physical appearance, drug content, buoyancy lag time or *in vitro* dissolution study after storage at 45 °C/75% RH for three months.

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| 7. | International journal of Applied Pharmaceutics, vol. no. 2, issue 2, 2010 | Kavitha K, Puneeth KP, Tamizh Mani T | Development and evaluation of Rosiglitazone maleate floating tablets |

**Abstract:**

The aim of present study was to develop gatroretentive drug delivery system of Rosiglitazone maleate. Floating tablets of Rosiglitazone maleate was developed using gas forming agents, like sodium bicarbonate, tartaric acid and polymers like HPMC K15M and Xanthan gum. The prepared tablets evaluated in terms of their precompression parameters, physical characteristics, *in vitro* release, buoyancy and buoyancy lag time. The formulation optimized for different concentration of polymers like HPMC K15M and Xanthan gum. The results of *in vitro* release studies showed that formulation (F6) could sustain drug release (98%) for 12h and remain buoyant for 12h. The optimized formulation (F6) was subjected to various kinetic release investigations and it was found that the mechanism of drug release was predominantly diffusion with a minor contribution from polymeric relaxation. Optimized formulation (F6) showed no significant change in physical appearance, drug content, buoyancy lag time or *in vitro* dissolution study after storage at 45 °C/75% RH for three months.

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| 8. | Tropical journal of Pharmaceutical Research, Vol no. 9, issue 3. 2010 | Rakesh K Deore, Kunchu Kavitha, Theetha G Tamizhmani | Preparation and evaluation of sustained release matrix tablets of Tramadol Hydrochloride using Glyceryl palmitostearate |

**Abstract:**

**Purpose:** To prepare oral sustained release matrix tablets of a highly water soluble drug, tramadol hydrochloride, and to evaluate the effect of concentration of the hydrophobic polymer content and method of preparation on drug release**.**

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| 9. | International journal of Pharm Tech research, Vol. no. 2, issue 2, 2010 | Kavitha .K, Sudhir K. Yadav, Tamizhmani T | Formulation and evaluation of floating tablets of RHCL using natural and synthetic polymers |

**Abstract:**

The purpose of this research was to prepare a floating drug delivery system of Ranitidine hydrochloride (RHCL) in order to increase the gastric residence time (GRT) and comparison of natural and synthetic polymer for better sustained effect. The tablets were prepared by direct compression. The drug: polymer interaction was determined by IR spectroscopic method. The pre and post compression studies were performed by using IP standard formula and procedure. Drug release from the floating drug delivery system was studied using USP II .The release behavior of the natural and synthetic polymer was compared according to obtained data. The release data were subjected to different models zero order, first order Higuchi and Pappas in order to evaluate their release kinetics and mechanisms. The hardness of all formulations was found to be in the range of $3.5 \pm 0.2$ - $4.5 \pm 0.1$ kg/cm2. Among these all formulations (F1 to F4) prepared by direct compression, batch F4 was best formulation and showed very slow release i.e. 76.02% in 12 h ($p < 0.05$). The drug release of the other formulation like F1 to F3 (94.79%, 88.73%, 83.32% in 12h) was higher from the F1 formulation prepared by direct compression. The drug release was observed by fickian diffusion mechanism. The release kinetics of the formulation F1and F2 (synthetic polymer) shows more release as compare to F3 and F4 (natural polymer). Natural polymer shows better sustained release properties than synthetic polymer. The formulation with guar gum and xanthum gum shows better sustained release effect than HPMC different grade. The developed floating tablets of RHCL may be used in clinic for prolonged drug release for at least 12hrs, thereby improving the bioavailability and patient compliance.

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| 10. | International journal of Pharmacy and Pharmaceutical sciences, vol. no. 2, issue 3, 2010 | Kavitha .K, Chintagunta Pavanveena, Anil Kumar S.N, Tamizh Mani. T | Formulation and evaluation of Trimetazidine Hydrochloride loaded Gelatin microspheres |

**Abstract:**

Trimetazidine hydrochloride-loaded Gelatin microspheres were prepared by the ionic cross-linking technique using TPP as cross-linking agent. The process induced the formation of microspheres with the incorporation efficiency of 47% to 77%. The effect of Gelatin concentration, cross-linking agents and conditions was evaluated with respect to entrapment efficiency, particle size, surface characteristics and *in vitro* release behaviors. Infrared spectroscopic study confirmed the absence of any drug-polymer interaction. Differential scanning colorimetric analysis revealed that the drug was molecularly dispersed in the Gelatin microspheres matrices showing rough surface, which was confirmed by scanning electron microscopy study. The mean particle size and entrapment efficiency were found to be varied by changing various formulation parameters. The *in vitro* release profile could be altered significantly by changing various formulation parameters to give a sustained release of drug from the microspheres. The kinetic modeling of the release data indicate that trimetazidine hydrochloride release from the Gelatin microspheres follow anomalous transport mechanism after an initial lag period when the drug release mechanism was found to be fickian diffusion controlled.

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| 11. | International journal of Applied Pharmaceutics, vol. no. 2, issue 2, 2010 | Chintagunta Pavanveena, Kavitha K, Anil Kumar S.N | Formulation and evaluation of Trimetazidine Hydrochloride loaded Chitosan microspheres |

**Abstract:**

Trimetazidine hydrochloride-loaded chitosan microspheres were prepared by the ionic cross-linking technique using TPP as cross-linking agent. The process induced the formation of microspheres with the incorporation efficiency of 47% to 77%. The effect of chitosan concentration, crosslinking agents and conditions was evaluated with respect to entrapment efficiency, particle size, surface characteristics and *in vitro* release behaviors. Infrared spectroscopic study confirmed the absence of any drug-polymer interaction. Differential scanning colorimetric analysis revealed that the drug was molecularly dispersed in the chitosan microspheres matrices showing rough surface, which was confirmed by scanning electron microscopy study. The mean particle size and entrapment efficiency were found to be varied by changing various formulation parameters. The *in vitro* release profile could be altered significantly by changing various formulation parameters to give a sustained release of drug from the microspheres. The kinetic modeling of the release data indicate that trimetazidine hydrochloride release from the chitosan microspheres follow anomalous transport mechanism after an initial lag period when the drug release mechanism was found to be fickian diffusion controlled.

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| 12. | Research journal of Pharmaceutical, Biological and Chemical Sceinces, vol.no. 1, issue to, 2010 | Kavitha K, Sudhir K Yadav, Tamizh Mani T | The need of floating drug delivery system : A Review |

**Abstract:**

The floating drug delivery systems have been extensively used to improve therapy with several drugs. However during development process several difficulties are faced such as inability to restrain and localize the system within desired region of the GIT and its variable as per gastric emptying process. The variability may cause unpredictable bioavailability and time to achieve peak plasma levels. On the other hand, incorporation of the drug in a controlled release gastroretentive dosage forms (CR-GRDF) which can remain in the gastric region for several would significantly prolong the gastric residence time of drugs and improve bioavailability, reduce drug waste, and enhance the solubility of drugs that are less soluble in high pH environment. This FDDS provides local delivery to specific region like stomach and proximal small intestine and it's also shows better bioavailability and improved therapeutic activity and substantial benefits to patients. The purpose of this paper is to review the recent literature and current technology used in the development of floating drug delivery system.

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| 13. | International journal of Pharm Tech research, Vol. no. 3, issue 2, 2010. | Basu S.K, Kavitha K, Rupesh Kumar M. | Preparation and evaluation of Trimetazidine Hydrochloride microspheres using Chitosan |

**Abstract:**

Microspheres of Trimetazidine Hydrochloride (TZ) were prepared by coacervation method without the use of chemical cross–linking agents such as glutaraldehyde to avoid the toxic reactions and other undesirable effects of the chemical cross-linking agents. Alternatively, ionotropic gelation was employed by using sodium-tripolyphosphate (Na-TPP) as cross linking agent. Chitosan was used as polymer. All the prepared microspheres were subjected to various physico-chemical studies, such as drug-polymer compatibility by Thin Layer Chromatography (TLC) and Fourier Transform Infrared Spectroscopy (FTIR), surface morphology by scanning electron microscopy (SEM), frequency distribution, encapsulation efficiency by High Peformance Thin Layer Chromatography (HPTLC), in-vitro drug release characteristics and release kinetics. TLC and FTIR studies indicated no drug-polymer incompatibility. Surface smoothness of microspheres was increased by increasing the polymer concentration, which was confirmed by SEM. As the drug to polymer ratio was increased, the mean particle size (MPS) of TZ microspheres was also increased. A maximum of 80% of drug entrapment efficiency was obtained by the method employed. All the MS showed zero order release kinetics followed by a Fickian diffusion mechanism. From the above data it was concluded that it may be possible to design a controlled drug delivery system for the prolonged release of TZ, improving therapy by possible reduction of time intervals between administrations.

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| 14. | Research journal of Pharmacy and Technology, Vol no. 3, issue 3, 2010 | Sanat Kumar Basu, Kunchu Kavitha, Mani Rupesh Kumar | Formulation and evaluation of Tramadol Hydrochloride microspheres for oral delivery |

**Abstract:**

Microspheres (MS) of Tramadol Hydrochloride (TM) were prepared by coacervation method without the use of chemical cross–linking agent (glutaraldehyde) to avoid the toxic reactions and other undesirable effects of the chemical cross-linking agent. Alternatively, ionotropic gelation was employed by using sodium-tripolyphosphate (Na- TPP) as cross linking agent. Chitosan was used as polymer. All the prepared microspheres were subjected to various physico-chemical studies, such as drug-polymer compatibility by thin layer chromatography (TLC) and Fourier Transform Infrared Spectroscopy (FTIR), surface morphology by scanning electron microscopy (SEM), frequency distribution, encapsulation efficiency by High Peformance Thin Layer Chromatography (HPTLC), in-vitro drug release characteristics and release kinetics. TLC and FTIR studies indicated no drug-polymer incompatibility. Surface smoothness of MS was increased by increasing the polymer concentration, which was confirmed by SEM. As the drug to polymer ratio was increased, the mean particle size (MPS) of TM microspheres was also increased. A maximum of 87% of drug entrapment efficiency was obtained by the method employed. All the MS showed initial burst release followed by a Fickian diffusion mechanism. It is possible to design a controlled drug delivery system for the prolonged release of TM, improving therapy by possible reduction of time intervals between administrations.

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| 15. | Scientia pharmaceutica, vol. no. 78, 2010 | Sanat Kumar Basu, Kunchu Kavitha, Mani Rupesh Kumar | Evaluation of Ketorolac Tromethamine microspheres by Chitosan/Gelatin B complex coacervation |

**Abstract:**

Microspheres (MS) of Ketorolac Tromethamine (KT) for oral delivery were prepared by complex coacervation (method-1) and simple coacervation (method-2) methods without the use of chemical cross–linking agent (glutaraldehyde) to avoid the toxic reactions and other undesirable effects of the chemical cross-linking agents. Alternatively, ionotropic gelation was employed by using sodium-tripolyphosphate (Na-TPP) as cross linking agent. Chitosan and gelatin B were used as polymer and copolymer respectively. All the prepared microspheres were subjected to various physico-chemical studies,such as drug-polymer compatibility by Thin Layer Chromatography (TLC) and Fourier Transform Infra Red Spectroscopy (FTIR), surface morphology by Scanning Electron Microscopy (SEM), frequency distribution, encapsulation efficiency, in-vitro drug release characteristics and release kinetics. The physical state of drug

in the microspheres was determined by Differential Scanning Calorimetry (DSC) and X-ray powder Diffractometry (XRD). TLC and FTIR studies indicated no drug-polymer incompatibility. All the MS showed release of drug by a fickian diffusion mechanism. DSC and XRD analysis indicated that the KT trapped in the microspheres existed in an amorphous or disordered-crystalline status in the polymer matrix. It is possible to design a controlled drug delivery system for the prolonged release of KT, improving therapy by possible reduction of time intervals between administrations.

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| 16. | International journal of Pharmaceutical and Biomedical research, Vol. no. 1, issue 2, 2010 | Anoop Kumar Singh, R. Panner Selvam, T. Sivakumar I | solation, Characterisation and formulation properties of a new plant gum obtained from mangifera indica |

**Abstract:**

This study elucidated the physical, thermal, sorption and functional properties of a gum obtained from the stem of mangifera indica were characterized viz. elemental analysis, Fourier transmittance infra red, particle size analysis, thermo gravimetric analysis, differential scanning colorimetry, scanning electron microscopy and X-ray powder diffraction. Mangifera indica gum had a glass transition temperature (Tg) and melting peak of 90 and 318.795°C, respectively. This material showed a 14.59 % loss in weight at 200oC. The sample had peaks at approximately 21o, 29o, and 39o 2θ degrees of 2-theta (θ) in the X-ray powder diffraction pattern. Elemental analysis showed that gum of mangifera indica contains 35.62, 6.12, 56.57 and 1.67% of carbon, hydrogen, oxygen and nitrogen, respectively. The results obtained in this study establish the fundamental characteristics of mangifera indica gum. The in vitro drug release was more than 90 % at 30 min. Tablets with 5% w/w binder concentration showed optimum results than standard binder, thus conclusion was drawn that mango gum was found to be useful for the preparation of uncoated tablet dosage form.

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| 17. | 2. International journal of Pharm Tech research, Vol. no. 2, issue 3, 2010 | Anoop Kumar Singh, Vipul Kumar Shingala, R. Panner Selvam, T.Sivakumar | Evaluation of mangifera indica gum as tablet binder |

**Abstract:**

The aim of the present study is to evaluate the gum of mangifera indica (mango) as a tablet binder employing paracetamol as a model drug. Natural gums are economic, easily available and found useful as tablet binder. To the best of our knowledge, no significant work has been reported on mango gum as a tablet binder. Paracetamol tablets were prepared by wet granulation technique using mangifera indica gum as a tablet binder. The prepared tablets were evaluated for physico chemical characteristics. The friability of the tablets ranges from 1.12 to 0.26 % and the disintegration time from 3 to 8 min. The binding efficacy of the mangifera indica gum was compared with the standard binder gum acacia at similar concentration (5% w/w). The tablets hardness prepared from mangifera indica gum varies from 6.3 to 6.8 kg/cm2 which are comparable with the standard binder, gum acacia (4.8 kg/cm2). In conclusion, MIG could be used well as a binding agent in the formulation of tablet dosage forms.

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| 18. | International Journal of Pharmaceutical and Biomedical research, Vol. no. 1, issue 1, 2010 | R. Panner Selvam, Anoop Kumar Singh, T.Sivakumar | Transdermal drug delivery systems for antihypertensive drugs – A Review |

**Abstract:**

Hypertension is one of the largest deaths causing disease for the mankind. Since it is a chronic disease it necessitates long term treatment. The disadvantages of antihypertensive drugs such as more frequent of administration, extensive first pass metabolism and variable bioavailability, make it is an ideal candidate for transdermal drug delivery systems. This article is dedicated to the review of antihypertensive transdermal patches in the perspective of enhancing the bioavailibity as well as in improving the patient compliance. The various antihypertensive drugs considered in the review includes timolol maleate, nicardipine hydrochloride, captopril, atenolol, metoprolol tartrate, clonidine, indapamide, labetolol, pinacidil, verapamil hydrochloride, nitrendipine, nifedipine, nicorandil, propranolol hydrochloride, diltiazem hydrochloride, amlodipine besilate, carvedilol and lisinopril. Clonidine was the first antihypertensive drug developed in the

transdermal form. Currently a number of antihypertensive transdermal patches are introduced in to the pharmaceutical market. Most of the reported methods in the literature employed solvent evaporation method or solvent casting method for the preparation of transdermal patches. Depending on the release required over a period of time, the concentrations of polymer, plasticizer and penetrant were varied.

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| 19. | International Journal of Pharmaceutical and Biomedical research, Vol. no. 1, issue 1, 2010 | A.Shivaraj,<br>R. Panner Selvam,<br>T.Tamizh Mani,<br>T. Sivakumar | Design and evaluation of transdermal drug delivery of ketotifen fumarate |

**Abstract:**

The purpose of this research work was to develop and evaluate matrix-type transdermal therapeutic system containing Ketotifen fumarate with different ratios of hydrophilic and hydrophobic polymeric combinations by the solvent evaporation technique. The physicochemical compatibility of the drug and the polymers was studied by infrared spectroscopy. The results suggested no physicochemical incompatibility between the drug and the polymers. Seven transdermal patch formulations (F1, F2, F3, F4, F5, F6 and F7) consists of Hydroxypropyl methylcellulose E5 and Ethyl cellulose in the ratios of 10:0, 0:10, 1:9, 2:8, 3:7, 4:6 and 5:5, respectively were prepared. All formulations carried 5 % v/w of dimethyl sulfoxide as penetration enhancer and 10 % v/w of dibutyl phthalate as plasticizer in chloroform and methanol (1:1) as solvent system. The prepared transdermal patches were evaluated for in vitro release, moisture absorption, moisture loss and mechanical properties. The diffusion studies were performed by using modified Franz diffusion cells. The formulation, F1 (Hydroxypropyl methyl cellulose E5 alone) showed maximum release of 95.521 ± 0.982 % in 8 h, where as F2 (Ethyl cellulose alone) showed maximum release of 67.078 ± 1.875 % in 24 h. The formulation, F7 with combination of polymers (1:1) showed maximum release of 86.812 ± 0.262 % in 24 h, emerging to be ideal formulations for Ketotifen fumarate. The results followed Higuchi kinetics (r2), and the mechanism of release was diffusion mediated. The developed transdermal patches increase the efficacy of Ketotifen for the therapy of asthma and other allergic conditions.

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| 20. | Research journal pharmacy and technology, 2010, 3(3), 770-772. | V Reddy Panditi,<br>C. Jose Gnana Babu,<br>K.P.Channa Basavaraj | Validated RP- HPLC Method for the Quantitation of Stavudine in Bulk and Pharmaceutical Dosage Forms. |

**Abstract:**

A simple, specific, accurate, precise and sensitive Reverse Phase High Performance Liquid Chromatographic method has been developed for the quantitation of Stavudine in both pure and pharmaceutical dosage forms. A Venusil XBP C-18, 5 m column having 250 × 4.6 mm internal diameter in isocratic mode with mobile phase containing 0.01M Ammonium acetate buffer: Methanol (60: 40). The flow rate was 1.0 ml / min and the effluents were monitored at 265 nm. The retention time was 3.65 min. The linearity was in the range of 25-75 mcg / ml. This method was validated for linearity, precision, and limit of detection, limit of quantitation, accuracy, ruggedness and robustness. Statistical analysis proves that the method is reproducible and selective for the estimation of the said Drug.

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| 21. | Research journal pharmacy and technology, 2010, 3(3), 773-775. | CH Sharada,<br>C Jose Gnana Babu,<br>K.P.Channa Basavaraj. | Validated RP- HPLC Method for the Quantitative Estimation of Zidovudine in Bulk and Pharmaceutical Dosage Forms. |

**Abstract:**

A simple, specific, accurate, precise and sensitive reverse phase High Performance Liquid Chromatographic method has been developed for the quantitative estimation of Zidovudine in both pure and pharmaceutical dosage forms. A Venusil XBP C- 18, 5 m column having 250 × 4.6 mm internal diameter in isocratic mode with mobile phase containing Water: Methanol (50:50). The flow rate was 1.0 ml/min and the effluents were monitored at 266 nm. The retention time was 4.47 min. The linearity was in the range of 25-75 g/ml. This method was validated for linearity, precision, and limit of detection, limit of quantitation, accuracy, ruggedness and robustness. Statistical analysis proves that the method is reproducible and selective for the estimation of the said drug.

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| 22. | Research journal pharmacy and technology, 2010, 3(4), 781-783. | M.R. Santhosh Kumar, C. Jose Gnana Babu, K.P.Channa Basavaraj. | Validated RP- HPLC Method for the Quantitation of Nebivolol in Bulk and Pharmaceutical Dosage Forms. |

**Abstract:**

A simple, specific, accurate, precise and sensitive Reverse Phase High Performance Liquid Chromatographic method has been developed for the quantitation of Nebivolol in both pure and pharmaceutical dosage forms. A Phenomenex Gemini C-18, 5 m column having 250 x 4.6 mm internal diameter in isocratic mode with mobile phase containing Acetonitrile : 50mM Ammonium acetate buffer (60 : 40 v/v) and adjust the pH to 3.5 by using glacial acetic acid. The flow rate was 1.0 ml / min and the effluents were monitored at 282 nm. The retention time was 3.783 min. The linearity was in the range of 20-100 g / ml. This method was validated for linearity, precision, and limit of detection, limit of quantitation, accuracy, ruggedness and robustness. Statistical analysis proves that the method is reproducible and selective for the estimation of the said drug.

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| 23. | Research journal pharmacy and technology, 2010, 3(3), 781-783. | Y Bhargava Reddy, C Jose Gnana Babu, K.P.Channa Basavaraj. | Validated RP- HPLC Method for the Quantitative Estimation of Tramadol in Bulk and Pharmaceutical Dosage Forms. |

**Abstract:**

A simple, specific, accurate, precise and sensitive Reverse Phase High Performance Liquid Chromatographic method has been developed for the quantitative estimation of Tramadol in both pure and pharmaceutical dosage forms. A Phenomenex RP C- 18, 5 m column having 250 × 4.6 mm internal diameter in isocratic mode with mobile phase containing Triflouroacetic acid: Acetonitrile (81:19). The flow rate was 1.5 ml/min and the effluents were monitored at 270 nm. The retention time was 3.615 min. The linearity was in the range of 0.25 - 0.75 mg/ml. This method was validated for linearity, precision, specificity, limit of detection, limit of quantitation, accuracy, ruggedness and robustness. Statistical analysis proves that the method is reproducible and selective for the estimation of the said drug.

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| 24. | International Journal of ChemTech Research, 2010, 2(2), 1194-1198. | G Thanusha, C.Jose Gnana Babu, K.P.Channa Basavaraj | Validated RP- HPLC Method for the Quantitative Estimation of Valsartan in Bulk and Pharmaceutical Dosage Forms |

**Abstract:**

A simple, specific, accurate, precise and sensitive Reverse Phase High Performance Liquid Chromatographic method has been developed for the quantitation of Valsartan in both pure and pharmaceutical dosage forms. A Venusil XBP C-18, 5 m column having 250 × 4.6 mm internal diameter in isocratic mode with mobile phase containing 0.1M Phosphate buffer: Acetonitrile (20: 80). The flow rate was 1.0 ml / min and the effluents were monitored at 273 nm. The retention time was 4.95 min. The linearity was in the range of 50-150 mcg / ml. This method was validated for linearity, precision, limit of detection, limit of quantitation, accuracy, ruggedness and robustness. Statistical analysis proves that the method is reproducible and selective for the estimation of the said drug.

# M.S.RAMAIAH COLLEGE OF PHARMACY

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| Sl. No. | Name of Journal, Volume No. Issue and Period | Author/s | Title of the article |
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| 1. | Pure & Appl Phys Vol.21 No.4 Oct- Dec 2009 | Dr. Khan Tabassum | Compartative study of spirometric and Plethysmographic Values in Age Group 13 to 17 Years in Marathwada Region with Western Predicted Values |

**Abstract:**

Murva is one of the controversial drugs used in the ayurvedic medicine. In the present study two botanical sources of Murva, viz.wattakaka volubilis and maerna oblongifolia were tested for antipyretic activity by yeast-induced pyrexia in wistar albino rats. Alcohol and aqueous extracts of both species significantly reduced the elevated rectal temperature in febrile rats within 30min of their administration. The results of these studies support the traditional use of these two botanical sources of the drug murva in the treatment of fever.

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| 2. | International Journal of Pharma. Research & Development, 2010, Vol.1, Issue 11 | C.H.S.Venkataramana, Manish Gupta, V.Madhavan | Synthesis of novel pyrazolidinedione substituted 4- quinolone derivatives and their biological activity. |

**Abstract:**

Esterification of P-amino benzoic acid gave benzocaine(ethyl p-aminobenzoate), which undergoes Conrad-Limpach reaction to give 2-methyl-4-oxo-1,4 dihydro-quinoline-6-carboxylic acid ethyl ester(3), it was further treated with different substituted phenylhydrazines to give the corresponding phenylhydrazides(4A-4H). Later these compounds were treated with diethyl malonate in presence of acetic acid to get 1-(2-methyl-4-oxo-1,4-dihydro quinolone-6-carbonyl)-2-substituted phenyl)-pyrazolidine-3,5-diones(5A-5H). The synthesized compounds were characterized by IR, H NMR and mass spectral data. All the newly synthesized compounds have been evaluated for their antimicrobial activity against gram positive and gram negative bacteria and fungi and in-vitro anti-inflammatory activity.

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| 3. | International Journal of Research in Ayurveda and Pharmacy, 1(2), Nov-Dec, 2010. | R.Deveswaran, Sharon Furtado, S.Bharath, Sindhu Abraham, B.V.Basavaraj, V. Madhavan | Isapghol mucilage as a potential natural suspending agent |

**Abstract:**

Mucilage can be used to suspend insoluble substances in liquids and it helps in preventing sedimentation due to its colloidal nature and viscosity. The inclusion of stabilizer or suspending agent in the pharmaceutical suspension reduces the rate of settling and permits easy redispersion of any settled particulate matter both by protective colloidal action and by increasing the consistency of the suspending medium. The present study deals with isolation of a natural pharmaceutical excipient from the seeds of the plantago ovata which can be used as an effective suspending agent. The compatibility between the drug and isolated mucilage powder was found to be good by I.R spectral studies. Suspensions of nimesulide were prepared and the properties were compared with that of marketed product. The sedimentation behavior of formulation F3 was found to be similar with that of the marketed product. All the formulations were redispersed uniformly without any deposits. The average size of the particles in the suspension was found to be 36.3 $\mu$m and the minimum particle size were 14.7 and 67.4 $\mu$m respectively. The drug content of all the formulations was in the range of 96-99.3 %. The rheological study confirmed the shear thinning nature of the suspension. The present study confirms that isapgol mucilage powder can be used as an effective suspending agent in oral liquid formulations. But utilizing the same in large scale manufacturing needs to be studied in future.

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| 4. | International Journal of Pharmaceutical and Biological Archives, 2010, 1(4). | R.Deveswaran, S.Bharath, Sharon Furtado, Sindhu Abraham, B.V.Basavaraj, V.Madhavan I | solation and evaluation of tamarind seed polysaccharide as a natural suspending agent |

**Abstract:**

The tamarind seed polysaccharide (TSP) possesses properties like high viscosity, broad pH tolerance, no carcinogenicity, mucoadhesive nature and biocompatibility. Since suspensions are thermodynamically unstable, it requires a suspending agent which reduces the rate of settling and permits easy redispersion of any settled particulate matter. So an attempt was made to use this polysaccharide as suspending agent in the formulation of nimesulide suspension. The formulations were prepared and compared with the marketed product. All the formulations were redispersed uniformly without any deposits. The average size of the particles in the suspension was found to be 35.4 $\mu$m and the minimum and maximum particle size were 17.3 and 70.0 $\mu$m respectively. The drug content of all the formulations was in the range of 95-98.3 %. The rheological study of the formulation F3 indicated that as the RPM increases the viscosity decreases, confirming the shear thinning nature of the suspension. The suspension was found to be stable during the entire period of study. Hence the present work confirms that the isolated TSP powder can be used as an effective suspending agent. But feasibility of isolation of TSP powder in large scale needs to be studied in future.

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| 5. | Asian Journal of Traditional Medicines, 2010, 5(5) | Dr.V.Madhavan, Poonam Shah, Anita Murali, S.N.Yoganarasimhan | In Vitro and in vivo antioxidant activity studies on the roots of *Toddalia asiatica*(L.) Lam. (*Rutaceae*) |

**Abstract:**

*Toddalia asiatica* is used in the treatment of diseases like paralysis, malarial and intermittent fever, dyspepsia, colic, diarrhea, cough, bronchitis, nausea, wounds, contaminated ulcers, epilepsy, gonorrhea and general debility. It is known as kanchana in Sanskrit. In the present study the in vitro and in vivo antioxidant study of alcoholic and aqueous extracts of the roots of Toddalia *asiatica* was investigated. The test extracts exhibited potential scavenging effects on DPPH, hydrogen peroxide and nitric oxide free radicals. The in vivo antioxidant activity was investigated using wistar albino rats. Oxidative stress was induced by oral administration of $CCl_4$(0.5 ml/p.o) for seven days and the $CCl_4$ decreased hepatic levels of reduced glutathione, proteins, antioxidant enzymes viz. peroxidase, catalase, superoxidedismutase, and increased the formation of malonodialdehyde in untreated positive control animals. *Toddalia asiatica* extracts significantly increased the hepatic levels of reduced glutathione, proteins, antioxidant enzymes and decreased lipid peroxidation. This shows that the free radical scavenging/antioxidant activity of *T. asiatica* roots may be responsible for its therapeutic effect on tissue damage.

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| 6. | International Journal of Pharmaceutical Sciences, 2010, May-Aug, 2(2) | V.Madhavan, Mohamed Sajidullah, S.N.Yoganarasimhan, Anita Murali | Anti-hyperglycemic activity of alcohol extract of leaves of *Cocculus hirsutus*(Linn.) on alloxan induced diabetic rats |

**Abstract:**

In ayurvedic system of medicine the use of *Cocculus hirsutus*(Linn.) has been described in diverse diseases. The roots and leaves are reported to possess anti-microbial, laxative, demulcent, diuretic, cardio tonic and anti-diabetic activity. The chief constituents found in *Cocculus hirsutus* are isoquinoline alkaloids like Cohirsine,Cohirsininie, Cohirsitinine, Hirsutine and Jamtine. Anti-diabetic activity using Alloxan induced model was performed in rats of either sex. The alcohol extract of leaves was tested with Alloxan induced diabetic rats. Blood glucose levels were evaluated on the $7^{th}$, 14th, and $21^{st}$ day. On $21^{st}$ day glycosylated hemoglobin estimation was performed, to identify the plasma glucose concentration over maintenance of blood glucose level in diabetic rats. In this study it as found that, the alcohol extracts of *Cocculus hirsutus* at dose level of 500 and 1000 mg/kg showed significant hypoglycemic activity in comparison with standard drug glibenclamide. The p value $< 0.001$, is considered extremely significant when performed using in one way analysis of variance (ANOVA).

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| 7. | International Journal of Pharma. Research & Development, 2010, Vol.2, Issue 4 | M.Narayana Babu, Mondal Sudip, V.Madhavan | Synthesis and biological studies of 1-(4 ' -(3-chloro-4- (substituted)-2-oxo-azetidin-1-yl)-biphenyl-4-yl)-iH-quinolin-2- one derivatives |

**Abstract:**

A new series of 1-(4'-(3-chloro-4-(substituted)-2-oxo-azetidin-1-yl)-biphenyl-4-yl)-iH-quinolin-2-one derivatives was synthesized. The structures of the synthesized compounds were confirmed on the basis of the spectral and analytical data. The compounds were screened for anti-bacterial and anti-fungal activities. Some of the analogues synthesized showed moderate to good anti microbial activity.

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| 8. | International Journal of Drug Formulation and Research, 2010, Vol.1(II), Oct-Nov. | Anita Murali, Purnima Ashok, V.Madhavan | Free radical scavenging effect of leaf of *hemidesmus indicus* (l.) R. Br. Var. Pubescens (w.&a.) Hk.f.(periplocaceae) - an in vitro analysis : a research |

**Abstract:**

To evaluate antioxidant property of leaf of *Hemidesmus indicus* (L.) R. Br.var. *pubescens* (W. & A.) Hk.f. by *in vitro* methods. Methanol (HILM) and aqueous (HILA) extracts of the drug were evaluated for in vitro antioxidant activity against DPPH, ABTS, nitric oxide, hydrogen peroxide and superoxide radicals. HPTLC fingerprinting studies were also performed on both extracts. Both HILM and HILA exhibited free radical scavenging effects against DPPH, ABTS, nitric oxide and superoxide radicals, whereas they were not able to scavenge hydrogen peroxide radical to any appreciable extent. The study revealed that leaf extracts of *H. indicus* var. *pubescens* possess strong antioxidant and free radical scavenging effect in different in vitro systems. Further studies can be undertaken to evaluate the *in vivo* antioxidant potential of these extracts in various animal models.

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| 9. | International Journal of PharmTech Research, 2010, 2(4), Oct-Dec | R.Deveswaran, R.Manavalan, V.Madhavan, S.Bharath | Formulation and optimization of ketoprofen microspheres using response surface methodology |

**Abstract:**

In the present study, a central composite design based on response surface method was employed to prepare experimental trials using different ratio of drug and polymer at varying r/min. to optimize the microsphere formulations. Formulations were prepared by emulsion-solvent evaporation method using a mixture of dichloromethane: chloroform (2:3) as solvent system for the drug and polymer. The solution was added to 0.5%w/v sodium carboxy methyl cellulose solution and stirred at varying r/min. until all the organic solvent was evaporated completely resulting in the formation of microspheres. The prepared ketoprofen microspheres were discrete and free flowing and indicated that the concentration of polymer and stirring rate significantly influenced the formation of microspheres and ketoprofen entrapment while concentration of the polymer had a significant positive impact on ketoprofen release over a period of 12 hours and the stirring rate have minimal effect on the drug release. The results demonstrated a good relationship between the predicted and experimental values, confirming the validity of the model. Drug release mechanism indicated a best fit model of zero order release. The optimized final formulation KEC1 showed better analgesic and anti-inflammatory activity as compared with standard drug ketoprofen. The optimized formulation was found to be stable when subjected to accelerated and long term stability studies as per ICH guidelines. The results obtained indicated that response surface methodology can be successfully used to analyze the effect of formulation variables and develop an optimized formulation thereby reducing the number of trials, time and cost of formulation development.

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| 10. | International Journal of Pharma and Biosciences, 2010, 1(4), Oct- Dec | BV Suma, Judy Jays, Ankit Rochani, Surender Kumar, V. Madhavan QSAR, | QSAR, ADME and QSTR Studies of some synthesized anti-cancer 2-indolinone derivatives |

**Abstract:**

The present study explores the utility of Quantitative Structure Activity Relationship (QSAR), insilico ADME studies and Quantitative Structure Toxicity Relationship (QSTR) for the established 2-indolinone lamotrigine Schiff base derivatives. Here, we developed 2D QSAR models for (n=6) 2-indolinone lamotrigine Schiff base derivatives as cytotoxic agents using the CTC50 values of these compounds obtained by using MTT and SRB bioassay procedure for HEp-2 and DLA cell lines. Multiple regression equations developed using the calculated physicochemical parameters showed that for HEp-2 cell lines, SRB bioassay procedure gave a better correlation between Van der Waals energy, shape flexibility index, surface area and anti-cancer activity ($r2>0.95$). Similarly for DLA cell lines, MTT bioassay gave better correlation between HOMO (Highest Occupied Molecular Orbital), LogP, molecular refractivity and anti-cancer activity ($r2>0.99$). Also, the in-silico ADME and QSTR evaluation showed that structural features of 5a compound had better pharmacokinetic and toxicity profile.

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| 11. | International Journal of ChemTech Research, 2010, 2(4), Oct-Dec | B.V.Suma, Ankit Rochani, CHS Venkataramana, Judy Jays, V.Madhavan | Synthesis, characterization, invitro antibacterial, anti- inflammatory evaluations of Novel 4-quinolone containing pyrazolidinedione derivatives |

**Abstract:**

There has been a biggest problem of bacterial resistance ever since the development of anti-bacterial agents. The present research work focuses on the microwave assisted solvent less synthesis combined with conventional stirring and refluxation methods to form some novel substituted 4-quinolone pyrazolidinedione derivatives. The characterization of n=9 derivatives was carried out using I.R, 1H NMR and mass spectral analysis. The percentage yield of final compounds was found to be 22.15 to 69.68. Purity of the compounds was checked by using TLC and elemental analysis. These compounds showed a considerable anti-bacterial activity against *S. aureus, B. subtilis, Klebesiella pneumoniae and Proteus vulgaris* and anti-inflammatory activity using *Invitro* testing methods compared to Ciprofloxacin, Amoxicillin and Ibuprofen respectively.

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| 12. | International Journal of Pharmaceutical Sciences Review and Research, 2010, 5(2), Nov-Dec | Sindhu Abraham, Basavaraj BV, S.Bharath, R.Deveswaran, Sharon Furtado, V.Madhavan | Formulation and optimization of sublingual tablets of rabeprazole sodium |

**Abstract:**

The objective of this research was to develop and optimize sublingual tablets of Rabeprazole Sodium, a class of Proton pump inhibitors which is effective in the treatment of acid peptic disorders. The tablets were prepared by wet granulation method based on a central composite design. The formulation variables included quantity of crospovidone, (X1), and quantity of croscarmellose Sodium (CCS), (X2), while the response variables determined were wetting time and *In vitro* dispersion time. A quadratic model was used to quantitatively evaluate the main effects and interaction. Surface response plots are presented, to graphically represent the effect of the independent variables on the wetting time and disintegration time. The hardness of all the formulations was in the range 3.0 – 4.0 kg/cm2. The percentage friability of all the formulations was found to be not more than 0.6 %. In all the formulations, the drug content was found to be uniform among the different batches of tablets and ranged from 97.37 % to 100.51 % of the theoretical value. The average percentage deviation for 20 tablets from each batch was within the acceptable pharmacopoeial limits. An optimized tablet formulation was prepared which provided a short wetting time of 27 sec and *Invitro* dispersion time of 32 sec. The results indicated that, the amount of Crospovidone and Croscarmellose Sodium significantly affected the dependent variables wetting time and disintegration time. The observed responses were in close accord with the predicated values of the optimized formulation, thereby demonstrating the feasibility of the optimization procedure in developing sublingual tablets.

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| 13. | International Journal of Pharmaceutical Sciences Review and Research, 2010, 5(2), Nov-Dec | Basavaraj BV, Narayanacharyulu. R, V.Madhavan | Microballoons of famotidine: A non effervescent gastroretentive controlled drug delivery system using eudragit S-100 |

**Abstract:**

Floating microballoons of famotidine for improving the bioavailability by prolongation of gastric residence time was prepared by emulsion solvent diffusion method using Eudragit - S100 polymer in ethyl alcohol and dichloromethane organic solvent system. $3^2$ response surface methodology was followed to study the influence of rate of stirring, polymer concentration and temperature on the drug entrapment and drug release features. Better entrapment and drug release was attained at lower possible polymer concentration and stirring rate at 40°C. The drug encapsulation was found to be 74 against the predicted 71 %. The formation of a sphere and hollow within the sphere was confirmed by SEM photographs. The micromeritic properties indicated better flowability and packability of the spheres. The *in vitro* percentage buoyancy was around 92 ± 0.18 with good floatability up to 12 h. *In vitro* dissolution profile showed prolonged release of drug up to 91 % over 12 h demonstrating non-fickian diffusion mechanism of drug release. Acute oral toxicity studies as per OECD guidelines performed on wistar rats showed no mortality with normal haematological and biochemical values. Histopathological studies also ruled out prevalence of any toxicity. Residual solvent analysis for dichloromethane and ethanol by gas chromatography was found to be within the limits as prescribed by ICH guidelines for impurities. Long term and accelerated stability studies showed the intactness of the drug without any significant change in the physical properties.

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| 14. | International Journal of Pharmacy & Technology. 2, (4), 2010. | A.Murali, P.Ashok, V.Madhavan | Antioxidant effect of roots and rhizomes of *smilax zeylanica* L. an in vivo study. |

**Abstract:**

To evaluate the antioxidant property of *smilax Zeylanica L.* using $CCL_4$ hepatotoxicity in rats. Hepatotoxicity was induced in Wistar albino rats by administration of $CCl_4$ (0.5ml/kg/day p.o for 7 days). Methanol extract of S. *zeylanica* roots and rhizomes (SZRM) was administered to the experimental animals at doses 200,400 and 600mg/kg/day p.o for 7 days. Antioxidant effect was assed by the estimation of hepatic levels of SOD, catalase, peroxidase, reduced glutathione, total proteins and malondialdehyde. In the methanol extract treated animals, the toxic effect of $CCL_4$ was controlled by the restoration of the levels of the levels of hepatic antioxidant enzymes as compared to the positive control and standard drug silymarin-treated groups. The methanol extract at different doses exhibited significant increase in SOD, peroxidase, glutathione and proteins. The level of malondialdehyde was also significantly reduced. The study revealed that the S. *Zeylanica* posses strong antioxidant property.

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| 15. | Archives Pharmaceutical sciences & Research. 2(1), 2010. | R.Devesran, S.Bharath, Sharon Furtado, Sindhu Abraham, B.V. Basavaraj, V.Madhavan. | Evaluation of disintegrant properties of plantago ovata mucilage in comparison with other super disintegrants. |

**Abstract:**

Dispersible tablets are intended to dissolve or disintegrate rapidly in the mouth for which various natural and synthetic disintegants are included in the formulation The disintegrant property of isolated mucilage powder of Isapghula was studied by formulating dispersible tablets of famotidine and comparing its efficiency with other commercially available super disintegrants. Hardness of the tablet was to be in the range of 4-5kg/cm$^2$. The wetting time was found to be 18 seconds for the tablet formulation prepared with isolated mucilage powder. The tablet showed 98.9-99.4% of the labeled amount of drug, indicating uniformity in drug content. All the formulations were found to be within acceptable limits of official weight variation test and they exhibited good friability. The *in-vitro* dissolution profile exhibited maximum drug release from all the formulations. The result of weight variations, content uniformity, disintegration time, hardness, friability and wetting time of the formulations prepared with isolated mucilage powder from Plantago ovata are similar to those formulations prepared using other superdisintegrants. Thus the isolated mucilage powder can be effectively used as disintegrant in tablet formulations.

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| 16. | Indian Journal of Natural Products and Resources 1(1), March 2010 | V Madhavan, Gajendra Singh Tomar, S N Yoganarsimhan , M.R Gurudeva | Pharmacognostical studies on *Flinkingeria nodusa* (Dalz,) Seindenf. Stem and pseudobulbs – A botanical source of the Ayurvedic drug Jivanti |

**Abstract:**

The Pharmacognostical evaluation of *Flinkingeria nodusa* (Dalz,) Seindenf. Stem and pseudo bulbs which were considered as one of the biological sources of the important ayurvedic drug *Jivanti* is presented. The study comprises taxonomic details, macro and microscopical characters of parts used, physico-chemical details, HPTLC profile of aqueous and alcohol extracts. This study will help in laying down pharmacopoeial standards for F. *nodusa.*

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| 17. | Indian Journal of Natural Products and Resources. 1(1), March 2010. | V Madhavan, Ranjt Damodhar Tijare, R. Mytheri, M.R Gurudeva S.N.Yoganarasimhan | Pharmacognostical studies on the root tubers of *Asparagus gonoclados* Baker-Alternative source for the Ayurvedic drug Shatavari. |

**Abstract:**

*Asparagus gonoclados* Baker is an important medicinal plant belonging to the family Lillaceae ( sensu lato). Many species of asparagus Linn. Including A.gonoclados are used as substitute for the well known ayurvedic drug, shatavari. Root tubers of shatavari possess adaptogenic, antioxidant, cooling, emollient, diuretic, galactagogue, nervine tonic, rejuvenating and stomachic properties; they are useful in treatment of diseases like diarrhoea,dysentery,dyspepstla,epilepsy,fatigue,inflammations,nervous disorders, tumours and tuberculosis. The present study provides taxonomy of the species, Pharmacognostical and physico-chemical details of the root tubers of A. gonoclados. This helps in laying down standardization and pharmacopoeial parameters. Presence of shatavarin IV in the alcohol and aqueous extracts is reported in this species for the first time.

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| 18. | Journal of Pharmacy Research 2010,3(10). | Anitha Murali, Purnima Ashok, V.madhavan, A.Raju. | In-vitro and in-vivo antioxidant activity studies on the leaves of *smilax Zeylanica* L.(smilacaceae) |

**Abstract:**

In the present study, invitro and in vivo antioxidant studies were performed on the leaves of smilax Zeylanica L. methanol and aqueous extracts of the drug were evaluated for invitro antioxidant activity using DPPH, hydrogen peroxide, ABTS, nitric oxide and superoxide free radicals. The plant extracts exhibited dose dependent scavenging effects aginst the different free radicals tested. The Methanol extract (SZLM) was subjected to in vivo antioxidant activity studies using CC4 induced Hepatotoxicity model in wistar albino rats. The extract (SZLM) exhibited significant increase in the levels of glutathione, tissue proteins AND ENZYMES VIZ. sod, catalase and peroxidase at different dose levels. The extent of lipid peroxidation was significantly reduced in the extract treated groups. Results were comparable with that of standard antioxidant silymarin.

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| 19. | Indian Journal of Natural Products and Resources. 1(3), september 2010. | V.Madhavan, H.T Hemalatha, M.R Gurudeva, S.N Yoganarasimhan. | Pharmacognostical studies on the rhizome and root of *smilax zeylanica Linn.*-A potential alternate source for the ayurvedic drug chopachinee. |

**Abstract:**

Chopachinee is an important ayurvedic drug used in several formulations and diseases. Smilax linn. Species are used as botanical source of chopachinee while the accepted source is smilax china linn. Smilax Zeylanica linn. a potential alternate source for chopachinee,

occurring in south india is pharmacognostically investigated in this paper. It is used in the treatment of abscesses, skin disorders, sores, swellings, venereal diseases and as a substitute for sarasaparilla. The present study comprises taxonomical, macroscopical, characters, physico-chemical and ultra-violet analysis besides chromatographic studies of the rhizome and root which not only help in the identification of the drug but also contribute towards establishing pharmacopoeial standards. HPTLC finger printing of diosgenin present in the drug is carried out to establish the biomarker compound.

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| 20. | Indian Journal of Traditional Knowledge, 9(4), October 2010. | V. Madhavan, Priyanka Goswami K, Gurudeva M.R, S.N Yoganarasimhan. | Pharmacognostical studies on the root of *Nothosaerva brachiata* wt.-a botanical source of the ayurvedic drug, pashanabheda. |

**Abstract:**

Pashanabheda is an important ayurvedic drug. Several species belonging to different families are used as the botanical source of pashanabheda while the accepted source is bergenia ciliate(HAW) sternb.The roots of nothosaerva Brachiata and microscopical characters,physicochemical and ultra-violet analysis besides chromatographic details of the root of N.brachiata, helps in the identification of the plant and the drug but also contribute towards establishing pharmacopoeial standards. HPTLC studies helps to identify the species in drug form and to establish the biomarker compound.

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| 21. | Scholars Research Library, Der Pharmacia Lettre, 2010, 2(6). | Basavaraj BV, Narayana charyulu R, Madhavan V. | Microballoons of famotidine: a non-effervescent gastroretentive controlled drug delivery system using *eudragit* L-100. |

**Abstract:**

A non-effervescent multiparticulate floating microballoons of famotidine using Eudragit - L100 polymer in ethyl alcohol and dichloromethane organic solvent system was prepared by emulsion solvent diffusion method for improving the bioavailability. 32 response surface central composite design was chosen to study the influence of rate of stirring, polymer concentration and temperature on the drug entrapment and drug release parameters. Better entrapment and drug release was achieved at a lower possible polymer concentration and stirring rate and especially at 40°C. The drug encapsulation was found to be 80 % against the predicted 76 %. The formation of a discrete sphere with a hollow was confirmed by SEM photographs. The micromeritic properties revealed better flowability and packability of the microballoons. The in vitro percentage buoyancy was around 86 ± 0.42 with good floatability upto 12 h. In vitro dissolution profile showed prolonged release of drug upto 92 % over 12 h demonstrating non-fickian diffusion mechanism of drug release. Acute oral toxicity studies performed as per OECD guidelines on wistar rats showed no mortality with normal haematological and biochemical values. Histopathological studies also supported the possibility of any toxicity on lower animal models. The mean gastric volume for control, famotidine and FAL-D1 was found to be 6.51 ± 0.199, 4.01 ± 0.130 and 3.93 ± 0.098 ml. Free acidity and total acidity for the optimized formulation by pylorus ligation method was found to be 48.16 ± 1.16 mEq/l/100g and 151.50 ± 1.505 mEq/l/100g respectively compared to 57.66 ± 2.27 and 180.33 ± 1.14 of control group, 44.83 ± 1.66 and 134.83 ± 1.424 mEq/l/100g of pure drug. Appreciable rise in the pH towards alkalinity 5.133 ± 0.202 of FAL-D1 substantiated the ulcer protection activity of the formulation. Residual solvent analysis for ethanol and dichloromethane by gas chromatography was found to be within the limits of ICH guidelines for impurities. Long term and accelerated stability studies showed the integrity of the drug without any significant changes in the physical properties. Thus microballoons of famotidine with acrylic polymer Eudragit L-100 could be an ideal novel floating dosage form for regulating the drug delivery into the upper part of the intestine with assured enhancement in oral bioavailability.

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| 22. | Pharmacologyonline, 3, 2010 | Anita Murali, Purnima Ashok, V.Madhavan | Antioxidant activity of roots of hemidesmus indicus Var. Pubescens – an *in vitro* study |

**Abstract:**

The antioxidant property of roots of *Hemidesmus indicus* (L.) R. Br. Var *pubescens* (W. & A.) Hk. f., was evaluated by *in vitro* methods. Methanol (HIRM) and aqueous (HIRA) extracts of the drug were evaluated for *in vitro* antioxidant activity against DPPH, ABTS, hydrogen peroxide, nitric oxide and superoxide radicals. HPTLC fingerprinting studies were also performed on both extracts. Both extracts exhibited similar scavenging effects against ABTS and superoxide radicals whereas against DPPH and nitric oxide, the methanol extract was more effective. The study revealed that extracts of *H. indicus* var. *pubescens* roots possess antioxidant and free radical scavenging effects. Further studies can be undertaken to evaluate the *in vivo* antioxidant potential of these extracts in various animal models.

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| Sl. No. | Name of Journal, Volume No. Issue and Period | Author/s | Title of the article |
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| 1. | International Journal of Current Pharmaceutical research (IJCPR), July, September 2010 2(3) 82-85. | Upendra Kulkarni, Basavarj S. Patil, Haripradanna R.C, Prashant A, Borgoankar M, G Hogade, Rabbani G | Formulation and development of fast dissolving Meloxican tablets bysolid dispersion technique: for the effective treatment of dental pain |

**Abstract:**

Guide lines for three months. The results revealed that tablets prepared by solid dispersion having drug to PVP ratio of1:4(P3),yielded the best result interms of dissolution rate. Stability studies revealed that upon storage tablets prepared by solid dispersion with PVP did not show any change in disintegration time after stability studies.

**Keywords:** Fast Dissolving Tablets, Meloxicam, Croscarmillose Sodium, Solid Dispersion.

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| 2. | International Journal of Current Pharmaceutical Research (IJCPR), August 2010,Vol I Issue 8 (suppl), 88- 92 | Basavarj S. Patil, Upendra Kulkarni, Parikh Bhavik | Formulatuion and evaluation of Diclofenac potassium matrix tablets |

**Abstract:**

The objective of the study was to develop HPMC matrix tablets for oral controlled/ sustained release of water soluble Diclofenac Potassium. Sustained release matrix tablets containing 100 mg of Diclofenac Potassium were developed using different drug polymer ratio of HPMC. Tablets were prepared by direct compression. Compressed tablets were evaluated for uniformity of weight, content of active ingredient, friability, hardness, thickness and *in–vitro* dissolution study. All tablets but one exhibited gradual and near completion sustained release for Diclofenac Potassium and 98.72 % released at the of 12 hours. The results of dissolution studies indicating that formulation D5 (drug to polymer 1:1.40) the most successful of the study, exhibited drug release pattern very close to theoretical release profile. A decrease in release kinetic of the drug was observed on increasing polymer ratio. Applying the exponential equation, all the tablets (except D5) showed diffusion dominated drug release. The mechanism of drug release from D5 was diffusion coupled with erosion.

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| 3. | Pharmakine ( A journal of Pharmaceutical Sciences) April-June 2010, vol2, Issue 4, 9-13 | Basavarj S.Patil, Prashant A, Borgankar P. V Swamy, Upendra Kulkarni, S. A durgad, Srinivas R Soodam, Prakash G. Korwar | Preparation and evaluation of Diclofenac potassium microcapsules by melt dispersion method |

**Abstract:**

In the present investigation, an attempt has been made to increase therapeutic efficacy, reduce frequency of administration, and improved patient compliance, by developing sustained release microcapsules of Diclofenac potassium. Diclofenac potassium was encapsulated with stearic acid, cetyl alcohol and paraffin wax by melt dispersion method using different core:coat ratios such as 1:2, 1:3, and 1:6. The microcapsules were evaluated for the drug content uniformity, particle size distribution, drug release properties and drug coating material interaction. Release of Diclofenac Potassium from the microcapsules was slow and spread over extended periods of time. Microcapsules prepared with stearic acid core:coat ratio of 1:2 gave satisfactory controlled release over a period of 8 hours. The mechanism of drug release was diffusion controlled and follows first order kinetics.

**Key words:** Diclofenac potassium, microcapsules, stearic acid, cetyl alcohol, paraffin wax.

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| 4. | Pharmakine ( A journal of Pharmaceutical Sciences) January- March 2010, vol 2, Issue 3, 5-9 | Basavarj S. Patil, Hariprasanna R C Prashant A. Borgaonkar, Upendra Kulkarni | Formulation and evlaution of diclofenac potassium tablets using starch and PVP K30 as binders |

**Abstract:**

The Objective of this work was to study the effect of binding agents like starch and PVp K30 on physical characteristics of granules and tablets of Diclofenac Potassium. Cicolfenac Potassium tablets were prepared by wet gganulation method using starch and PVP K30 as binders. The effect of binding agents Diclofenac Potassium granules were studied. The analysis of active constituents was followed by the study of weight variation, hardness, disintengration time, fribaliltiy and dissolution test of all tablet formulations. All the formulations comply with the weight variation test and friability values less than 1%. Hardness of the tablets wa significantly increased with increasing the concentration of the binders. The maximumdistntegraion time was 125 seconds and all tablets passed the dissolution. Granules exhibited angle of repose in the range of 26% - 27%. A good correclation between various physical parameters of granules and tablets was observed. The potato starch and PVP K30 showed better binding properties.

**Keywords :** diclofenac Potassium, Potato starch, PVP K30

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| 5. | Reserarch Journal of Pharmaceutical Biological & Chemical Sciences (RJPBCS) October- December 2010, Vol 1. Issue 4, 587-592 | Basavarj S. Patil, Upendra Kulkarni Parikh Bhavik, Srinicas R, Sooam, Prakash G. Korwar | Formulation and evaluation of mouth dissolving tablets of Nimesulide by new coprocessed technique |

**Abstract:**

Attempts were made to prepare mouth dissolving tablets of Nimesulide by direct compression method with a view to enhance patient compliance. The two superdisintegrants used in this study were Croscarmillose sodium and Sodium starch glycolate. The prepared batches of tablets were evaluated for uniformity of weight, thickness, hardness, friability, wetting time, water absorption ratio, disintegration time and dissolution study. Using the same excipients, the tablets were prepared, without disintegrants and were evaluated in the similar way. From the results obtained, it can be concluded that the tablet formulation (P4) showed the promising formulation. Also the hardness, friability, disintegration time and dissolution rate of prepared tablets were found to be acceptable according to standard limits.

**Keywords:** Nimesulide, Mouth dissolving tablets, In vitro evaluation, Superdisintegrants.

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| 6. | IJPI ' s Jouranal of Pharmacolognosy and Herbal Formulatioms (IJPL), November 2010, /vol I, Issue 1, 1-5 | Basavaraj S. Patil, Parikh Bhavik, Upendra Kulkarni, Qumar Jamal Ahmed | Formulation and evaluation of Triphala tablets |

**Abstract:**

The objective of the present study was to develop tablet formulations of Triphala. Ayurvedic formulary of India specifies the dose of Triphala powder to be 5-10 gm per day. Dispensing and consumption of powder is inconvenient to the patients. Hence, in the present investigation, an attempt was made to prepare tablet formulations of Triphala powder and improve patient compliance and acceptability. Tablet formulations were developed by wet granulation technique using maize starch and PVP as binders in the concentration of 2, 4, and 6%w/w. The granules were evaluated for angle of repose, bulk and tapped densities and percentage compressibility and the tablets were evaluated for weight uniformity, hardness, friability and disintegration time.

**Key words:** Triphala powder, Maize starch, PVP, Tablets.

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| 7. | International Journal of Research in Ayurveda pharmacy (IJRAP), November-December 2010, vol I Issue 2, 590-596 | Basavaraj S. Patil, Srinivas R. Soodam, Upendra Kulkarni, Prakash G. Korwar | Evalution of Moringa ileifera gum as a binder in tablet formulation |

**Abstract:**

**:** Various plant gums have been used as binders in tablet formuations, but still finding for novel binder for the manufacture of tablets, in pharmaceutical industry. The Moringa oleifer gum was found to have binding property. In the present study Moringa oleifere gum was employed as a binding agent in chloroquine phosphate tablets at concentrations of 4.0, 6.0 abd 8.0% w/w, in comparison with potato starch. The properties of Moringa Oleifera gum were evaluated for angle of repose, bulk denstity, tapped density, carr's compressibility index and hausner's ratio. The granules were evaluated for moisture content, angle of repose, bulk and tapped densities. The tablets were evaluated for thickness, weight, variation, hardness, friability, disintengration time and dissolution profiles. Studies showed that increase in binding concenttation of Moringa oleifera gum, increase the hardness, and disintegration time, decrease the percentage feiability and cumulative release. Results obtained indicated that Moringa oleifera gum performed as good as potato starch as a binder to Chloroquine phosphate tablets.

**Keywords :** Moringa Oleifera gum, Chloroquine phosphate, Potato starch, Binder, Tablets

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| 8. | International Journal of Pharmaceutical Sciences (IJPS) Sept-Dec 2010, vol 2 , Issue 3, 717-723 | Basavaraj S. Patil, K. Durga Rao, Upendra Kulkarni, Md. Saifudding Khalid, Prakash G. Korwar | Propertoes of Zingiber officinale starch as a novel tablet binder. |

**Abstract:**

The objective of present investigation was to extract starch from ginger (*Zingiber officinale*) rhizome and to evaluate it as a binder for tablets in comparison with potato starch in Chloroquine phosphate based tablets at concentration of 4.0, 6.0 and 8.0 % w/w. Properties of the ginger starch were evaluated for angle of repose, bulk density, tapped density, carr !"#$%&'(')'*+ ',-&./ 012,&% %1*'"/ 1,-!")-water solubility. The granules were evaluated for moisture content, angle of repose, bulk and tapped densities. The tablets were evaluated for thickness, weight variation, hardness, friability, disintegration time and dissolution profiles. Results obtained indicated that ginger starch performed as good as potato starch as a binder to Chloroquine phosphate tablets.

**Key words:** Ginger starch, Chloroquine phosphate, Potato starch, Binder, Tablets.

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| 9. | International Journal of Pharmaceutical Sciences (IJPLS) Dec 2010, vol 2 , Issue 8, 433-436 | Basavaraj S. Patil, Upendra Kulkarni | Formulation and evaluate of mouth dissolving tablets of Atenolol |

**Abstract:**

Attempts were made to prepare mouth-dissolving tablets of atenolol by direct compression method with a view to enhance patient compliance. The two super disintegrants used in this study were croscarmelose sodium and sodium starch glycolate. The prepared

batches of tablets were evaluated for uniformity of weight, thickness, hardness, friability, wetting time, water absorption ratio, disintegration time and dissolution study. Using the same excipients, the tablets were also prepared, without disintegrants and were evaluated in the similar way. From the results obtained, it can be concluded that the tablet formulation (A4) showed the promising formulation. Also the hardness, friability, disintegration time and dissolution rate of prepared tablets were found to be acceptable according to standard limits.

**Keywords:** Mouth dissolving tablets, Atenolol, In-vitro evaluation.

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| 10. | International Journal of Pharmaceutical Sciences (IJPLS)August 2010, vol 1 , Issue 8, (Suppl) 93-99 | Hariprasanna R. C Upendra Kulkarni, Basavarj S. Patil, Vipul Karkar Parikh Bhavik | Formulation and development of fast disintegrating Felodipine tablets Functionalitu of Superdisintergrants |

**Abstract:**

Felodipine, a calcium channel blocker, is used for hypertension and angina pectoris. Felodipine fast- disintegrating tablets (FDT) have been prepared by direct compression method. Effect of superdisintegrants (like crosspovidone, croscarmellose sodium and sodium starch glycolate) on wetting time, disintegrating time, drug content, in vitro release and stability parameter has been studied. Disintegrating time and dissolution parameter (t50% and t90%) decreased with increases in the level of croscarmellose sodium and crosspovidone whereas disintegration time and dissolution parameter increased with increase in the level of more than 5% sodium starch glycolate. The formulation did not show any change in disintegration time, wetting time and drug content after stability period. It was concluded that fast disintegrating Felodipine tablets can be prepared by direct compression using superdisintegrants.

**Keywords:** Fast Disintegrating Tablet, Felodipine, Croscarmellose sodium, Crosspovidone, Sodium Starch Glycolate

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| 11. | International Journal of Pharmaceutical Sciences (IJPRD) November 2010, vol 2 , Issue 9, 135-138 | Upendra Kulkarni, Basavarj S. Patil, Vipul Karkar, Prakash G. Korwar | Design and development of fast disintegrating tablets a containing Amla powder by vacuum drying technique |

**Abstract:**

Patient compliance cab be increased and adulteraton can be decreased in Ayurvidec powders by formulating them into tablets. Attempts have been made for the development of fast disintegrationg tablets of amla powder by vacumm drying technique. Amla powder is genrally used to enhance digestion, treat constipation, to reduce fever and cought and as a blood purigier. Amla powder is mainly indicated for duslipidaemia and oxidative stress in the aeign process. The granules containing the drug and excipients were examined for the precompressional parametes. The prepared formulations were evaluated for hardness, weight variation, friability, disintegration and wetting time. The values of precompressional parameters were within prescribed B.P limits and indicates good free flowing properties. In all the formulation friability was less than 1% indicates tablets had a good mechnical resistance. Hardness of the tablets was found to be in the range of 3.50 – 4.60 kg/cm. the disintegration and wetting times of all formulations were decreased with increase in the concentration of subliming agents.

**Keywords :** Fast- disintegtrating tablets, Camphor, Amla powder, Kyron T-314, Kyron T-114sspovidone, Sodium Starch Glycolate

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| 12. | IJPI ' s Journal of Pharmacognosy and Herbal formulations (IJPL), November 2010, vol I Issue 1, 1-8 | Upendra Kulkarni, Basavaraj S. Prakash G. Korwar | Evulation of Tapioca sago starch as a binder in tablet formulation |

**Abstract:**

Various plant gums like gelatin, acacia, alginic acid, guar gum, maize starch, and potato starch. have been used as binder in pharmaceutical

formulations. But still finding novel binder is useful in the pharmaceutical industry for manufacture of tablets. The Tapioca sago starch was found for its binding property. Tapioca sago starch has been evaluated for relevant properties and used as a binder to Paracetamol tablets at concentrations of 8.0, 10.0 and 12.0 % w/v. The granules were evaluated for moisture content, angle of repose, bulk density and tapped density, carr's compressibility index and hausner's ratio. The tablets were evaluated for thickness, weight variation, crushing strength, friability, disintegration time and dissolution profiles. Paracetamol tablets containing gelatin as standard binder were produced and assessed comparatively. Results obtained indicated that Tapioca sago starch performed as good as gelatin as a binder to Paracetamol tablets.

**Key words:** Tapioca sago starch, Paracetamol, Gelatin, Binder, Tablets.

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| 13. | International Journal of Pharmaceutical Sciences (IJPS) May-Aug 2010, vol 2, Issue 3, | Upendra Kulkarni, S A Durgad, Basavaraj S. Patil, Prakash G. Korwar, Sandeep S. Tate | Formulation and evaluation of Pimozide fast dissolving tablets by solid dispersion technique |

**Abstract:**

Attempts were made to formulate Pimozide fast dissolving tablets by employing solid dispersion technique. Formulations were evaluated for pre and post compressional parameters. Drug interaction with polymer was checked by FTIR. Stability studies were carried out as per ICH guidelines. The results revealed that formulation P3 was yielded best in terms of dissolution rate. The stability studies revealed that upon storage tablets do not show any change in disintegration time, thickness and drug content after stability studies.

**Key words**: Fast dissolving tablets, Pimozide, PVP, Solid dispersion, DC Kyron T-314, DC Kyron T-114

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| 14. | International Journal of Pharmaceutical Sciences (IJPSR) Aug 2010, vol 1, Issue 8, (Suppl), 133-138 | Upendra Kulkarni, Vipul Karkar, Parikh Bhavik Qamar Jamal Ahmed | Formulation ad optimization of fast dissolving Meloxican tablets by vacuum drying technique |

**Abstract:**

Despite recent success, many fast-dissolving tablets (FDTs) still face problems of low mechanical strength, poor mouth-feel, higher wetting and disintegration times. This research work aimed to overcome from these drawbacks. Attempts were made to prepare fast dissolving tablets by employing vacuum drying technique utilizing single and multi-volatile components. Analysis revealed that, formulation containing camphor and menthol as subliming agents yielded the best result in terms of dissolution rate (M7). Results also revealed that, all the formulations had enough mechanical strength, good mouth-feel and lesser wetting and disintegration time. Stability study indicates that upon storage disintegration and wetting time of tablets decreased significantly without losing their mechanical strength.

**Keywords:** Meloxicam, Fast dissolving tablets, Camphor, Menthol, Crosspovidone

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| 15. | International Research Journal of Pharmacy (IRJP), December 2010, vol 1, Issue 1, 132-137 | Srinivas R. Soodam, Basavarj S. Patil, Upendra Kulkarni, Prakash G. Korwar | Formulation and in-vitro evaluation of fast dispersible tablets of sertraline using different superdisintergrants |

**Abstract:**

**I**n the present work attempts were made to prepare fast-dispersible tablets of sertraline by direct cpmpression method with a view to enhance patient cpmpliance. The three superdisintegrants used in the study were crosscarmellose sodium, Crospovidone and sodium starch glycolate. Tablets having superdisiontegrant at different concentration (8,10 and 12mg) level were prepared. The prepared batches of tablets were evaluste for uniformity of weight, thickness, hardness, friability, in-vitro dispersion time and in-vitro dissolution study. Tablet

containing crosscarmellose sodium shiwed excellent I vitro dispersion time and drug release as compared to other formulations. After study, formulations n6 shows short dispersion time with maximum drug release in 40 minutes.

**Keywords :** Sertraline, Fast dispersible tablets, In-vitro evaluation, Superdisintegrants.

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| 16. | International Journal of Current Pharmaceutical Research (IJPCR),<br>Aril- June 2010, Vol 2, Issue 2, 36-39 | N.G Raghavendra Rao, Upendra Kulkarni, Basavaraj S. Patil, Gururaj V. Wadageri | Formulation and evaluation of fast dissolving tablets of some ayurvedic churchnas by vacuum drying technique |

**Abstract:**

Guidelines for three months. The results revealed that tablets prepared by solid dispersion having drug to PVP ratio of1 :4(P3), yielded the best result interms of dissolution rate. Stability studies revealed that upon storage tablets prepared by solid dispersion with PVP did nots how any change in disintegration time after stability studies.

**Keywords:** Fast Dissolving Tablets, Meloxicam, Croscarmillose Sodium, Solid Dispersion.

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| 17. | Research Journal of Pharmaceutical sciences (RJPBCS) July-Sep 2010, vol I, issue 3, 55-59 | Hogade Maheshwar G, Basavaraj S. Patil, Dhumal Prashant | Comparative sun protection factor determination of fresh fruits extract of cucumber Vs marketed cosmetic formulation. |

**Abstract:**

The aim of study was to evaluate the correlation between natural fresh (Cucumber) and marketed cucumber lotion as sun protective agent. The in-vitro Sun Protection Factor of fresh aqueous extract from fruits of *Cucumis sativus* and randomly selected marketed pure cucumber lotion is determined according to spectrophotometric method of Mansur et al. The results indicate that there was no more good correlation between the in-vitro SPFs values.

**Keywords:** Sun Protection Factor, Photo protection, Erythema, Cucumber Extract.

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| 18. | Research Journal of Pharmaceutical sciences (RJPBCS) July-Sep 2010, vol I, issue 2, 47-55 | N.G.Raghavendra Rao, Upendra Kulkarni, Hariprasanna R.C Basavaraj S. Patil, Rabbani G | Design and development of disintegrating tablets of Felodipine by vacuum, drying technique |

**Abstract:**

Felodipine which is used in the present study is a dihydropyridine derivative, that is chemically described as ethyl methyl-4-(2, 3-dichlorophenyl)-1,4-dihydro-2,6-dimethyl-3,5-pyridinedicarboxylate, widely accepted for its excellent antihypertensive and anti-anginal properties since it is calcium antagonist compound (calcium channel blocker). Felodipine is practically insoluble in water and its dissolution rate is limited by its physicochemical properties. In the present study fast disintegrating tablets of felodipine were prepared by adopting vacuum drying technique to study the effect of different subliming agents with various concentrations on disintegrating time. The powder blend was examined for the pre-compressional parameters. The prepared formulations were evaluated for post-compressional analysis for the parameters like hardness, friability, thickness, wetting time, water absorption ratio, weight variation, *in-vitro* disintegration time, i*n- vitro* dispersion time, i*n-vitro* dissolution study. Drug compatibility with excipients was checked by FTIR studies. The results obtained showed that quantity of ammonium bicarbonate, urea and menthol significantly affect the response variables ($P > 0.05$). No chemical interaction between drug and excipients was confirmed by FTIR studies. Stability studies carried out as per ICH guidelines for three months and results revealed that upon storage disintegration time of tablets decreased significantly ($P > 0.05$). The results concluded that fast disintegrating tablets of felodipine showing enhanced dissolution rate with increasing the concentrations of subliming agents. Among all the formulations A3 and M3 shows the improved dissolution rate which lead to improved bioavailability and effective therapy by using vacuum drying technique.

**Keywords:** Felodipine, fast disintegrating tablets, ammonium bicarbonate, urea, menthol.

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| 19. | Research Journal of Pharmaceutical sciences (IJCPR) October-December 2010, Vol 2, Issue 4, 36-39 | Arun Kumar Beknal, Prakash G. Korwar, M A Halkai, Upendra Kulkarni, Basavaraj S. Pastil, Srinivasa R. Soodam | Phytochemical investigation and antioxidant activity study of *drynaria quercifolia* linn rhinzome |

**Abstract:**

In the present research investigation we extracted the powdered rhizome of Drynarla quercifollar linn by soxhlation method using different solvents. Then extracts were subjectd to preliminary phyto-chemical investigation followed by evaluation to anti-oxidant activity by DPPH assay method. It was observed that, the methnolic extract was found to be effective anti-oxidant on comparision to the other extracts and has significant acivity compared to the standard drug.

**Keywords :** drynaria quercifollar, Anti-Oxidant, Methanol

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| 20. | International Journal of Pharmaceutical Sciences & Research (IJPSR) December 2010, vol I, Issue 12, 148-158 | Prakash G. Korwar, Arun Kumar Beknal, Basavarj S. Patil, M A Halkai, Upendra Kulkarni, Hariprasanna, R C Srinivas R. Soodam | A study on phytochemical investigation of *drynaria quercifolia* linn rhizome |

**Abstract:**

In the present research investigation we extracted the powdered rhizome of *Drynaria quercifolia* linn by Soxhletion method using different solvents. Then extracts were subjected to preliminary phyto-chemical investigation. The proximate analysis was carried out for the plant rhizome powder. The total ash value was 9.93%, Acid insoluble ash value was 4.49%, and Water-soluble ash value was 6.96% and extractive values of alcohol and water was found to be 9.87% and 13.94%. The materials were subjected to successive extraction with solvents. The solvents used were petroleum ether, chloroform, methanol and water in the ascending order of polarity. Pet ether extract was Light brown color, highly viscous and sticky and the yield was 3.12%, chloroform extract was brownish black color, viscous and sticky and the yield was 5.72%, methanol extract was brown color and sticky and yield was 19.67%, and the water extract was brown and sticky and yield was 16.33%. All the extract was subjected for qualitative chemical evaluation to detect the phyto-constituents present in them. Pet ether extract revealed the presence of phytosterols and fixed oils and fats. Chloroform extract revealed the presence of sterols, methanolic extract shows the presence of alkaloids, sterols and tannins and the water extract has shown the presence of tannins, proteins, amino acids, carbohydrates, gums and mucilages. To identify the constituents present in different extracts, the TLC was performed.

**Keywords:** *Drynaria quercifolia,* TLC, Petroleum ether, Chloroform, Methanol

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| 21. | International Journal of Current Pharmaceutical Research (IJPCR), October –December 2010, vol 2, Issue 3, .36-39 | Upendra Kulkarni, Siddarth S. Desai | Design and development of felodipine buccal mucoadhesive patches |

**Abstract:**

Buccal deliervery of drugs provides and attractive alternative to the oral route of drug, administration. The mucosa has a rich blood supply and provides rapid absorption for drugs. Felodipine is a calcium channel blocker. Because of poor bioavalability of Felodipine by oral route, there is need to increase its bioavability by formulating into a buccal dosage form. A number of buccal mucoadhesive patches of felodipine were prepared by casting method using polying pyrrolidone (PVP) and polyving alcohol (PVA) as polymer. Glycerin and propylene glycol were as plasticizers. While the solvent was water. The films were evaluated on the basis of their release characteristic, percentage, swelling and drug content uniformity. Stability study revelaed that the percent drug content decreased in various patches was ranging form 1.15 to 1.90

**Keywords :** Frlodipine , PVP, PVA, Buccal Patch, In-vitro release.

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| Sl. No. | Name of Journal, Volume No. Issue and Period | Author/s | Title of the article |
|---|---|---|---|
| 1. | Journal of Indian Council of Chemists, Vol.27, No.1, 2010, pp.85-88. | B. C. Revanasiddappa E.V.S Subrahmanyam | Synthesis and Biological Evaluation of Some Novel Pyrimidine Derivatives |

**Abstract:**

A new series of chalcones (2a-j) were synthesized by reacting furfuraldehyde and substituted acetophenones in ethanolic- sodium hydroxideThese chalcones were reacted with urea and thiourea in presence of NaOH solution to obtain the corresponding hydroxyl (3a)-j) and thio (4a-j) pyrimidines. The newly synthesized compounds were characterized on the basis of IR, MASS & $^{1}$H-NMR spectral data. All the compounds have been evaluated for their *in-vivo* antibacterial and antifungal activity. Some of the compounds showed promising activity in the antibacterial study.

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| 2. | Indian Journal of Heterocyclic Chemistry, Vol.20, July-Sept, 2010, pp.05-08., | Irfan A Mohammed E.V.S.Subrahmanyam | Synthesis and Antimicrobial Studies of Some Substituted 8-([1,2,4] Triazolo [3,4-b] [1,3,4] Thiadiazol-3-ylmethoxy) Quinolines |

**Abstract:**

A variety of 8-([1,2,4] triazolo [3,4-b] [1,3,4] thiadiazol-3ylmethoxy) quinolines (5) have been synthesized by reacting 5-(quinolin-8-yloxy) methyl]-4H-1,2,4-triazole-3-thiol(4) with aromatic acids. The starting material aroylhydrazide (2) was synthesized from ethyl (quinoline-8-yloxy) acetate (1). The title compounds obtained were characterized by spectral data and investigated for antimicrobial activities.

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| 3. | Int. J. Pharm. Sci. Bio. 2010; 1 (2):80-85. ISSN 229-3604. | Irfan A Mohammed, E.V.S.Subrahmanyam, A.R. Hareesh Rajesh Kowti | Synthesis, Antimicrobial Studies of Some Schiff ' s Bases and Novel 5-Aryl (8-Quinolinoxymethyl)-1, 3, 4- Oxadiazole Derivatives |

**Abstract:**

In present study we developed an efficient method for preparing 1, 3, 4-oxadiazoles, commencing from hydrazides and substituted aldehydes. The reaction of hydrazides with substituted aldehydes in the presence of ethanol to yield schiffs bases and further treating with Chloramine-T to produce 5- aryl (8-quinolinoxymethyl)-1, 3, 4-oxadiazoles. The compounds thus obtained were identified by spectral data and screened for their antimicrobial activity.

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| 4. | Indian Drugs 42(2) February 2010, pg. No. 57-59. | Srinivasa U., Neelakanta, Shabaraya A.R Rao V.J. | Analgesic Activity of *Clerodendrum Phlomidis* Stem Bark |

**Abstract:**

ethanol extract of the dried bark of *Clerodendrum phlomidis* Linn were prepared and evaluated for their activity. Both Eddy's hot plate and tail immersion models were used for the evaluation of analgesic activity in albino rats. The activity was found to be dose dependent. Pentazocine (5mg/kg) was used as reference drug, overall result of this study suggest that the extract possesses significant analgesic activity.

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| 5. | Indian Drugs 47(11) November 2010. | Srinivasa U<br>Rao J.V | Preliminary Phytochemical Investigations and Antidiabetic activity of *Clerodendrum Phlomidis* (Verbanaceae) Leaves |

**Abstract:**

The petroleum ether, chloroform, ethanol and aqueous extracts of *Clerodendrum phlomidis* Linn dry leaves were screened for various phytoconstituents. Phytochemical analysis revealed the presence of secondary metabolites like phytosterols, triterpenoids, saponins, alkaloids, tannins and carbohydrates as a major phytoconstituents. Phytochemical analysis plays an important tool in the standardization of crude herbal drugs. The antidiabetic effect of ethanol extract of the leaves of *Clerodendrum phlomidis* Linn was investigated in alloxan induced diabetic rats. The blood glucose levels were measured at $8^{th}$, $16^{th}$ and $24^{th}$ day after the treatment. The ethanol extract of *Clerodendrum phlomidis* Linn ( 250 mg/kg ) reduced the blood glucose level in alloxan induced diabetic rats from $303.3 \pm 6.7$ to $136.7 \pm 4.9$ at $24^{th}$ day intraperitonial administration (i.p) of the test extract ( $P < 0.001$ ). The antidiabetic activity of *Clerodendrum phlomidis* Linn was compared with reference drug insulin.

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| 6. | Journal of Science and Technology,<br>Vol.6(5) P. No.19, May (2010) | U.Srinivasa, Divakar K.<br>Yoganand R.,<br>J. Venkateshwara Rao | Phytochemical characterisation of *Justicia beddomei* leaf |

**Abstract:**

The petroleum ether, chloform, ethanol and aqueous extracts of Justicia beddomei dry leaves were screened for various phytoconstituents. Phytochemical analysis revealed the presence of secondary metabolites like alkaloids, steroids, triterpenoids, tannins and flavonoids. Phytochemical analysis plays an important tool in the standardization of crude herbal drugs.

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| 7. | Research J. Pharm. and Tech. 3(1):<br>Jan-Mar. 2010, pg. No. 217-220.<br>ISSN 0974-3618. | Karunakar Hegde<br>Arun B Joshi | Phytochemical Investigation of Root Extract of the Plant *Carissa carandas* Linn |

**Abstract:**

**:** From the petroleum ether extract of the roots of *Carissa carandas* Linn. (Apocynaceae), three compounds namely lupeol, β-sitosterol, 16β-hydroxybetulinic acid and from the chloroform extract two compounds namely α-amyrin and β-sitosterol glycoside have been isolated by column chromatography. Their structures were characterized by m.p., IR, 1HNMR, $^{13}$CNMR and MS spectral data. However, the compounds lupeol, 16β-hydroxybetulinic acid and α-amyrin were reported for the first time from the roots of this plant.

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| 8. | Int. J. Pharmacol. Biol. Sci.,<br>Vol. 4(2) 2010, 25-34, ISSN-0973- 6808 | Karunakar Hegde,<br>Sunil Koshy<br>Arun B. Joshi | Anti-Nociceptive, Anti-Inflammatory and Antiarthritic activity of *Carissa Carandas* Root Extract |

**Abstract:**

The Effect of ethanol extract of the roots of *Carissa carandas* Linn (ERCC) (Family: Apocynaceae) was evaluated in experimental models of pain, inflammation and polyarthritis. The anti-nociceptive effect of ERCC was evaluated by tail-flick and acetic acid analgesic test methods; it's anti-inflammatory effect was investigated using carrageenan and prostaglandin E2 ($PGE_2$)-induced paw edema and cotton pellet granuloma method; while it's anti-arthritic effect was evaluated by Freud's adjuvant-induced non-established and established arthritis. ERCC (100, 200 and 400mg/kg, p.o.) produced dose-dependent, significant anti-nociceptive pain in animals. The plant extract significantly inhibited carrageenan and prostaglandin-induced acute inflammation and also caused dose related, significant decrease in weight of cotton pellet granuloma in animals. Treatment with ERCC significantly reduced Freud's adjuvant-induced non-established and established arthritis in dose dependent manner and the effect was comparable to phenylbutazone (100 mg/kg, i.m.). The flavonoids, triterpenoids, tannins and other chemical compounds present in ERCC are speculated to account for the observed pharmacological effects of the plant's extract in the

experimental animal paradigms used. The findings of this experimental animal study indicate that ethanol extract of the roots of *C. carandas* possesses anti-nociceptive, anti-inflammatory and anti-arthritic properties; and thus lend pharmacological credence to the folkloric and ethanomedical uses of the plant in the treatment and/ or management of painful, inflammatory and arthritic conditions.

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| 9. | Bangladesh Journal of Pharmacol., October 2010, 5:73-76. ISSN: 1991-007X. | Karunakar Hegde Arun B. Joshi, | Hepatoprotective and Antioxidant effect of *Carissa spinarum* root extract against Ccl 4 and Paracetamol- induced hepatic damage in rate |

**Abstract:**

Ethanolic extract of the roots of *C. spinarum* was evaluated for hepato-protective and antioxidant activities in rats. Oral pre-treatment with ethanolic extract (100, 200 and 400 mg/kg) showed significant hepatoprotective activity against $CCl_4$ and paracetamol-induced hepatotoxicity by decreasing the activities of bilirubin and lipid peroxidation, and significant increase in the levels of uric acid, glutathione, super oxide dismutase, catalase and protein in a dose dependent manner, which was confirmed by the decrease in liver wet weight and histopathological examination. The extract possessed strong antioxidant activity. This suggests that the hepatoprotective activity of *C. spinarum* is possibly attributed to its free radical scavenging properties.

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| 10. | Der Pharmacia Lettre, 2010, 2(3):255- 260, ISSN 0975-5071. | Karunakar Hegde, Arun B Joshi | Preliminary Phytochemical Screening and Antipyretic Activity of *Carissa Spinarum* Root Extract |

**Abstract:**

*Carissa spinarum* Linn. (Family: Apocynaceae) has been used traditionally for the treatment of inflammation-related disorders such as rheumatic pain and to relieve fever. In the present study the ethanolic extract of the roots of Carissa spinarum (ERCS) was evaluated for its phytochemical screening and antipyretic activity. Wistar albino rats were induced with Brewer's yeast (2 ml/kg, S.C.) for pyrexia and antipyretic activity was assessed with 100, 200 and 400 mg/kg, p.o. ethanolic extract. The ethanolic extract significantly ($P < 0.05$) reduced the elevated body temperature in a dose dependent manner. The presence of wide varieties of phytoconstituents may attribute to the promising antipyretic activity of Carissa spinarum root extract.

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| 11. | Pharmacologyonline 2: 713-718 (2010). | Karunakar Hegde, Cijo Issac, Arun B Joshi | Antiarthritic Activity of *Carissa Spinarum* Root Extract in Freund ' s Adjuvant Induced Polyarthritis in Rats |

**Abstract:**

The plant *Carissa spinarum* used locally in Indian and Chinese system of medicines for various painful inflammatory and arthritic conditions was assessed for its anti-arthritic effect using the Freund's adjuvant induced-polyarthritis in rats. The ethanolic extract of the roots of *C. spinarum* (ERCS) at the dose range of 100, 200 and 400 mg/kg, p.o. and phenylbutazone showed significant ($P<0.05$), dose dependent anti-arthritic properties by reducing the arthritic edema in the adjuvant-induced established and non-established arthritis in rats. The triterpenoids, flavonoids, tannins and other chemical compounds present in ERCS are speculated to account for the observed pharmacological effects of the plant's extract in the experimental animal paradigms used. The findings of this experimental animal study indicate that ethanol extract of the roots of *C. spinarum* possesses anti-arthritic properties; and thus lend pharmacological credence to the folkloric and ethnomedical uses of the plant in the treatment arthritic conditions.

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| 12. | Research J. Pharm. and Tech. 3(4): Oct.-Dec. 2010, ISSN 0974-3618 | Karunakar Hegde, Cijo Issac Arun B. Joshi | Inhibitory Response of *Carissa carandas* Root Extract on Lipid Peroxidation |

**Abstract:**

**:** In this study, response of ethanolic extract of the roots of *C. carandas* (ERCC) on membrane lipid peroxidation and antioxidant activity was evaluated by using series of *in vitro* models of chemical and rat liver homogenate. The ethanolic extract exhibited its radical scavenging effect in concentration dependent manner on 2,2-azinobis-(3-ethylbenzothiazoline-6-sulphonate) (ABTS), 1,1-diphenyl, 2-picryl hydrazyl (DPPH), super oxide, nitric oxide, erythrocyte haemolysis and the $IC_{50}$ values found to be 324.93, 185.08, 117.66, 242.69 and 70.82 $\mu$g/ml respectively. The extract was also evaluated for its inhibitory response on membrane lipid peroxidation by thiobarbituric acid reactive substances (TBARS) using young and aged rat liver homogenate. The extract was also effective in preventing membrane lipid peroxidation induced by $FeSO_4$/ascorbate in concentration dependent manner. The free radical protective activity may be attributed to its total antioxidant capacity and the presence of total polyphenolic contents. The results obtained in the present study indicate that the ethanolic extract of the roots of *C. carandas* can be a potential source of natural antioxidant and justify the therapeutic applications of the plant in the indigenous system of medicine.

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| 13. | Pharmacologyonline 3: 691-695 (2010). | Karunakar Hegde, Moses Samuel Rajan, D Satyanarayana, Arun B Joshi, | *In Vitro* Anthelmintic Activity of Seed Extract of *Artocarpus Lakoocha* Roxb |

**Abstract:**

The ethanol extract of seeds of *Artocarpus lakoocha* Roxb. (ESAL) was investigated for anthelmintic activity using earthworms (*Pheretima posthuma*), tapeworms (*Raillietina spiralis*) and roundworms (*Ascaridia galli*). Various concentrations (10-50 mg/ml) of seed extract was tested in the bioassay. Piperazine citrate (10 mg/ml) was used as reference standard drug whereas DMF (Di-methyl formamide) as control. Determination of paralysis time and death time of the worms were recorded. Extract exhibited significant anthelmintic activity at highest concentration of 50 mg/ml. The result shows that seed extract possesses vermicidal activity and found to be effective as an anthelmintic. The anthelmintic activity of ethanol extract of the seeds of *Artocarpus lakoocha* has therefore been demonstrated for the first time.

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| 14. | Pharmacologyonline 3: 229- 234(2010). | Padmavathi P. Prabhu, C.S.Shastry, Padmashree, Sushant Pande. | Analgesic and Anti-Inflammatory Activity studies of Some novel Benzothiazole Schiff ' s bases on Experimental Rats |

**Abstract:**

The present study is based on the investigation of analgesic and anti-inflammatory activity studies of some synthesized novel benzothiazole derivatives on albino rats. A series of Schiff's base of several benzothiazole derivatives have been synthesized. Para-nitro benzothiazole carboxylic acid was synthesized by Jacobson synthesis1. It was then reduced to para amino benzothiazole carboxylic acid with ammonium chloride and iron metal. The resulting product was then condensed with various aromatic or heterocyclic aldehydes in the presence of concentrated sulphuric acid as a catalyst using ethanol as solvent to yield different Schiff bases. The structure of synthesized compounds was characterized by IR, 1H NMR and Mass spectral data. Purity of the individual compound was confirmed by TLC. In the present study we have used tail flick method using analgesiometer. The ability of a compound to reduce the local edema induced in a rat paw by various irritants is the most widely used method to screen the new anti-inflammatory agents. Compounds like formalin, carragenin, kaolin, yeast and dextran have been used as irritants to produce edema. On the basis of this we have screened all the newly synthesized compounds during the present investigation for their anti inflammatory activity. The synthesis of benzothiazole schiff's bases by the described method resulted in products with good yield. Spectral analysis revealed the successful formation of schiff's bases of benzothiazole derivatives.All the synthesized benzothiazole derivatives have shown analgesic activity. When compared to standard drug (pentazocin) all the compounds were found to be slightly active among which P5d, P5e, P5g, and P5h showed significant analgesic activity. However the activity was less than that of standard drug. All the synthesized benzothiazole derivatives have shown anti inflammatory activity in suppressing carrageenan induced edema in rats. When compared to standard drug (indomethacine), all the compounds were found to be moderately active, among which P5e, P5g, and P5h showed significant anti-inflammatory activity. However the activity was less than that of the standard drug. Analgesic and anti-inflammatory study of the synthesized compounds showed mild to moderate activity.

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| 15. | Pharmacologyonline1:1132- 1139 (2010).) | Padmavathi P. Prabhu, Aravind Pai, Padmashree, Ramakrishna Shabaraya, | Analgesic and Anti-Inflammatory Activity Studies of some new Aryl 4-Thiazolidinones in experimental mice |

**Abstract:**

**:** Purpose: The core aim of the present study was to investigate analgesic antipyretic and anti-inflammatory activity studies of some synthesized new aryl substituted 4-thiazolidinone derivatives on experimental animals.

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| 16. | International Journal of Pharm Tech Research. Vol. 2, No.4, pp.2415- 2419, Oct-Dec 2010. ISSN: 0974- 4304. | Padmashree, Padmavathi P. Prabhu, Sushanth Pandey, Shabaraya A.R., | Anti diabetic activity of methanol/ methylene chloride extract of *Terminalia superba* leaves on Streptozotocin induced diabetes in rats |

**Abstract:**

Aim of the present work is to evaluate the anti diabetic effect of methanol/methylene chloride extract of *Terminalia superba* leaves in rats. *Terminalia superba* (Combretaceae) is one of the plants used by traditional healers as a remedy for diabetes mellitus. It is widely distributed in the dense humid forests. Effect of various doses (200, 400 mg/kg p.o) extract was studied on streptozotocin induced both diabetic and non diabetic rats. After 2 weeks of the administration of plant extract the normalisation of fasting blood glucose levels, reduction in polyphagia and polydipsia and weight gain by diabetic-treated rats has been observed. The reduction in the glucose level in induced diabetic rats proved that *Terminalia superba* having the wide antidiabetic activity.

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| 17. | Indian Drugs 47(5) May 2010. Rajeev Kumar | R, Rajeev K.P., Renjith V., Majumder P Geetha Devi S. | Antifungal Activity of Enhydra Fluctuans Lour Leaf |

**Abstract:**

*Enhydra fluctuans* Lour belonging to family Compositae was screened to evaluate *in vitro* antifungal activity against selected human pathogenic fungi. In the present investigation petroleum ether, chloroform and methanolic extracts of leaf of the plant were obtained. Preliminary reports showed presence of glycoside, saponins, triterpenoids, tannins, saponins and steroids etc. as major phytoconstituents. These extracts were tested against human pathogenic fungi which include *Candida albicans, Candida tropicalis, Microsporum gypsum* and *Aspergillus niger.* Methanolic extract exhibited broader spectrum of inhibition followed by petroleum ether and chloroform extracts against the selected human pathogens under test. An attempt has been made to compare the antibiogram pattern in terms of zone of inhibition of *Enhydra fluctuans* Lour extracts to that of standard antifungal drug (griseofulvin).

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| 18. | International Journal of ChemTech Research, Vol.2, No.4, pp 2052-2055, Oct-Dec 2010, ISSN : 0974-4290. | P. Rajeevkumar N. Subramanian, | Spectrophotometric Method for the Determination of Lincomycin Hydrochloride in Pure Form and Pharmaceutical Formulations |

**Abstract:**

A simple specific, precise and accurate spectrophotometric method has been developed for the estimation of lincomycin hydrochloride in bulk and tablet dosage form. In the developed method water was used as the solvent. The absorption maximum of the drug was found to be 196nm.The method was statistically validated according to international conference on harmonization (ICH) guidelines. Percent mean recovery was obtained to be 99.3%, whereas the coefficient of variance was found to be less than 2%.The drug follows a linear Lambert-Beer law relationship with respect to the drug concentration in the range of 5-30 g/mL, with linearity coefficient of 0.9999.

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| 19. | International Journal of PharmTech Research,<br>Vol.2, No.4, pp 2456-2460,<br>Oct- Dec 2010, ISSN : 0974-4304 | P. Rajeevkumar,<br>Rekha Rajeev<br>N. Anilkumar | Studies on Curcuma angustifolia Starch as a Pharmaceutical Excipient |

**Abstract:**

A study has been carried out to investigate the physicochemical, binding and disintegrating properties of starch isolated from grains of *Arrow root* (Family: Zingiberaceae). The studies indicated that this starch is qualitatively and quantitatively comparable to Corn starch as also the rheological and swelling characteristics. Paracetamol (500mg) tablets prepared using Corn and *Curcuma angustifolia* starch met the requirements of uniformity of weight, assay, friability and hardness. These tablets also conformed to the disintegration and dissolution specifications of Indian Pharmacopoeia. *Curcuma angustifolia* starch showed adequate binding and disintegrating characteristics.

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| 20. | J. Chem. Pharm. Res.,<br>2010, 2(4):284-290. ISSN No: 0975- 7384. | P. Rajeevkumar,<br>N. Anilkumar<br>Rekha Rajeevkumar | Studies on *musa paradisiaca* Starch as a Pharmaceutical Excipient |

**Abstract:**

A study has been carried out to investigate the physicochemical, binding and disintegrating properties of starch isolated from powder of Musa paradisiaca (Family: Musaceae). The studies indicated that this starch is qualitatively and quantitatively comparable to Corn starch as also the rheological and swelling characteristics. Paracetamol (500mg) tablets prepared using Corn and Musa paradisiaca starch met the requirements of uniformity of weight, assay, friability and hardness. These tablets also conformed to the disintegration and dissolution specifications of Indian Pharmacopoeia. Musa paradisiaca starch showed adequate binding and disintegrating characteristics

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| 21. | International Journal of ChemTech Research,<br>Vol.2, No.4, pp 2145-2149,<br>Oct-Dec 2010, ISSN : 0974-4290. | D. Nagavalli,<br>Rekha Rajeevkumar,<br>P. Rajeev Kumar, T.Devi | Derivative Spectrophotometric Estimation of *Levofloxacin hemihydrate* and Ornidazole |

**Abstract:**

The use of first order derivative spectrophotometry allowed simultaneous determination of Levofloxacin hemihydrate and Ornidazole in fixed dose combination products. The absorbance values at 277.5nm and 319nm of first derivative spectrum were used for the estimation of Levofloxacin hemihydrate and Ornidazole, respectively without mutual interference. This method obeyed Beer's law in the concentration range of 10-50 g/ml for Levofloxacin hemihydrate and 20-80 g/ml for Ornidazole respectively. The results of analysis have been validated statistically and recovery studies confirmed the accuracy of the proposed method.

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| Sl. No. | Name of Journal, Volume No. Issue and Period | Author/s | Title of the article |
|---|---|---|---|
| 1. | Food and Chemical Toxicology,<br>48: 1013-1018, 2010. | Kalyani Divakar ,<br>A.T. Pawar,<br>S.B. Chandrasekhar,<br>S.B. Dighe, GoliDivakar | Protective effect of the hydro-alcoholic extract of *Rubia cordifolia* roots against ethylene glycol induced urolithiasis in rats |

**Abstract:**

This study investigated the protective effect of the hydro-alcoholic extract of roots of Rubia cordifolia Linn. (HARC) against ethylene glycol induced urolithiasis and its possible underlying mechanisms using male Wistar albino rats. Ethylene glycol feeding resulted in hyperoxaluria, hypocalciuria as well as increased renal excretion of phosphate. Supplementation with HARC significantly prevented change in urinary calcium, oxalate and phosphate excretion dose-dependently. The increased calcium and oxalate levels and number of calcium oxalate crystals deposits in the kidney tissue of calculogenic rats were significantly reverted by HARC treatment. The HARC supplementation also prevents the impairment of renal functions.

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| 2. | Annals of Biological Research,<br>1 (3) : 190- 199, 2010. | Kalyani Divakar,<br>Goli Divakar,<br>Chirag Patel,<br>Md. Asif Ansari cells | Cytotoxic and anti-proliferative effects of hydroalcoholic extract of *Hippophae rhamnoides* Linn seeds against Human leukemia cancer (HL-60) and BHK-21 normal |

**Abstract:**

Cytotoxic and anti-proliferative effect of hydro-alcoholic extract of Hippophae rhamnoides Linn (HEHR) seeds was investigated on human leukemia (HL-60) and normal (BHK21) cells while anti-proliferative effect of HEHR was evaluated on Ehrlich ascite carcinoma (EAC) induced Swiss albino mice. Cytotoxic and anti-proliferative effect of HEHR (50-500 g.ml-1) was assayed on HL-60 and BHK-21 by MTT reduction assay, clonogenic assay and extent of DNA fragmentation of HL-60 cells using agarose gel electrophoresis. Anti-proliferative effect of HEHR (286 and 667 mg.ml-1) was also assayed by glutathione assay and observed significant ($p<0.001$) and time dependent anti-proliferative effect on both cancer and normal cells but cytotoxicity was observed only on HL-60 cells. HEHR showed significant and time dependent cytotoxic effect against HL-60 cells, with IC50 value $70.67 \pm 8.1$ and $50.0 \pm 13.3$ g.ml-1 after 48 and 72 h respectively. Treatment for 72 h with HEHR (500 g/ml) produced maximum DNA fragmentation of HL-60 cells. The level of GSH significantly decreased in all treated groups compare to tumor induced control group on 6th, 10th and 15th day of cancer induction. Anti-proliferative effect of HEHR due to its interference with cell kinetics and cytotoxic effect by apoptosis mechanism involved DNA fragmentation.

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| 3. | Invent Rapid Ethnopharmacology,1(22010. | KalyaniDivakar,<br>Patel Chirag,<br>Md. Asif Ansari,<br>GoliDivakar | In-vitro Growth Inhibitory andMutagenicn Effects of Hydroalcoholic Extract of *Hippophae rhamnoides* Linn Seeds |

**Abstract:**

**:** In vitro, growth inhibitory and cytotoxic effects of hydro-alcoholic extract of Hippophae rhamnoides Linn (HEHR 50-500 g.ml-1) seeds were investigated on human leukemia (HL-60) cells by Trypan blue exclusion assay while mutagenic effect of HEHR (10-500 g.ml-1) was evaluated by ames assay using salmonella typhimurium strain (TA-98 and TA-100). All the concentrations of HEHR (50-500 g/ml) produced extremely significant cytotoxic and anti-proliferative effect after 24, 48 and 72 h of exposure. The IC50 value of HEHR on cytotoxicity was found to be $328.67 \pm 23.3$ and $156.0 \pm 12.1$ g/ml at 48 and 72 h respectively on HL-60 cells. Only HEHR (500 g/plate) produced extremely significant ($p<0.001$) mutagenic effect on TA98 and TA100 strains, with and without S9 liver mix but all other

concentrations were non-significant. Mutagenic effect was more on TA98 strain (frame-shift mutations) compared to TA100 strain (base-pair substitutions). Our results indicate that anti-proliferative and cytotoxic effect of HEHR is not completely due to its mutagenic effect which occurred only with 500 g/ml concentration but all other concentrations used also showed anti-proliferative and cytotoxic effects.

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| 4. | International Journal of Current research and Review | H.R.Ambujakshi S.Ganapaty, | Antibacterial activity of bark of *Pterocarpus marsupium* Roxb. |

**Abstract:**

Antibacterial activity of ethanol and water extracts of barks of Pterocarpus marsupium were tested by cup-plate agar diffusion method against staphylococcus aureus, Bacillus sterothermmophilus (Gram +ve) and Eschericia coli, Klebsiella pneumoniae (Gram-ve) bacteria. Ciprofloxacin was used as the standard. It was observed that all extracts have dose dependent inhibitory effect, ethanol extract being most effective.

**Key words:** anti bacterial, Pterocarpus marsupium, cup-plate. 05.

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| 5. | Asian Journal of Pharmaceutical Sciences, 2010. 5(5): 175-184. | Sateesha SB, Rajamma AJ, Mohamed Mutahar RK Jayanthi A, Shekar HS | Formulation and stability study of palatable norfloxacin dry syrup: comparison among different preparation methods. |

**Abstract:**

**:** Purpose: The aim of this work is to prepare stable and palatable norfloxacin suspension formulation for oral administration.

**Keywords:** Norfloxacin; Dry syrup; Microsphere; Gustatory sensation test; Palatable 06

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| 6. | Journal of Young Pharmacist, 2010. 2 (3): 229-233. | Sateesha SB, Rajamma AJ, Narode MK, Vyas BD. | Influence of Organic Acids on Dilitiazem HCl Release Kinetics from Hydroxypropyl Methyl Cellulose Matrix Tablets. |

**Abstract:**

The matrix tablets of diltiazem hydrochloride were prepared by direct compression using hydroxypropyl methyl cellulose (HPMC) and various amounts (2.5%, 5.0%, 10% and 20%) of citric acid, malic acid and succinic acid. An organic acid was incorporated to set up a system bringing about gradual release of this drug. The influence of organic acids on the release rate were described by the Peppas equation: $Mt/M\infty = Ktn$ and Higuchi's equation: $Qt = K1t1/2$. Increasing amounts of organic acid produced an increase in drug release rate, which showed a good linear relationship between contents of organic acid and drug accumulate release (%) in phosphate buffer, pH 7.4. The drug release increased significantly ($P < 0.05$) with use of succinic acid in tablet formulation. Increasing amounts of succinic acid above 10% produced decreasing values of n and increasing values of k, in a linear relationship, which indicated there was a burst release of drug from the matrix.

**Key words:** Diltiazem hydrochloride, organic acids, Peppas and Higuchi's equations, pH independence, solubility

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| 7. | Der Pharmacial Lettre, 2010. 2(3), 237-248. | SateeshaSB, Prakash Rao B, Rajamma AJ Nargund LVG T | he Effect of Polymers on the Aqueous Solubility and Dissolution Behavior of Gliclazide- β -Cyclodextrin Complex. |

**Abstract:**

The rationale of this study was to enhance solubility and dissolution rate of Gliclazide(GLD) by complexation with β-cyclodextrin (β- CD) and subsequent disperson with water-soluble polymers. The water-soluble polymers used were Hydroxypropyl methylcellulose 5cps, Polyvinylpyrrolidone K30, Avicel pH101, Polyethylene glycol 4000 and Croscarmellose sodium. The GLD-β-CD complex was prepared at the concentration of 1:1.5 molar ratios by coprecipitation method and the polymers were added at the concentration of 2%w/w to the complex by kneading method. The binary system was characterized by differential scanning calorimetry, IR spectroscopy and X-ray diffractometry. Phase solubility studies revealed that the complexation with β-CD increases the solubility of drug. All the ternary systems showed higher dissolution efficiency compared to the binary system. The investigated polymers increased the dissolution rate of the drug in the order of Croscarmellose sodium> PEG 4000 >Avicel pH101> HPMC 5cps > PVP K30.

**Keywords:** Gliclazide; Complexation; Solubility; Gibbs free energy change 08.

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| 8. | Journal of Pharmacy Research. 2010. 3(12), 3113-3117. | Sateesh SB, Prakash Rao B, Rajamma AJ Nargund LVG | Study of Invitro Dissolution and Invivo Bioavailability of Gliclazide in Presence of Hydrophilic Polymers. |

**Abstract:**

The rationale of this study was to prepare the gliclazide solid dispersion using hydrophilic polymers and to evaluate the same for invitro and invivo performance. Solid dispersions of gliclazide were prepared using avicel pH 101, polyethylene glycol-4000, polyvinyl pyrrolidone K30, hydroxypropyl methylcellulose 5cps and croscarmellose sodium. In vitro dissolution studies were performed in 0.1N HCl (pH1.2) and bioavailability studies for selected formulations were conducted in wister rats of either sex for12h and blood samples were analyzed by HPLC method. Calculated Gibbs free energy ($rGtr^o$) values of all the binary systems are increasingly negative which indicate the spontaneous nature of the drug solubilization. Solid dispersions prepared with PEG-4000 and CRS showed lower MDT values (13.3±0.3 and 16.57±1.5min) and enhanced bioavailability. Increase in the bioavailability of gliclazide is due to increased solubility of gliclazde which inturn related to the absence of crystallinity, increased wettability, dispersibility and alteration of surface properties of the drug particle followed by solid dispersion.

**Key words:** Gliclazide; Solid dispersion; Mean dissolution time (MDT) Gibbs free energy value; Bioavailability 09.

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| 9. | Pharmacologyonline 1. 2010. 789- 796. | Rajamma A.J, Sonal Dubey , Sateesha S.B. | Pharmacognostic Evaluation and Larvicidal Activity of Selected Three Ocimum Species. |

**Abstract:**

This study was aimed to evaluate the efficacy of crude petroleum ether, chloroform, ethanol and aqueous extracts of ocimum species aerial parts against Culex quinquefasciatus. Initially the plants were subjected for successive extraction using various solvents ranging from non-polar to polar and secondary metabolites were extracted. The extracts were analyzed for the presence of various secondary metabolites and a thin layer chromatography study confirms the presence of terpenoids and sterols. Larvicidal activities of the extracts in the concentration range of 100 to1000 ppm were performed by WHO method on Culex quinquefasciatus at National institute of malaria research center (ICMR), Bangalore. The effect of extracts on the larval mortality rate, survival number was studied. Petroleum ether extracts of all the three species have shown better pesticidal activity. Further Pet. ether extract of Ocimum basilicum has shown the best result in comparison to other two species with the less LD50 value 46.67.

**Key words:** Ocimum species, pharmacognostic evaluation, WHO method, modified WHO method, Eliot's method

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| 10. | International Journal of Pharmacy and Pharmaceutical Sciences. 2010. 2 (4). 204-14. | R.K.Mohamed Mutahar, B.M.Dinesh, S.B.Sateesha, Shahista Omer, L.V.G. Nargund. | Development of matrix tablets by extrusion/spheronization process using laboratory extruder: study of the effects of the process parameters. |

**Abstract:**

The main aim of this research is to formulate and evaluate matrix tablets (MTs) of Nicotinic acid by extrusion/Spheronization process using extruder. These extruded MTs exhibited extended release pattern and were found to be superior in physical properties, dissolution characteristics, and drug content uniformity. The in vitro drug release data justifies the release process is diffusion controlled as all the formulations best fitted into first order release kinetics and Higuchi's equation. The model independent pair-wise approach $f1$ and $f2$ analysis suggests that the dissolution profile of formulations is superimposable with the marketed formulation profile. Release pattern was almost unaffected and could be claimed to be stable at the end of six months. Thus it may be concluded that extrusion/Spheronization as a method for the preparation of MTs has better prospects.

**Keywords:** Extrusion, Spheronization, Matrix tablets, Nicotinic acid, Stability studies.

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| 11. | International Journal of Pharmagenesis 1(1), January- June 2010, pp. 107-111 | Uday Raj Sharma, V Surendra, Divakar Goli, Sajal Kumar Jha, | Evaluation of Ant-inflamatory Activity of *Fumaria Officinalis* Linn. Herb Extract on Experimental Animal |

**Abstract:**

Fumaria officinalis Linn. is a local medicinal plant used in ethnomedicine for the treatment of constipation, bronchitis and asthma. The aqueous decoction and the ethanolic extracts were subjected to anti-inflammatory activity using experimental animal model, in the presence of the positive control drugs. The inflammation was induced by carrageenan. From the results obtained the ethanolic extract showed significant activity ($P < 0.001$) comparable to the reference drug used. At the different dose range used (100, 200 and 500 mg/kg), there was significant differences in their anti-inflammatory activity hence they were dose-dependent. The results of the study showed the justification of the use of the plant in the treatment of inflammatory disease.

**Keywords:** Anti-inflammatory activity, Fumaria officinalis Linn carrageenan

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| 12. | Journal of Young Pharmacists Sys Rev Pharm January-June 2010 Vol 1 \| Issue 1, pp. 64-67 | Uday Raj Sharma, Chauhan NS, | Recent Advances in Insulin Delivery Systems: An Update |

**Abstract:**

Insulin remains indispensable in the management of diabetes mellitus (DM) since its discoveryin 1921. Relatively, a large percentage of world population is affected by diabetes mellitus, out of which approximately 5-10% are with type 1 diabetes and 90% are with type 2. Transdermal injections are available as current insulin delivery systems which may be considered as invasive. The non-invasive delivery of insulin has been a major goal for the treatment of DM. Needle phobia and stress of multiple daily injections led researcher to investigate and explicit of all promising technologies and discoveries for advancements in insulin delivery. Needle-free insulin delivery appeared to be an astonishing approach . The article encompass, in brief, the emerging technologies and discoveries that are in pipeline, including insulin inhalers, implantable insulin pumps, insulin spray, smart cells, insulin pill, islet cell transplant, insulin nanopump, and the other promising advancements in safe and comfortable insulin delivery.

**Keywords:** Diabetes, Insulin, Novel drug delivery system.

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| 13. | Journal Of Young Pharmacists Sys Rev Pharm January-June 2010, Vol 1, Issue 1, pp. 22-25 | Uday Raj Sharma, Chauhan NS, Gopalakrishna B, | Vital Role of Interest in Improvement of Pharmacy Education in India and World Wide |

**Abstract:**

The future of any country can be easily forecasted simply by looking at the up-coming graduate being turned into the milestone of tomorrow. In the post-GATT era, the Indian pharmacy graduate must be capable to reach the pinnacle of triumph and the sound knowledge of their profession can help them to compete globally. Teachers and faculty have a vital role to shape the tomorrow's pharmacy graduate. Therefore, teachers, teaching process and all the concerned activities of the institution must be improved to cultivate the races of professionalism for future. The temple of learning play a crucial role to develop the tomorrow's graduate with sound competency and proficiency with professionalism. Modernization of education is essential but not at the expense of losing its basic essence. The present article contains the various techniques of improving the pharmacy graduate education in India and world-wide.

**Keywords:** Graduate education, Pharmacy education, Teachers and faculty.

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| 14. | International Journal of current pharmaceutical research Vol 2, Issue 3, 2010 | Hariprasanna R.C, Upendra Kulkarni, Qamar jamal Ahmad, Gururaj S.K, Srinatha B | A study on formulation and processing Factor influencing the release of Felodipine |

**Abstract:**

In the present investigation, fast dissolving tablets of felodipine were formulated by using super disintegrate croscarmellose sodium and solid dispersion with polyvinyl alcohol (PVA) as a carrier, The tablets were characterized by FTIR study. The formulations were also evaluated for precomressional parameters such as angle of repose, % compressibility and Housness ratio. The post compressional analysis for the parameters such as hardness, friability, in vitro disingteration time, wetting time and in vitro release studies, stability studies were carried out as per ICH guide lines for three months. Tablets prepared by solid dispersion having drug to carrier ratio of 1:4 (A3) yielded the best drug release in terms of dissolution rate. The formulation did not show any change in disintegration time, wetting time and drug content after stability period.

**Key words:** Fast dissolving tablet, Felodipine, Crosscarmillose sodium solid Dispersion, Polyvinyl alcohol.

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| 15. | Inventi Journal of Pharmtech. Rapid Vol- 1, Issue-2, July-Sept. 2010 | Gururaj SK, Praveen Kumar GM, Divakar Goli, UpendraKulkarni | Formulation and Evaluation of Mucoadhesive Buccal Patches of Terbutaline Sulphate |

**Abstract:**

The aim of the study was to prepare the buccal patches of terbutaline sulphate, the bronchodilator having oral bioavailability of 10.8%, using polymers like sodium alginate, carbopol-934P, PVA, and PVP in various proportions while glycerin as a plasticizer. The patches were prepared by solvent casting technique and were subjected to various evaluation parameters like weight uniformity, content uniformity, thickness uniformity, swelling index, folding endurance, surface pH, and in vitro release studies. The Fourier transform infrared spectroscopic studies revealed that there was no interaction between drug and polymers. The viscosities of the polymeric solutions used for formulations were determined using Brookfield viscometer. The tensile strength of the patches was determined using Universal strength testing machine and found satisfactory. In vitro release studies were conducted for drug loaded patches in phosphate buffer solution, pH 6.6. The patches exhibited 48.73 to 102.21% drug release in 45 min. Data of in vitro release from the patches were fit to different equations and kinetic models to explain release profiles. In vitro release followed zero order kinetics. Release of terbutaline sulphate from the patches containing sodium alginate followed Higuchi's model and mechanism was diffusion rate limited. In vivo studies in human volunteers showed 41.88% drug absorption in 30 min from formulation containing sodium alginate. Good correlation among in vitro release and in vivo absorption of terbutaline sulphate was observed (R2= 0.986). Key words: Terbutaline sulphate; buccal patches; in vitro release; in vivo absorption; evaluation

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| 16. | Pak. J. Pharm. Sci., Vol.23, No.1, January 2010, pp.15-20 | Chanchal K Roy<br>Amit kumar Das | Comparative Evaluation of Different Extracts of Leaves of *Psidium Guajava* Linn. For Hepatoprotective Activity |

**Abstract:**

The study was designed to evaluate the hepatoprotective activity of different extracts (petroleum ether, chloroform, ethyl acetate, methanol and aqueous) of P. guajava in acute experimental liver injury induced by carbon tetrachloride and paracetamol. The effects observed were compared with a known hepatoprotective agent, silymarin (100 mg/kg p.o.). In the acute liver damage induced by different hepatotoxins, P. guajava methanolic leaf extract (200 mg/kg, p.o.) significantly reduced the elevated serum levels of aspartate aminotransferase, alanine aminotransferase, alkaline phosphatase and b ilirubin in carbon tetrachloride and paracetamol induced hepatotoxicity. P. guajava ethyl acetate leaf extract (200 mg/kg, p.o.) significantly reduced the elevated serum lev els of aspartate aminotransferase, alanine amino transferase and bilirubin in carbon tetrachloride induced hepatotoxicity whereas P. guajava aqueous leaf extract (200 mg/kg, p.o.) significantly reduced the elevated serum levels of alkaline phosphatase, alanine aminotransferase and bilirubin in carbon tetrachloride induced hepatotoxicity. P. guajava ethyl acetate and aqueous leaf extracts (200 mg/kg, p.o.) significantly reduced the elevated serum levels of aspartate aminotransferase in paracetamol induced hepatotoxicity. Histological examination of the liver tissues supported the hepatoprotection. It is concluded that the methanolic extract of leaves of Psidium guajava plant possesses better hepatoprotective activity compared to other extracts.

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| 17. | Journal of Pharmaceutical & Biomedical Sciences 2010,1 (03) | Chanchal K Roy<br>Amit Kumar Das | Effect of Psidium Guajava Linn. Methanolic Leaf Extract on Hepatoprotection |

**Abstract:**

The study was designed to evaluate the hepatoprotective activity of P. guajava in acute experimental liver injury induced by carbon tetrachloride and paracetamol. The effects observed were compared with a known hepatoprotective agent, silymarin. In the acute liver damage induced by different hepatotoxins, P. guajava methanolic leaf extracts (250 and 500mg/kg, p.o) significantly reduced the elevated serum levels of aspartate aminotransferase, alanine aminotransferase, alkaline phosphatase and bilirubin. The higher dose of the methanolic extract (500 mg/kg, p.o) prevented the increase in liver weight when compared to hepatoxin treated control, while the lower dose was infeffective except in the paracetamol induced liver damage. Histological examination of the liver tissues supported the hepatoprotection. It is concluded that the methanolic extract of leaves of guava plant possesses good hepatoprotective activity.

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| 18. | International Journal of Pharmagenesi1(1), January-June 2010, pp. 107-111 | Uday Raj Sharma,<br>V Surendra,<br>Divakar Goli,<br>Sajal Kumar Jha, | Evaluation of Ant-inflamatory Activity of Fumaria Officinalis Linn. Herb Extract on Experimental Animal |

**Abstract:**

Fumaria officinalis Linn. is a local medicinal plant used in ethnomedicine for the treatment of constipation, bronchitis and asthma. The aqueous decoction and the ethanolic extracts were subjected to anti-inflammatory activity using experimental animal model, in the presence of the positive control drugs. The inflammation was induced by carrageenan. From the results obtained the ethanolic extract showed significant activity ($P < 0.001$) comparable to the reference drug used. At the different dose range used (100, 200 and 500 mg/kg), there was significant differences in their anti-inflammatory activity hence they were dose-dependent. The results of the study showed the justification of the use of the plant in the treatment of inflammatory disease.

**Keywords:** Anti-inflammatory activity, Fumaria officinalis Linn carrageenan

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| 19. | International Journal of Pharmagenesis 1(1), January-June 2010, pp. 53-58. | V. Surendra, Uday Raj Sharma, Sajal Kumar Jha, T. Prakash, Goli.Divakar, Sajal Kumar Jha, | Hepatoprotective Activity of Gardenia J asminoides Ellis in CCL 4 – Induced Liver |

**Abstract:**

Liver damage in Wister rats was induced by administering carbon tetrachloride alternative days for one week. Gardenia jasminoides was given for one week. Silymarin was given as a reference drug. Levels of marker enzymes, bilirubin, triglycerides, and cholesterol were estimated in serum. Histopathological studies were done to confirm the biochemical changes. The Mean ± SEM serum SGPT, SGOT, ALP levels in control animals were 42.16 ± 1.2, 36.61 ± 0.4, 101.01 ± 0.86 IU/L respectively whereas in carbon tetrachloride treated rats, the level rose to 350.73 ± 0.6, 380.42 ± 0.9, 469.54 ± 0.2 IU/ L respectively. Gardenia jasminoides reduced the SGPT, SGOT and ALP levels to 49.01 ± 0.1, 42.28 ± 0.2, 110.69 ± 0.2 IU/L respectively. Silymarin reduced SGPT, SGOT and ALP levels to 47.64 ± 0.2, 38.24 ± 0.3, 104.09 ± 0.2 IU/L respectively. There was a significant increase in serum Bilirubin, direct, Triglycerides, and cholesterol levels after carbon tetrachloride, which was reversed by Gardenia jasminoides and Silymarin. The rats treated with ethanolic extracts of Gardenia jasminoides prevents the rise in the levels of these enzymes. A comparative histopathological study of liver exhibited almost normal architecture, as compared to control group. Gardenia jasminoides treatment exhibited hepatoprotective action against CCl4-induced toxicity. The effect of Gardenia jasminoides was comparable with that of Silymarin.

**Keywords:** Hepatotoxicity, geniposide, gardenoside, Silymarin, Biochemical parameters

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| 20. | Indian J psychiatry 52(1);2010 | Nagalakshmi N.C., Ramesh M., Parthasarathi G., Anand H. Mary Sam Christy, Keshava B.S. | Valproic acid induced abnormal behavior. |

**Abstract:**

**:** A 12-year-old female was admitted to hospital with complaints of abnormal behavior. She was on valproic acid 200mg twice daily and clobazam 5mg at night for the past 13 weeks for her complex partial seizures with secondary generalized seizures. On day 60 of the treatment with valproic acid she developed behavioral disturbances and initiated treatment with tablet chlorpromazine, olanzapine and risperidone. During the present hospitalization, as there was no improvement in abnormal behavior, antipsychotics were discontinued and she was on observation for five days. On day 6, valproic acid was replaced with carbamazepine. Patient started recovering gradually from the abnormal behavior three days after the withdrawal of valproic acid and completely recovered after three months. Causality of valproic acid-induced abnormal behavior was 'possible'. Behavioral disturbances associated with valproic acid are rare and is reversible upon discontinuation of the drug. There is a need for vigilance on abnormal behavioral effects in patients receiving valproic acid.

**Keywords:** Adverse drug reaction, behavior, valproic acid

## SONIYA EDUCATION TRUST ' S COLLEGE OF PHARMACY

S.R.NAGAR, DHARWAD – 2

| Sl. No. | Name of Journal, Volume No. Issue and Period | Author/s | Title of the article |
|---|---|---|---|
| 1. | Der Pharma Chemica 2 (2), 2010, 44-50. | Anil M. Manikrao, Harish K. Kunjwani, Shrinivas D. Joshi, Niranjan S, Mahajan Rapid, | Economical and green solid oxidation of sulfides to sulfoxides and their antimicrobial evaluation-part 1. |

**Abstract:**

A "green" highly sensitive oxidation of organic sulfides, 3-(N-substituted carboxamido -ethylthio)-(4H)-1, 2, 4-triazoles **(I a-k)** to the corresponding sulfoxides **(II a-k)** was developed employing solid-state condition by using oxone®. The synthesized compounds were confirmed using elemental analysis and spectral data. These compounds were tested for their antibacterial and antifungal activities. None of them were found to possess any promising activity. This oxidation system is found clean, safe and operationally simple, environmentally friendly and meets the needs of contemporary "green chemistry".

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| 2. | Indian Journal of Pharmaceutical Education & Research, 44(2), Apr-Jun 2010, 148-155. | S. D. Joshi, V. P. Vaidya, Ashwini Joshi, H. M. Vagdevi, G. S. Gadaginamath. | Synthesis and antimicrobial evaluation of some new pyrrolylnaphtho[2,1-b]furan Derivatives. |

**Abstract:**

A series of new (3-substitutedphenyl-5-hydroxy-5-naphtho[2,1-b]furan-2-yl-4,5-dihydro-pyrazol-1-yl)-(4-pyrrol-1-ylphenyl)methanones have been synthesized. The structures of these compounds were established on the basis of spectral data and elemental analysis. All the compounds were evaluated for antibacterial and antifungal activities by the broth microdilution assay method. All the compounds were found moderately active.

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| 3. | Journal of Heterocyclic Chemistry 19, 2010, 221-224. | S. D. Joshi, V. P. Vaidya, Ashwini Joshi, H. M. Vagdevi, G. S. Gadaginamath | Microwave assisted synthesis of some new quinolinylpyrrole derivatives as potential antibacterial and antitubercular agents. |

**Abstract:**

A new series of (6-substituted-pyrazolo[3,4-*b*]quinolin-1-yl)-(4-pyrrol-1-yl-phenyl)methanones **5 (a-d)** have been synthesized by reaction of 4-pyrrol-1-yl-benzoic acid (6-substituted-2-chloroquinolin-3-yl-methylene)hydrazides **4 (a-d)** with 4-pyrrol-1-yl-benzoic acid hydrazide **3** by conventional and microwave methods. Microwave assisted synthesis resulted in enhancement of yields as well as reaction time. The structures of the newly synthesized compounds were confirmed by analytical and spectral data. These compounds exhibited moderate to good antibacterial and antitubercular activities.

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| 4. | Int. J. Pharmcol. Biol. Sci 4(2), 2010, 45-49. | A.M. Godbole, S.G. Nadagouda, K. Vasanthkumar Pai. | Design and evaluation of thiolated chitosan based films containing sparfloxacin for periodontal diseases. |

**Abstract:**

In the present study, broad spectrum antibiotic sparfloxacin has been incorporated in the thiolated chitosan films for periodontal applications. Drug loaded polymeric periodontal films were further evaluated for various physical parameters like thickness, content uniformity, in-vitro static dissolution, mass balance studies, tensile strength and stability studies. Fourier transform infrared (FTIR) spectral studies indicated absence of inter action between drug and polymer. *In vitro* sparfloxacin release studies were conducted in pH 7.2 buffer solution and treated with various mathematical models to understand release behavior. Clinical studies of the fabricated periodontal strips were also carried out in select number of patients 10 numbers with symptoms of periodontal diseases. Results indicated sparfloxacin loaded films showed significant gain of attachment along with reduction in probing depths.

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| 5. | Journal of Pharmacy Research<br>3(5), 2010, 1107-1109. | Nadagouda Smitha G<br>Karigar Asif A,<br>Joshi V. G<br>Sikarwar Mukesh S. | Validated HPTLC method for mangiferin in *Salacia chinensis.* |

**Abstract:**

A high performance thin layer chromatographic (HPTLC) method was developed and validated as per ICH (International conferences on harmonization) guidelines for simultaneous quantification of mangiferin in *Salacia chinensis* roots. For achieving good separation mobile phase of ethyl acetate –methanol (40:60) on precoated silica gel 60 F254 HPTLC plates were used. The densitometric quantification of mangiferin was carried out at ?= 254 nm in reflection–absorption mode after spraying with acetic anhydride: sulphuric acid: ethanol reagent. The calibration curve were linear with good correlation coefficient (0.998 – 0.999). The method was found to be reproducible for quantitative analysis of mangiferin in *Salacia chinensis* root collected from different locations and will serve as a quality control indicator to monitor the commercial production of mangiferin and its allied molecules.

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| 6. | Journal of Pharmacy Research<br>3(4), 2010, 828-830. | Nadagouda Smitha G,<br>Karigar Asif A,<br>Sikarwar Mukesh S,<br>Geetanjali S.S. | Anti-inflammatory activity of *Pongamia Pinnata* stem brk in rats. |

**Abstract:**

In the present study, the anti-inflammatory activity of aqueous extract of *Pongamia pinnata* stem bark (PPSB) in acute and chronic models of inflammation was evaluated in albino rats. Oral administration of PPSB (400, 800 mg/kg) exhibited significant anti-inflammatory activity in acute (carrageenin induced hind paw edema) and chronic (cotton pellet granuloma) models of inflammation. PPSB did not show any sign of toxicity and mortality up to a dose level of 8000 mg/kg, p.o. in rats. Both acute as well as chronic administration of PPSB (400 and 800 mg/kg, p.o.) did not produce any gastric lesion in rats. These results indicate that PPSB hold significant anti-inflammatory activity without ulcerogenic activity. Thus it can be used as anti-inflammatory agent in the treatment of various inflammatory diseases.

## DEPARTMENT OF PHARMACOGONOSY

| Sl. No. | Name of Journal, Volume No. Issue and Period | Author/s | Title of the article |
|---|---|---|---|
| 1. | Journal of Pharmacy research,<br>3(9),2010,2186-2189. | S. M. Biradar,<br>A.T. Rangani, Joshi ,<br>V.H.Kulkarn,<br>Hanumanthachar,<br>P.V. Habbu, Smita DM | Prevention of onset of Hyperglycemia by extracts of Argyriea cuneata on alloxan-induced diabetic rats |

**Abstract:**

The antidiabetic activity of Ethanol extract of leaves of *Argyriea cuneata* was evaluated in alloxan-induced diabetic rats. The various parameters like fasting serumglucose, body weight, total cholesterol, triglycerides, high density lipoprotein, total protein and oral glucose tolerance test were studied. The results were foundto be significant antidiabetic by reducing the serum glucose level, improving body weight, attenuating the altered lipid profile toward the normal by reducing theelevated total cholesterol and triglycerides, and increasing the high density lipoprotein and total protein level. Therefore the present study justifies that the ethanolextract of *Argyriea cuneata* exhibits significant antidiabetic activity.

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| 2. | October – December 2010 RJPBCS 1(4) Page No. 429-432 | Shastry RA, Biradar SM Mahadevan KM, Habbu P.V | Isolation and Characterization of Secondary Metabolite from Amorphophallus paeoniifolius for Hepatoprotective activity |

**Abstract:**

The present study was designed to isolate the flavonoid from the ethylacetate fraction of corm of *Amorphophallus paeoniifolius* by colum chromatography using gradient elution method. The isolated flavonoid was characterized by spectral studies and screened for hepatoprotective activity on ccl4 induced model. The flavonoid (Quercetin) was subjected to various biochemical parameters such as SGOT, SGPT, SALP, bilirubin, total protein and histopathology of rat liver were studied. The results were found to be significant ($P<0.01$) by reducing the elevated enzyme levels, increasing the protein level and attenuating the damaged hepatocytes toward the normal texture. The results were further supported by histopathology of isolated rat liver. Therefore the present study justifies that the isolated flavonoid (Quercetin) exihibits significant hepatoprotective activity.

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| 3. | Oriental Pharmacy and Experimental Medicine 2010 10(4), 278-287 | Shalin Thakker, S M Biradar, PV Habbu, V P Veerapur KM Mahadevan, BS Thippeswamy | Cardioprotective effect of Argyreia speciosa (Burm. f) Boj. extracts against Isoproterenol- induced myocardial infarction in rats |

**Abstract:**

The present study was undertaken to evaluate the protective effect of ethanol (EtAS), ethyl acetate(EAAS) and aqueous (AQAS) extracts of Argyreia speciosa (AS) roots against Isoproterenol (ISO)-induced myocardial infarction in rats. The animals were exposed to isoproterenol (200 mg/kg.s.c) twice at an interval of 24 hrs. Cardioprotective effect was assessed by observing ECGparameters, serum marker enzymes and histopathology of the heart. Pretreatment of EAAS, and EtAS (200 mg/kg) resulted in a significant ($P < 0.001$) increase in P wave, QRS complex and R-R interval, whereas heart rate, QT interval and cardiac cycle were maintained near to normal values.EtAS and EAAS showed significant ($P < 0.05$; $P < 0.001$) reduction in all the tested diagnostic markers compared to ISO treated group. Histological studies on the structural changes of heart tissuesupported the protective activity of AS. The result suggest that treatment of AS prior to ISO has a significant role in protecting the animals from ISO induced myocardial infarction

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| 4. | International Journal of Green Pharmacy April-June 2010 \| | PV Habbu, Pratap V, KM Mahadevan, H. Kulkarni, Marietta P, B S Thippeswamy V PVeerapur | Antiamnesic potentiality of Argyreia speciosa, (Burm.f) Boj. in mice |

**Abstract:**

Several '*rasayana*' herbs that are enlisted in Indian system of medicine have been in use for the treatment of age-related neurodegenerative disorders including Alzheimer's disease (AD). Roots of *Argyreia speciosa* are used in several Ayurvedic preparations as brain tonic and nervine tonic. The present work was undertaken to justify the traditional claim of the plant as nootropic and antiamnesic agent in mice. The

ethyl acetate and ethanolic fractions (EtAS) of roots were selected for the study. Exteroceptive behavioural models such as elevated plus maze and Water maze were used to assess the short-term memory, whereas, scopolamine and natural ageing- induced amnesia served as interoceptive models. The whole brain acetyl cholinesterase activity was measured to assess the effect of *A. speciosa* on the central cholinergic system. Scopolamine (0.4 mg/kg, i.p.) increased the transfer latency significantly ($P<0.01$) in young miceon the first and second day as compared to control indicating the impairment of memory. Pretreatment with EAAS (100 and 200 mg/kg, p.o.) significantly ($P<0.01$) attenuated scopolamine and ageing-induced amnesia. Escape latency time was recorded in the water maze model as an index of acquisition, and trials were conducted for 4 days. The mean time spent in target quadrant (TSTQ) during retrieval trial on fifth day was taken as the index of retrieval (memory). EAAS (100 and 200 mg/kg, p.o.) administered before the training trial (from day 1 to day 4), significantly ($P<0.01$) attenuated scopolamine and ageing-induced decrease in TSTQ during the retrieval test on the fifth day. EAAS (100 and 200 mg/kg, p.o.) significantly produced reduction in whole brain acetylcholinesterase (AChE) activity of both young and aged mice thus exhibiting anti-AChE activity in whole brain homogenate compared to Piracetam,scopolamine and control groups of mice. The results indicate that *A. speciosa* has significant nootropic and antiamnesic activity, justifying its traditional use in Ayurveda.

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| 5. | Oriental Pharmacy and Experimental Medicine 10(2) 2010 . | PV Habbu, V.H. Kulkarni KM Mahadevan, Marietta P , Pratap V, B S Thippeswamy, V P Veerapur | Antidiabetic activity of Argyreia speciosa (sweet)(Burm.f.)Boj. in normoglycemic and Streptozotocin- induced diabetic rats |

**Abstract:**

Effect of ethanol (ASE) and water (ASW) extracts of Argyreia speciosa on blood glucose and lipid profile was investigated in normoglycemic and Streptozotocin (STZ)-induced diabetic animals. In oral glucose and sucrose tolerance test, treatment with ASE and ASW (100 and 200 mg/kg) and Glibenclamide (10 mg/kg) significantly improved the glucose and sucrose tolerance in normal animals. In addition, respective treatment for fifteen-day resulted in significant percentage reduction in serum glucose (SG) ie., 30.39% (lower dose of ASE) and 33.21% (higher dose of ASW). In standardized STZ (50mg/kg,iv)-induced diabetic rats, a single dose of ASE and ASW treatment exhibited reduction in SG levels at different time intervals compared to basal levels.Administration of both the doses of ASE and ASW for fifteen-day days exhibited greater percentage reduction in glycemia (24.6%, 24.7%, 23.9% and 21.9% respectively) and also ameliorated restored to near normal value of all tested lipid parameters. Further, treatment also exhibited significantly improved glucose tolerance over the period of 120 min compared to diabetic control group. Eventhough treatment failed to increase serum insulin levels significantly but peripheral utilization of insulin was increased as evident by insulin tolerance test. Taken together, present study supports the traditional usage of title plant in the treatment of diabetes mellitus.

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| Sl. No. | Name of Journal, Volume No. Issue and Period | Author/s | Title of the article |
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| 1. | International Journal Pharmtech research. 2010,2(1): 84-88. | MV Rampure, SA Raju, SB Shirsand, PV Swamy, D Nagendrakumar, B.Basawaraj D. Raghunandan | Formulation and evaluation of orodispersible tablets of alfuzosin. |


**Abstract:**

In the present work, orodispersible tablets of alfuzosin were prepared by sublimation method with a view to enhance patient compliance. In this method, camphor was used as subliming agent along with varying concentrations of croscarmellose sodium, crospovidone and sodium starch glycolate 2-10% w/w. The prepared batches of tablets were evaluated for hardness, friability, drug content uniformity, wetting time, water-absorption ratio and *in-vitro* dispersion time. Based on in-*vitro* dispersion time (approximately 5 seconds). Three promising formulations (one from each superdisintegrants) were tested for *in-vitro* drug release pattern (in pH 6.8 phosphate buffer), short term stability (at 40°C/75% Relative humidity for three months) and drug-excipient interaction (IR spectroscopy). Among the promising formulations, the formulation SCP3 containing 10% w/w crospovidone and 30% w/w camphor as subliming agent emerged as the best formulation (t50%1.44 minutes) based on drug release characteristic (in pH 6.8 phosphate buffer) compared to controlled formulation (t50%15 minutes). Short-term stability studies on the promising formulation indicated that there are no significant changes in drug content and *in vitro* dispersion time ($p < 0.05$).


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| 2 | International Journal of Pharma and Bio Sciences 1 (4),2010. | Mahadevappa V. Rampure, Basawaraj Bendegumble, S. Appala Raju, Raghunandan Deshpande, P.V. Swamy | Formulation Design of Rapidly Disintegrating PhenobarbitoneTablets by Direct Compression Method |


**Abstract:**

In the present work, fast dissolving phenobarbitone tablets were prepared by direct compression method with a view to enhance patient compliance. The methodology worked out was by using three superdisintegrants (2-8%w/w) i.e., L-hydroxypropyl cellulose (L-HPC), pregelatinized starch, Crospovidone with varying concentration of microcrystalline cellulose(5-15%w/w) were used and directly compressible mannitol (Pearlitol SD 200) was used as a diluent to enhance the mouth feel. The prepared batches of tablets were evaluated for hardness, friability, drug content uniformity and In-vitro dispersion time (approximately 7 s). Three promising formulations were tested for drug release pattern (in pH 6.8 phosphate buffer), short term stability (at 40°/75% RH for three months) and drug-excipient interaction (IR spectroscopy). Among the promising formulations, the formulations FCP3 (containing 8% w/w of crospovidone and 15% w/w of microcrystalline cellulose) emerged as the overall best formulation (t50% 1.45 min) based on the in-vitro drug release compared to conventional commercial tablet (t50% 15 min). Short-term stability studies on the formulations indicated that there are no significant changes in drug content and In-vitro dispersion time.


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| 3. | Indian Journal of Pharmaceutical Sciences, 71, 1, 2010 | S B Shirsand, Sarasija Suresh, P V Swamy, M S Para, D Nagendra Kumar. | Formulation Design of Fast Disintegrating Tablets using Disintegrant Blends |

**Abstract:**

In the present work, fast disintegrating tablets of prochlorperazine maleate were designed with a view to enhance patient compliance by direct compression method. In this method, crospovidone (up to 3% w/w) and croscarmellose sodium (up to 5% w/w) in combination were used as superdisintegrants. Since disintegrants complement each other, accelerating the disintegration process when used together. Estimation of prochlorperazine maleate in the prepared tablet formulations was carried out by extracting the drug with methanol and measuring the absorbance at 254.5nm. The prepared formulations were further evaluated for hardness, friability, drug content uniformity, *in vitro* dispersion time, wetting time and water absorption ratio. Based on *in vitro* dispersion time (approximately 12 s), one promising formulation was tested for *in vitro* drug release pattern in phosphate buffer pH 6.8 and short-term stability (at 40º/ 70% RH for 3 m), drug-excipient interaction (IR spectroscopy) were studied. Among the formulations tested, formulation DCPC $_4$ containing 5% w/w of croscarmellose sodium and 3% w/w of crospovidone as superdisintegrant emerged as the overall best ($t_{50\%}$ 7.0 min) based on drug release characteristics in pH 6.8 phosphate buffer compared to commercial conventional tablet formulation ($t_{50\%}$ 17.4 min). Short-term stability studies on the promising formulation indicated that there were no significant changes in drug content and *in vitro* dispersion time ($p<0.05$).

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| 4. | Indian Journal of Pharmaceutical Sciences, 72, 4, 2010 | S B Shirsand, Sarasija Suresh, L S Jodhana, P V Swamy. | Formulation Design and Optimization of Fast Disintegrating Lorazepam Tablets by Effervescent Method |

**Abstract:**

Fast disintegrating tablets of lorazepam were prepared by effervescent method with a view to enhance patient compliance. A $3^2$ full factorial design was applied to investigate the combined effect of two formulation variables: amount of crospovidone and mixture of sodium bicarbonate, citric acid and tartaric acid (effervescent material) on *in vitro* dispersion time. Crospovidone (2-8% w/w) was used as superdisintegrant and mixture of sodium bicarbonate, citric acid and tartaric acid (6-18% w/w) was used as effervescent material, along with directly compressible mannitol to enhance mouth feel. The tablets were evaluated for hardness, friability, thickness, drug content uniformity and *in vitro* dispersion time. Based on *in vitro* dispersion time (approximately 13 s); the formulation containing 8% w/w crospovidone and 18% w/w mixture of sodium bicarbonate, citric acid and tartaric acid was found to be promising and tested for *in vitro* drug release pattern (in pH 6.8 phosphate buffer), short-term stability and drug-excipient interaction. Surface response plots are presented to graphically represent the effect of independent variables (concentrations of crospovidone and effervescent material) on the *in vitro* dispersion time. The validity of the generated mathematical model was tested by preparing two extra-design check point formulations. The optimized tablet formulation was compared with conventional marketed tablet for drug release profiles. This formulation showed nearly eleven-fold faster drug release ($t_{50\%}$ 2.8 min) compared to the conventional commercial tablet formulation ($t_{50\%}$ >30 min). Short-term stability studies on the formulation indicated that there were no significant changes in drug content and *in vitro* dispersion time ($P<0.05$)

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| 5. | Pharmakine (A Journals of Pharmaceutical Sciences) | D. Gnanasekeren, Dr. KP Channabasava Raju, Dr. Vijay, Channamma G.M | Antipyretic Activity of Methanolic extract of F*icus Glomerata* Bark |

**Abstract:**

To Evaluate the antipyretic activity of methanolic extract of Ficus glomerata bark. (MF) by in-Vitu & in-Vivo study. The methanolic extract of MF was prepared by simle maceration. Thytochemical analysis, toxicity studies of MF was studied. In the present study MF was evaluated for the antipyretic activity Vsina Yeast induced pyrexia method. The results of present study indicating that the MF showed antipyretic activity by inhibiting asclooxygenace or lipo oxygenare. Hence, the antipyretic effect of the MF may be due to its antioxidant principles. In Conclusion the present study provides the phytochemical & biological investigation of the MF was fond to be antipyretic properties were demonstrated.

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| 6. | Pharmaceutical & Biological Archives 2010; 1(4):389-392 | Biradar Kalyani, Khavane K. Payghan Santosh , Settee Ramchanra S. | Evaluatoin of Diuretic Activity of phyllanthus fraternus Web Arial parts On Albino Rats. |

**Abstract:**

The effect of aerial parts of phyllanthus fraternus Web 70% Methenolic extract were tested on castor oil induced diarrhea in rats and charcoal meal test in mice The effect of investigated tested drug was studied at two tested doeses of 100 and 200 mg/kg body weight of the animals. The anti diarrheal activity of tested drug compared with standard drugs (loparamide 10 mg/kg and atropine 1 mg/kg) treated animals. In tested group animals were observed in significantly Reduced in mean stools weight and mean latent period in castor oil induced Diarrnea in rats. In charcoal meal test also markedly reduced in percentage of charcoal movement and the investigated drug was improve the percentage of Inhibitions in dose dependent way.

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| 7. | Pharmacologyonline,3:164-173 (2010) | BiradarKalyani, Shekshavali.T, Vishwanatha Swamy. K. M Ramchandra Setty. | Preliminary Photochemical and Antidiarrhea Studies on Aerial Parts of Phyllanthus fraternus Web |

**Abstract:**

The Study was designed to evaluate the diuretic activity of phyllanthus fraternus web (Euphorbiaceae). The 70% methanolic extract of aerial parts of phyllanthus fraternus were tested by using Wister albino rats, The animals were grouped into 4 groups containing 6 animals were hydrated with normal saline at a dose of 25 ml/kg orally 30sec prior to treatment. The group I served as control, group II&III were treated with 100 mg/kg and 200mg/kg of 70% methenolic extract respectively. Group IV treated with the standard frusemide 20 mg/kg. The volume of urine measured at the end of 6 hrs. The Na, K&Cl ion concentration in the urine samples were determined. The volume of urine (7.38=0.18 & 9.11=0.14) and urinary Na, K&Cl ionic concentrations (3.15=0.15 & 6.15=0.24,2.50=0.10&3.57=0.10 and 5.60=0.13 & 7.39=0.13) were found to rise in test group II and III.

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| 8. | Der Pharmacia Lettre, 2010,2(1),22-24. | S.I.Shivakumar, A. A.Shahapurkar, K.V.Kalmath B.Shivakumar | Anti-inflammatory activity of fruits of *Cuminum cyminum* Linn. |

**Abstract:**

**:** In the present study, Hydro distillation of the fruits of *c.cyminum* Linn. were investigated for anti-inflammatory activity in carrageenan induced rat paw oedema.The volatile oil showed dose dependent inhibition of rat paw edema, at dose of 0.1 ml/kg, body wt. i.p, when compared to control group. The activity was compared with that of the standard drug diclofenac sodium.

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| 9. | Research.J.Pharm and tech, 3(4),Oct-Dec,2010. | Kalmath K.V, Swamy H.K.S, Inamdar S.S. | Polymeric transdermal Drug Delivery Films of Iso- Sorbide Dinitrate. |

**Abstract:**

Matrix type of polymeric transdermal drug delivery films of isosorbide dinitrate an anti-angina agent were formulated by using ethyl cellulose, as a film forming polymer, polyethylene glycol and dibutyl phthalate as plasticizers. The transdermal films were evaluated for physicochemical properties like tensile strength, folding endurance, thickness uniformity, percentage elongation, drug content uniformity. In vitro drug release rate was studied through excised rat's abdominal skin using Keshary-chin diffusion cell. It was found that the increased in the PEG4000 ratio with the polymer increased permeability properties of the polymeric films. The preformulation studies indicate that the polymer and drug are compatible. The drug release from matrix films was found to be of zero order kinetics. The primary skin irritation tests were found to be negative or non significant.

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| 10. | 3. Pharmacologyonline,2,2010,1024- 27 | Shekshavali T, Shivakumar S.I, Kuppast I.J, Sridhar.B.K | Antihelmintic activity of *angeissus Latifolia* Gum exudates. |

**Abstract:**

The gum exudates of *Anogeissus latifolia* investigated for antihelminitc activity against Indian earth worm pheretima posthuma, three concentrations (15, 25, 50 mg/ml) were studied in activity, which involved the determination of time of paralysis and time of death of the worms. The extract exhibited significant antihelminitc activity at higher concentration of 50 mg/ml.It was compared with the crude gum of *Anogeissus latifolia*.Albendazole a standard reference and distilled water control for the first time.

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| Sl. No. | Name of Journal, Volume No. Issue and Period | Author/s | Title of the article |
|---|---|---|---|
| 1. | Pharmakine/June,2010/Vol.II,Issue-IV April-June 2010:14-18. | S.Satanarayana, Nitin M, K. Prasad. | Pharmacodynamic drug interaction of disopyramide with Tolbutamide in normal and Diabetic rats |

**Abstract:**

To study the pharmacodynamic drug interaction of class IA antiarrhythmic drug disopyramide with Tolbutamide in normal and diabetic rats. The pharmacodynamic drug interaction studies were carried out in normal and diabetic rats. The doses of disopyramide selected were half the therapeutic dose ½ Td, TD, 2TD and in combination group, TD of disopyramide and TD of tolbutamide were administered. The dosage calculation was based on therapeutic dose of humans extended to animals. The diabetes was induced by alloxan. The blood glucose was measured by GOD/POD method. Single dose studies of interaction of interaction between disopyramide and tolbutamide enhanced the hypoglycemic effect of disopyramide.

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| 2. | Research.J. Phamacology and Pharmacodynamics, 2010:2(3),:248-251. | Nitin M., Prasad.K., Dastapur A Suryawanshi .S | Influence of Coenzyme Q10 on Phenothiazine Induced Extrapyramidal Symptoms in Rats. |

**Abstract:**

Single dose and multiple dose influence of coenzyme Q10 in chlorpromazine induced catatonia was studies in adult Albino rats of either sex. The study intended to find the role of antioxidant coenzyme Q10 in controlling extrapyramidal side effects. Phenothiazine derivatives produce catatonia as an unwanted side effect when used especially for prolonged periods of time in psychiatric disorders. The catatonia induced in albino rats using chlorpromazine in the dose of 0.9 mg/200g per oral and the degree of catatonia was recorded. Coenzyme Q10 was administered first followed by chlorpromazine after 30 min. P.O. in single dose studies. In multiple dose studies coenzyme Q10 was administered for 8 days followed by the combination of coenzyme Q10 and chlorpromazine on 9$^{th}$ day as described as above and the degree of catatonia was scored. The study reveals that coenzyme Q10 produced statistically significant reduction of extrapyramidal symptoms in both single and multiple dose studies. Thus coenzyme Q10 has beneficial effects in controlling the toxicity symptoms of phenothiazine. Since coenzyme Q10 is used safely in the form of food supplement it can be recommended in patients who are using phenothiazine derivatives for prolonged period of time.

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| 3. | Adv.Pharmacol.Toxicol. 11(2),2010,119- 126,119-126. | K.Prasad., M.Nitin., A.Sahithi., M.Shalini | Studies on Pharmacodynamic interaction Between Glibenclamide and Valproic acid. |

**Abstract:**

The drug interaction between glibenclamide and valproic acid was studies in normal and diabetic rats to determine the pharmacodynamic parameters of interaction. The studies were conducted using 4 groups of normal rats each with 6 rats. Another group of 6 rats were taken and diabetes was induced by administrating alloxan at a dose of 100mg/kg body weight I.P. The rats with glucose level more than 200 mg/dl were considered as diabetic. The experiment was carried out in different stages. A group of rabbits (n=5) were taken and experiment was conducted as in diabetic rats. Multiple dose study was also conducted in rabbits. The blood samples were collected at regular time intervals (0, 1, 2, 4,8,12 and 24 h) and the glucose level were estimated using GOD/POD method. The results indicated that valproic acid did not produce significant reduction in blood glucose level and did not alter the hypoglycemic activity of glibenclamide in normal rats, diabetic rats and normal rabbits. As there is no interaction in two dissimilar species that is rats and rabbits there may not be any interaction in humans also.

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| 4. | Adv. Pharmacol. Toxicol.11(2),2010,95- 104. | Nitin M., Prasad.K., Narasimha Kumar G, Shalini M. | Influence of Vitamin-C on anti-inflammatory and Ulcerogenic Activity of Ibuprofen |

**Abstract:**

The aim of the study was to evaluate the influence of antioxidant Vitamin C on anti-inflammatory and toxicological parameters of ibuprofen. In the present study rat paw edema model was used to assess influence of vitamin C on anti-inflammatory activity of ibuprofen using carrageenan as phlogistic agent. The degree of inflammation was measured plethysmographically once prior to administration of phlogistic agent and thereafter hourly intervals for 3 hours. The cytoprotective activity of vitamin C against ibuprofen induced gastric toxicities was also examined. Ibuprofen shows a maximum anti-inflammatory effect of 62.75% at 3$^{rd}$ hour, which progressively increased and reached a maximum of 70.1% at 3 h under the influence of vitamin C in single dose studies. The anti-inflammatory effect induced by ibuprofen progressively increased and reached a maximum of 73.83% at 3 h under the influence of vitamin C in multiple dose study. Pretreatment of animals for a period of 10 days with vitamin C before administration of ibuprofen prevented ulceration. The ulcer index in vitamin C treated group has decreased to 3.33 ± 0.38 compared to control group in which value was 6.5±0.29. The ulcer index of ibuprofen and vitamin C treated group has decreased to 7.17±0.33 compared to control groups in which the value was 11.33±0.49. Single dose studies with ibuprofen and vitamin C produced enhanced anti-inflammatory effect of ibuprofen in normal adult rats of either sex. Multiple dose studies with vitamin C and ibuprofen (on 11$^{th}$ day) significantly enhanced anti-inflammatory effect of ibuprofen. Vitamin C showed a significant gastroprotective activity against ibuprofen induced GI toxicity in rats.

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| 5. | Research .J Of Pharmaceutical Biological and Chemical Sciences,April- June,2010,1(2),235. | Prakash Patil., Prasad K., Nitin M., Sreenivasa Rao K. | Anti-ulcer and anti-secretory properties of the Pongamia Pinnata root extract with relation to anti-oxidant studies. |

**Abstract:**

The present study was undertaken to determine the anti-ulcer potential and antisecretory properties of the methanol extract of *pongamia pinnata* root extract with relation to in vitro anti-oxidant studies. Methanol extracts of the root *p.pinnata* were tested orally at the doses of 15,20 and25 mg/kg,on gastric ulcerations experimentally induced by aspirin, alcohol and pylorus ligation models. The extract at the dose of 25mg/kg shows 79.30 and 82.20% inhibition when gastric ulcerations were induced by aspirin and ethanol and 66.38% inhibition showed in pylorus ligation at a dose of 20 mg/kg respectively. The methanol extract at 20 and 25 mg/kg was showed significantly inhibited ulcer formation. Methanol extract which contains flavonoids, triterpenes.carotinoids and saponins, which may exhibited an antiulcer properties. To understand the pharmacological action, in vitro anti-oxidant activity of methanol powder, superoxide anion radicals and hydroxyl radical. In all the testing, significant correlation existed between concentration of the extract and percentage of inhibition of free radicals The extract inhibited 72.47,75.86,68.11 and77.46% on lipid per oxidation, reducing power, superoxide anion and hydroxyl radical scavenging activity at a 50ug/ml concentration respectively. The anti-oxidant property may be related to the flavonoids and polyphenol present in the extract. These result clearly indicated that methanol extract of the root *P.Pinnata* is effective against free radical mediated ulcer disease.

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| 6. | Pharmakine,Mar.2010, Vol.II, issueIII,14-19. | Satyanarayana S., Prasad K., Nitin M. | Pharmacokinetic and Pharmacodynamic Drug Interaction Between Tolbutamide and Selegiline In Normal rabbits. |

**Abstract:**

A study was conducted in normal rabbits to find out the effect of selegiline on tolbutamide induced hypoglycemia. A set of five rabbits of either sex were selected and maintained on uniform diet, water, 12h light and dark cycle. The animals were fasted 18h prior to the experiment with free accessibility to water. The experiment was conducted in four stages. Stages-1: rabbit were treated with potable water and blood samples were collected at different intervals and blood glucose was estimated. These results were used as control. Stages-2: The above rabbits were treated with tolbutamide and blood samples were collected at different time intervals. The samples were analyzed for blood glucose and tolbutamide content. Stages-3: After awash out period of four day, the same animals were treated with selegiline. The blood samples were collected at different time intervals and analyzed for blood glucose. Stages-4: After awash out period of four day, the same animals were treated with selegiline followed by tolbutamide after 30 min. The blood samples were collected at different time intervals. The blood glucose and tolbutamide were estimated.

The blood glucose was estimated by GOD/POD method and tolbutamide was estimated by colorimetric wethod.Another set of three rabbits, which were maintained in similar conditions as above were selected. They were administered with selegiline orally. The blood samples were collected initially(0h).peak hour of activity (4h) and at termination of activity (12h).The samples were analyzed for serum insulin level by radioimmunology assay method.It was observed that the drug selegiline produced hypoglycemic activity by increasing serum insulin levels and enhanced the hypoglycemic activity of tolbutamide. The interaction observed was found to be Pharmacodynamic as well as pharmacokinetic.

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| 7. | Int.J.Pharmacol.Biol.Sci,Vol.4(4),2010,1- 10. | Prakash Patil., Nitin M., Tukaram T., Prasad K., Sreenivasa Rao K. | Anti-Ulcer and anti-Secretory properties of the Chlotropic Procera root extract with relation to anti- oxidant studies. |

**Abstract:**

The present study was undertaken to determine the anti-ulcer potential and antisecretory properties of the chloroform extract of *chlotropic procera* root extract with relation to in vitro anti-oxidants. Chloroform extracts of the root *chlotropic procera* were tested orally at the doses of 15,20 and 25mg/kg,ongastric ulcerations experimentally induced by aspirin, alcohol and pylorus ligation models.Theextract at the dose of 25 mg/kg showed 82.20% and 79.30 % inhibition when gastric ulcerations were induced by aspirin and ethanol and 66.38% inhibition showed in pylorus ligation at a dose of 20 mg/kg respectively. The chloroform extract at 20 and 25 mg/kg was showed significantly ($P<0.001$) inhibited ulcer formation. Chloroform extract which contains flavonoids,triterpenes,carotinoids and saponins,which may exhibited an anti-ulcer proprerties.To understand the pharmacological actions, in vitro anti-oxidant activity of chloroform extracts of the root *chlotropic procera* was investigated for activity of scavenging lipid peroxidation,reducing power, superoxide anion radicals and hydroxyl radical. In all extract and percentage of inhibition of free radicals. The extract inhibited 72.47, 75.86, 68.11 and 77.46% on lipid per oxidation, reducing power and superoxide anion and hydroxyl radical scavenging activity at a 50ug/ml concentration respectively. The anti oxidant property may be related to the flavonoids and polyphenol present in the extract. These results clearly indicated that chloroform extract of the root *chlotropic procera* is effective against free radical mediated ulcer disease.

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| 8. | 1. Der Pharmacia Lettre, 2010,2(1),22-24. | S.I.Shivakumar, A.A.Shahapurkar, K.V.Kal Math, B.Shivakumar | Anti-inflammatory activity of fruits of *Cuminum cyminum* Linn. |

**Abstract:**

In the present study, Hydro distillation of the fruits of *c.cyminum* Linn. Were investigated for anti-inflammatory activity in carrageenan induced rat paw oedema.The volatile oil showed dose dependent inhibition of rat paw edema, at dose of 0.1 ml/kg, body wt. i.p, when compared to control group. The activity was compared with that of the standard drug diclofenac sodium.

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| 9. | Research.J.Pharm and tech, 3(4),Oct- Dec,2010. | Kalmath K.V, Swamy H.K.S, Inamdar S.S. | Polymeric transdermal Drug Delivery Films of Iso- Sorbide Dinitrats. |

**Abstract:**

Matrix type of polymeric transdermal drug delivery films of iso sorbide dinitrats an anti angina agent were formulated by using ethyl cellulose, as a film forming polymer, polyethylene glycol and dibutyl phthalate as plasticizers. The transdermal films were evaluated for physicochemical properties like tensile strength, folding endurance, thickness uniformity, percentage elongation, drug content uniformity. In vitro drug released rate was studied through excised rat's abdominal skin using Keshary-chem diffusion cell. It was found that the increased in the PEG4000 ratio with the polymer increased permeability properties of the polymeric films. The preformulation studies indicate that the polymer and drug are compatible. The drug release from matrix films was found to be of zero order kinetics. The primary skin irritation tests were found to be negative or non significant.

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| 10. | Pharmacologyonline, 2,2010,102 4-27 | Shekshavali T, Shivakumar S.I, Kuppast I.J, Sridhar.B.K | Antihelmintic activity of angeissus Latifolia Gum exudates. |

**Abstract:**

The gum exudates of *Anogeissus latifolia* investigated for antihelminitc activity against Indian earth worm pheretima posthuma, three concentrations (15, 25, 50 mg/ml) were studied in activity, which involved the determination of time of paralysis and time of death of the worms. The extract exhibited significant antihelminitc activity at higher concentration of 50 mg/ml.It was compared with the crude gum of *Anogeissus latifolia*.Albendazole a standard reference and distilled water control for the first time.

## R R COLLEGE OF PHARMACY

CHIKKABANAVARA, BAGNALORE – 560 090

## DEPARTMENT OF PHARMACOGNOSY

| Sl. No. | Name of Journal, Volume No. Issue and Period | Author/s | Title of the article |
|---|---|---|---|
| 1. | Journal of tropical medicinal plants, volume-10, issue 2, 2010. | H.J.Pramod, M.B.Patil, C.K.Kokate, M.K.Mamatha | Effect of *Holoptelea integrifolia leaf* extracts on blood glucose level of alloxan induced diabetic rats |

**Abstract:**

The leaf extracts of <>(Planch) was tested at a dose of 200mg/ kg body weight orally for antidiabetic activity using alloxan induced diabetic rats on acute and prolonged treatment. The extracts showed significant ($p<0.01$) antidiabetic results. The results of preliminary phytochemical investigation showed the presence of steroids, triterpenoids in ethanol, aqueous and chloroform extracts. Tannins and phenolic compounds were present. The results obtained were comparable with the standard drug Glibenclamide.

**Keywords:** Antidiabetic, Alloxan, *Holopteleaintegrifolia, Steroids*.

## DEPARTMENT OF PHARMACEUTICAL CHEMISTRY

| Sl. No. | Name of Journal, Volume No. Issue and Period | Author/s | Title of the article |
|---|---|---|---|
| 1. | International journal of Pharmaceutical sciences, Volume-2, Issue 3, Sep- Dec,848-858; 2010. | M. A. Madki, Manzoor AS, PV Powar, KS Patil | Isolation and Biological Activity of Endophytic Fungi from *Withania Somnifera* |

**Abstract:**

Virtually all plants are hosts to bacteria and fungi that can be classified as endophytes. Endophytes are 'microbes that colonize living internal tissues of plants without causing any immediate, overt negative effects'. Many endophytes produce a variety of bioactive molecules, which is currently attracting worldwide scientific investigations towards isolation and exploration of their biotechnological promise. In the present study, *Withania somnifera* (F: Solanaceae) which produces withanine and withanolides used to cure various diseases was selected for exploring the endophytes associated with it. A total 15 endophytic fungi were isolated from different parts of plant like root, stem and leaf. Surface sterilization of plant material was achieved using sodium hypochlorite (10% or 20% v/v) for 10 min. The fungi were isolated by incubating the plant material on potato dextrose agar supplemented with streptomycin (250 $mgl^{-1}$) at 27° . The fungal strains were identified by studying their morphological and microscopical characteristics. The fungi were fermented as static cultures in potato dextrose broth for 21 day at 27° C. The culture broth and mycelium were extracted with ethyl acetate and acetone respectively. The combined extracts were tested for antimicrobial and antioxidant activity. *Aspergillus sp.* (WSF-6) and *Mycelia sterilia* (WSF-14) showed maximum activity against bacteria *B. subtilis*, *S. aureus*, *E. coli* while *Cladosporium sp.* (WSF-15) was most active against fungi *A. niger* and *C. albicans*. TLC of fungal extracts indicated absence of phytochemicals in the extracts. The fungal extracts of *Aspergillus sp.* (WSF-6) and *Paecilomyces sp.* (WSF-12) showed maximum antioxidant activity.

**Keywords:** *Withania somnifera,* Endophytic Fungi, Antimicrobial Activity, Antioxidant Activity

## DEPARTMENT OF PHARMACOLOGY

| Sl. No. | Name of Journal, Volume No. Issue and Period | Author/s | Title of the article |
|---|---|---|---|
| 1. | Journal of ethnopharmacology (article in press) Dec 2010. | H.S.Yogesh, V.M. Chandrashekhar, H.R.Katti , S.Ganapaty, H.L Raghavendra, I.S. Muchchandi, B.Goplakhrishna | Anti-osteoporotic activity of aqueous-methanol extract of *Berberis aristata* in ovariectomized rats |

**Abstract:**

*Ethnopharmacological relevance*: Traditionally *Berberis Aristata* is employed for its supposed properties in treatment of joint pain and also used in alleviating symptoms of menopause *Aim of the study*: The aim of the present study is to evaluate the antiosteoporotic effect of *Berberis aristata* in ovariectomized (OVX) rats.

**Key words:** *Berberis aristata*, Estrogen, Postmenopausal osteoporosis Ash content and Bone mineral density

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| 2. | International Journal of Pharmaceutical Sciences, vol.2, issue 2: 544-550,May-Aug 2010 | Satish kumar.BP, Yogesh.HS, Ganachari.MS, Mohd. Gulzar Ahmed, Rajesh Kowti, Hareesh.AR | Role of Pharmacist in assessment and Education regarding awareness of Organophosphorous Poisoning among the People |

**Abstract:**

**:** To assess and educate the people for creating awareness in handling of Organophosphorous poisoning. The main objective of the present study was to assess the knowledge, attitude and handling of toxic effects of organophosphorous poisoning, and to create an awareness regarding accidental / occupational poisoning. It is an educational intervention study, in which the interviews were conducted among the randomly selected administered to the study subjects before and after educational programme and data were collected and analysed using paired.t. test. Datas were collected and pooled and analyzed under the five aspects of knowledge, they are; storage, handling before spray, handling after spray, organophosphorus poisoning and first aid measures. Results showed that there was significant improvement in the knowledge scores before and after the educational intervention. It was also statistically ($p < 0.0001$) highly significant.

**Key words:** Organophosphorus poisoning; Educational intervention; Leaflets; Agricultural farmers.

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| 3. | International Journal of Pharmaceutical Sciences, vol.2, issue 2: 537-544,May-Aug 2010 | Ramesh Babu K, Raghavendra HL, Kantikar SM, Yogesh HS | Toxicological evaluation and Histopathological analysis of *Terminalia Paniculata* root |

**Abstract:**

In the present study, acute and sub-chronic toxicity of *Terminalia paniculata* Roth. (Combretaceae) was studied. In the acute toxicity single oral dose of 2000mg/kg b.w water suspension of *Terminalia paniculata* was administered to Swiss albino mice of either sex. The results showed no toxicity in terms of general behavior change and mortality and LD50 was found to be more than 2,000 mg/kg. In subacute toxicity study, water extract of *Terminalia paniculata* was administered orally at a doses of 300, 600 and 1200 mg/kg/day for a period of 30 days. Body weight of dosed and control rats increase throughout the duration of treatment. Water extract did not cause any changes in haematological and biochemical parameters. On pathological examination, there were no morphological changes under light microscope in the liver and kidneys at the end of the 30 days study. From the study it can be concluded that at a given doses did notproduce any significant toxic effects in during 30 day period of treatment and is safe.

**Key Words:** *Terminalia paniculata* Roth; OECD; Haematology; Acute; Sub-chronic

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| 4. | International Journal of Drug Development & Research, Vol. 2, Issue 2,356-364, Apr-June 2010. | Ramesh Babu K, Yogesh HS, Kantikar SM Raghavendra HL | Antidiabetic and Histopathological analysis of *Fenugreek* extract on Alloxan induced diabetic rats |

**Abstract:**

*Fenugreek* (Trigonella foenum-graecumL. Leguminosae) is widely used in Indian Ayurvedic medicine for the treatment of diabetes mellitus. Antihyperglycaemic effect of the two different doses (200 and 400 mg/kg) of the fenugreek extract was evaluated in this study. Blood glucose, liver profile, renal profile and total lipid levels were determined in alloxan induced diabetic rats after oral administration of a fenugreek extract. A comparable hypoglycemic effect was evidenced from the data obtained after 7 and 21 days of oral administration of the extract. The extract lowered the total cholesterol and serum triglycerides. Histopathological analysis of pancreas showed normal acini, and normal cellular in the islets of langerhans in the pancreas of normal control and Extensive damage to islets of langerhans and reduced dimensions of islets in alloxan induced diabetes. Restoration of islets of langerhans seen in diabetic rats treated with fenugreek extract. The results of this study clearly shows the hypoglycaemic activity of the extract.

**Key Words**: Alloxan, Fenugreek, Diabetes Mellitus.

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| 5. | Pharmacologyonline 1: 188-199 (2009) | Pattari Lohitha., IS Muchandi, YogeshHS, Shambhu. C.K, V.M.Chandrashekar | Evaluation of Litsea glutinosa bark on Immobilization Stress Induced Sexual Behavior and Fertility of Male Rats. |

**Abstract:**

Physical or emotional stress is a profound disruptive factor to the reproductive function. In males, stress induces suppression of testosterone secretion, spermatogenesis and libido. On the other hand, chronic stress by immobilization has been reported to produce an increase in circulating levels of adrenocorticotrophin, as well as general inhibitory effect on pituitarygonadal function, in males, chronic stress induces low circulating levels of testosterone, prolactin and follicle stimulating hormone. *Litsea glutinosa* bark extracts was evaluated for aphrodisiac as well as infertility treatment activity by studying sexual behavior parameters, number of mounts, ejaculation latency, intromission interval, number of ejaculations, histopathological studies, sperm density, sperm motility for normal as well as immobilization stress induced male wistar albino rats. 300 mg/kg ethanolic and 500 mg/kg aqueous extract possess significant ($P<0.05$) aphrodisiac activity, as compared to normal animals. Significant increase number of mounts ($P<0.001$), ejaculation latency ($P<0.001$), intromission interval ($P<0.001$), number of ejaculation ($P<0.001$) s, and decreased latency of first mount ($P<0.001$) as comparison to control animals. This study provides evidence for significant aphrodisiac and possible male anti-infertility activity with improved testicular performance.

**Key words:** *Litsea glutinosa bark*, testosterone, male anti-infertility, immobilization stress.

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| 6. | International Journal of Pharmaceutical Sciences, vol.2, issue 2:606-611,May- Aug 2010 | Sujatha Muchalambe, Dandagi PM, Yogesh HS, Ravindra R, Gopalakrishna B. | Preparation and evaluation of Sparfloxacin Dental Implants for treatment of Periodontal diseases |

**Abstract:**

Dental implant is a Pharmaceutical device in the form of strip with very small loading and size of 0.25 sq.cm. For site.specific one time continuous delivery of sparfloxacin an antimicrobial compound with excellent activity against anaerobic micro-organisms in the treatment of periodontal disease was prepared by using solvent casting technique using hydroxy propyl cellulose, hydroxy methyl cellulose,eudragit RL-100 and ethyl cellulose with dibutyl phthalate as plasticizer. The physicochemical parameters like thickness, weight variation, content uniformity and release characteristics were evaluated. The drug release was initiaally high on day one to achieve immediate therapeutic level of drug in periodontal pocket followed by marked fall in release by day two with progressive moderate release profile to maintain therapeutic level following anamolous transport mechanism. Formulation F4 released 90.24% of drug at the end of 120 hr and was considered as best formulation. In vitro antibacterial activity was carried out on Streptococcus mutans.

**Key words:** Sparfloxacin, HPMCK4M, hydroxy methyl cellulose,eudragit RL-100 and ethyl cellulose with dibutyl phthalate

## DEPARTMENT OF PHARMACOGONOSY

| Sl. No. | Name of Journal, Volume No. Issue and Period | Author/s | Title of the article |
|---|---|---|---|
| 1. | Journal of tropical medicinal plants, volume-10, issue 2, 2010. | H.J.Pramod, M.B.Patil, C.K.Kokate, M.K.Mamatha | Effect of Holoptelea integrifolia leaf extracts on blood glucose level of alloxan induced diabetic rats |

**Abstract:**

The leaf extracts of <>(Planch) was tested at a dose of 200mg/ kg body weight orally for antidiabetic activity using alloxan induced diabetic rats on acute and prolonged treatment. The extracts showed significant ($p<0.01$) antidiabetic results. The results of preliminary phytochemical investigation showed the presence of steroids, triterpenoids in ethanol, aqueous and chloroform extracts. Tannins and phenolic compounds were present. The results obtained were comparable with the standard drug Glibenclamide.

**Keywords:** Antidiabetic, Alloxan, *Holopteleaintegrifolia, Steroids*.

## B L D E A COLLEGE OF PHARMACY

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| Sl. No. | Name of Journal, Volume No. Issue and Period | Author/s | Title of the article |
|---|---|---|---|
| 1. | International Journal of Biopharmaceutics, ISSN 0976-104 | Kardile D. P<br>Kalyane N V | Synthesis and Biological Evaluation of Thimorpholine Derivates used as a Potent Biological agents |

**Abstract:**

The purpose of this research was to development of new potent bioactive molecule with less toxic. Safer and easy available. Modern therapeutics is based on scientific onservation supported by systematic assessment of acivity of drug is simulated and clinical condition. The integrity of the drug molecule. Optimization of biological effect. Uniform and consistant availability of drug from the dosage. Present work deals with the preparation of thiomorpholin derivatives by muclephilic substitution recaction. Thiomorpholine (I) and P-chlorobenzonitrile (II) on refluz gives 4 thiomorpholine 4ylbenzonitrile (II) then this upon bydrolysis by using sodium hydroxide and methanol gives corresponding a 4thiomoropholine – 4ylenzoyl chloride (V). This is treated with hydrazine hydrate gives 4-thiomorpholin

4ylbenzohydrazide (VI) then this hydrazide is treated with various substituted aromatic aldehyde and heterocyclic compound to form thiomorpholine derivatives.. Hydrazide derivatives were synthesized to increase Log P value by increasing microbial matracellur concentration and to decrease microbial resistance. The newly synthesized compounds were tested for its antimicrobial analgesic anad antinflammatory activity. The structures of newly synthesized compounds were established on the basis of elemental analysis. IR. H NMR and mass spectral data.

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| 2. | International Journal of Applied Biology and Pharmaceutical thenchology, Vol No.3, sep-Dec 2010 | Kardile D. P<br>Kalyne N V | Synthesis and Antimicrobial Activity of 4-Thimorpholine 4Ylbenzohydrazide derivatives. |

**Abstract:**

The purpose of this research was to development of new potent bioactive molecule with less toxic. Safer and easy available. Modern therapeutics is based on scientific onservation supported by systematic assessment of acivity of drug is simulated and clinical condition. The integrity of the drug molecule. Optimization of biological effect. Uniform and consistant availability of drug from the dosage. Present work deals with the preparation of thiomorpholin derivatives by muclephilic substitution recaction. Thiomorpholine (I) and P-chlorobenzonitrile (II) on refluz gives 4 thiomorpholine 4ylbenzonitrile (II) then this upon bydrolysis by using sodium hydroxide and methanol gives corresponding a 4thiomoropholine – 4ylenzoyl chloride (V). This is treated with hydrazine hydrate gives 4-thiomorpholin 4ylbenzohydrazide (VI) then this hydrazide is treated with various substituted aromatic aldehyde and heterocyclic compound to form thiomorpholine derivatives. Aromatic and Heterocyclic derivatives were synthesized to increase Log P value by increasing microbial matracellur concentration and to decrease microbial resistance. The newly synthesized compounds were tested for its antimicrobial analgesic anad antinflammatory activity. The structures of newly synthesized compounds were established on the basis of elemental analysis. IR. H NMR and mass spectral data.

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| 3. | Acta Pharmaceutica sciencia 2010, 52 137-143 (A Turkey Journal ) | Rashmi Boppana<br>Raghavendra V Kulkarni,<br>Chitrali MallikarjunSetty<br>Navanath V Kalyane | Carboxymethylcellulose-aluminum hydrogel microbeads for prolonged release of simvastatin. |

**Abstract:**

Carboxymethylcellulose based hydrogel microbeads loaded with simvastatin were prepated using inotropic gelation method. The beads were characterized by differential scanning calorimetric analysis (DSC), and scanning electron microscopy (SEM), DSC studies confirmed the amorphous dispersion of the drug in the hydrogel matrix. The effect of crosslinking agent and polymer concentration on drug release was studied. Increase in concentration of crossllinking agent and polymers decreased the release rate of simvastatin. The release data were fitted to an empirical equation to determine the transport mechanism. Drug release followed anomalous/non-Fickian transport mechanism.

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| 4. | Journal of Applied Polymer Sciences, 2010, 116, 1732-1738 (Publisher Wiley Interscience USA) | Swapnil M. More<br>Raghuvendra V, Kulkarni,<br>Biswanth Sa Navanath<br>V. Kalyane | Glutaraldehyde crosslinked poly (vinyl alcohol) hydrogel discs for controlled release of anti diabetic drug. |

**Abstract:**

Hydrogel discs of poly (vinyl alcohol) loaded with gliized, an oral antidiabetic drug, were prepared with glutaradehyde (GA) as a crosslinker. Various formulations were prepared with various amounts of polymer, GA and initial drug. The prepared hydrogel discs were characterized by thermogravimetric analysis, different ial scanning calorimetric analysis, and X-ray diffractometry. The dynamic swelling behaviour and drug-release patterns were dependent on the crosslink density. The hydrogel discs were capable of releasing drug up to 24 hours. The discs that were prepared with a higher concentration of GA released the drug more slowly. The release data were fittede to an empirical quation to determine the transport mechanism, which indicated a non-fickism trend for drug transport.

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| 5. | International Journal of Pharmacy & Life Sciences ISSN 0976-7126 Sep 2010 | Ahmed Syed Shakeel, Kalyane N, V Karajagi SR, Ahmed Md.Liyakat | Synthesis and antibacterial activity of new Schiff ' s bases |

**Abstract:**

Five novel Schiff bases have been prepared from 2-Amino-4(4-acetanilido) thiazole and substituted aromatic aldehyde to form a number of potentially biogically active Schiff bases (SA – SA are compared with standard drug ampicillin against aureas and E.coli.compounds SA and SA shows good activity as compared to standard drug.

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| 6. | Research Journal of Pharmaceutical, Biological and chemical sciences Vol : I issue: 2 April-June 2010 | Simpi Chandraj, Biradar Prakash, Kalyane, Navanath | Immunomodulatory activities of ethyl acetate extracts of two marine sponges Gellidoes fibrosa and Tedania anhelans and browth algae sargassum illicifolium with reference to phagocytosis |

**Abstract:**

**:** In Vitro and In vivo effect of ethyl acetate fraction (ETF) of two marine sponges Gelliodes fibrasa and Tedania anhelans and brown algae sargassum illicifolium were applied on neutrophil phagocytosis activity. The different concentractions f 10,25,50 and 100 ug/ml ETF was tested for phagocytosius as neutrophil locomotion and chemotaxsis test and qualitative nitroblue tetrazolium test uing human neutrophils. Further on Swiss albino mice, of either sex weighing 18-25g selelcted dose of ETF concentrations of 25,50 100mg/kg body weight were administrated po for macrophage phagocytosis activity by carbon clearance test. In vitro study revelead that Tedania anhelans and Sargassum illicifolium has stimulayed chemotatic, phagocytic and intracellur killing of human neutrophils at a dose of 50 ug/ml and 100 ug/ml respectively. In vivo studies of both sponges species have shown moderate immunostimulator activity, whereas algal species have shown prominent immunostimular acitivity.

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| 7. | Research and Reviews in Biomedicine and Biotechnology, volume (1), issue (1), 2010-45-54 | Mohan Kumar K M Throat Dattatraya B Shivakumar Hugar Nagendra Roa B Jayakumar Swamy BHM Shivakumar B | Microwave assisted synthesis of some 2-(N-Arylidene hydazino)-7 Choloro-6-fluro(1,3), Benzothiuazoles as potent antibacterial and antioxidant agents |

**Abstract:**

A series of 2-N-arrylidene hydrazine)-7 choloro-6-fluro (1,3) benzothiazoles (V a-j) have been prepared by condensation reaction fo Aromatic aldehydes with 7-chloro-6-flouro-2-hydrazino-a-3, benzothiazole under microwave irradiated experimental conditions. All the compounds have been screened for their aanti bacterial (in vitro) ad antioxidant activities )in vitro) by standard methods. From the results it is concluded that, the compounds have exhibited siugnification to moderate antibacterial and antioxidant activites.

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| 8. | P. Basavaraj etal./Int.J.Pharm & Health Sci.volume I (2),2010-50-55 | Basavaraj P Shivakumar B Shivakumar H | Ansiolytic activity of tubers extracts of *pueratia tubeereose* (roxb) in mice. |

**Abstract:**

The oresent study was undertaken to evaluate ansiolytic activity of alcoholoic (ALE) and aqueous estracts (AQE) of tubers of Pueraria tuberrosa (Roxb). This plant contains carbohydrates, steroids, tanning triterpenes, flavonoids, proteins, Amino acids and glycosides. Anxiolytic effect of ALE (50, 100, 200 mg/kg and AQI (100,200, 400 mg/kg) of tuber extracts of P.tuberasa (Roxb) was studies and

diazepam used as a standard by using Elevated Plus Maze (EPM), open –Filed Test (OFP) and Light-Dark Transition Test (LDT). The diazepam and medium and higher doses of extracts had showed significant anxioytic activity and not with lower doses of both the extracts. The results suggested that the extracts having better anxiolytic activity which is comparable to the standard drug used for the same purpose.

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| 9. | Schoolras research Library, ISSN 0974-248N USA CODEN : DPI: 84 | S. I Shivakumar<br>A. A. Shahapurkar<br>K.V, Kalmnath<br>B. Shivakumar | Antiinflammatory activity of fruits of *Cuminum cyminum* Linn |

**Abstract:**

In the present sutyd, hydrogistillation of the fruits of C. Cymimum Linn (Umbelliferare) were investigated for anti-inflammatory activity in carrageenan-induced rat paw oceema. The volatile oil showed dose-dependent inhibition of rat oedema, at dose of 0.1 ml/kg, body wt i.p when compared to control group. The activity was compared with that of the standard drug. Diclofenac sodium.

## N E T COLLEGE OF PHARMACY

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| Sl. No. | Name of Journal, Volume No. Issue and Period | Author/s | Title of the article |
|---|---|---|---|
| 1. | Der pharmacia Lettre, 2010, 2(3): 186-196 | Doddayya Hiremath,<br>Prakash S. Goudanavar,<br>Dipak S. Phalak,<br>Sarfaraz Md. | Design and in-vitro evaluation of extended release matrix tablets of Itoproide hydrochloride |

**Abstract:**

This work aims at investigating different types and levels of hydrophilic matrix agents from synthetic origin, hydroxypropyl methylcellulose K100M, and from natural origin, gum karaya, in an attempt to formulate extended release matrix tablets of itopride hydrochloride. HPMC and gum karaya were used alone and in combination to know their efficacy in controlling the release rate of a highly water soluble drug itopride hydrochloride. Itopride hydrochloride is the prokinetic agent which improves GI motility by a dual mode of action, dopamine D2 receptor blockade and acetyl cholinesterase inhibitory action. The tablets, prepared by direct compression, were subjected to physical characterization. Physicochemical interactions between the drugs with excipients were determined by using FTIR and DSC which revealed that there is no interaction between drug with excipients. All the precompression and postcompression parameters were found to be within acceptable limits. From the obtained data it was concluded that,the release rate was strongly influenced by the concentration of the polymers. The formulation F1, F6 and F8 showed the maximum drug release up to 24 h. The mathematical treatment of in vitro drug release data suggest that, selected formulations close to zero order and showed non-Fickian (anomalous) release as all values of release exponent (n) are between 0.5-0.89.

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| 2. | Inventi Rapid : Pharm Tech, 2010 ,Vol 1 issue 1 | H Doddayya,<br>PS Gouddanavar,<br>S. Patil, D Chauhan | Desigh and Evaluation of Time and PH Dependendt Delievery Systems of doxofylline : A Chronopharmaceutic Approach for the Treatment of Nocturnal Asthama |

**Abstract:**

Pulsatile systems are gaining a lot of interest as they deliver the drug at the right site of action at the right time and in the right amount, thus providing spatial and temporal delivery and increasing patient compliance. The basic design of pulsatile drug delivery system consists of

formaldehyde treated hard gelatin capsule body, filled with Eudragit microspheres of doxofylline and plugged with a hydrogel polymer. Microspheres were prepared using combination of Eudragit L-100 and S-100 with different core: coat ratios by solvent evaporation technique. Different plugging materials like Xanthan gum, Locust bean gum and Psyllium husk were used in the design of pulsatile capsule. The insoluble hard gelatin body was cap sealed by 5% ethanolic solution of ethylcellulose and then the entire capsule was enteric coated with HPMCP to render the system insoluble in gastric pH. Dissolution studies of the pulsatile drug delivery system revealed the absence of drug release in first three hours and negligible release in the fourth hour and thus a lag time of 3-4 hrs was achieved. In conclusion, time and pH dependent pulsatile drug delivery system was successfully designed, evaluated for various parameters and found satisfactory with respect to the desired lag time which is needed in the chronotherapeutic delivery of doxofylline in the treatment of nocturnal asthma.

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| 3. | International Journal of Pharmacy and Pharmaceutical Sciences Vol 2, Issue 2, 2010 | Anil S Savali, Prakash R Biradar Manjunath C Jirankalli | Antinaphylatic and maste cell stabilization activity of cynodon dactylon |

**Abstract:**

The objective of the present study was to isolate antianaphylactic and mast cell stabilizing compound from Cynodon dactylon through bioassayguided fractionation. The antianaphylactic activity was evaluated by using compound 48/80 induced anaphylaxis and mast cell stabilization was studied by using peritoneal mast cells of rats. The possible antianaphylactic and mast cell stabilization mechanism was evaluated by using compound 48/80 induced mast cell activation and level of nitric oxide in serum, rat peritoneal mast cells. The present study indicates that the isolated Cynodon dactylon compound (CDC) was potent and has significant ($p<0.01$ and $p<0.001$) inhibitory effect on compound 48/80 induced anaphylactic reaction and mast cell activation. This CDC also inhibited significantly, compound 48/80 induced increased level of nitric oxide in rat serum and rat peritoneal mast cells. We conclude from this study that the isolated CDC is more potent then disodium chromoglycate in producing antianaphylactic activity through mast cell stabilization and inhibition of nitric oxide synthesis.

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| 4. | Journal of pharmacy Research 2010, 3(8), 1810-1813 | Doddayya Hiremath, Prakash Goudanavar Ritesh Vinod Birla, Raghavendra Kulkarni Md. Sarfaraz | Formulation and Evaluation of controllerd release matrix tablets of Ambroxo Hydrochloride |

**Abstract:**

Mefanamic acid, a non-steroidal anti-inflammatory drug is poorly water soluble. Addition of surfactant to the dissolution medium improves the dissolution of pure drug by facilitating the drug release process at the solid/liquid interface and micelle solubilization in the bulk. In the present study a dissolution medium was developed. The composition of the dissolution medium was selected on the basis of solubility data of mefanamic acid at $37^0$c. The solubility data revealed that water consisting of 2% w/v sodium lauryl sulphate can be suitable dissolution medium. The discriminating power of the selected dissolution medium (2% w/v sodium lauryl sulphate in water.) relative to the other dissolution mediums was evaluated and then the results further justified the usage of 2% w/v sodium lauryl sulphate in water as dissolution medium for mefanamic acid.

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| 5. | International Journal of Pharmaceutical Research 2010, Volume 2, Issue 4, 34-39 | Doddaya Hiremath, Prakash Goudanavar, Mohd Azharuddin, Rajagopal, H. Udupi Md. Sarfaraz | Design and Characterization of Bilayer Controlled Release Matrix Tablets of Losartan Potassium |

**Abstract:**

Salbutamol sulfate microcapsules with a coat consisting of sodium alginate and mucoadhesive polymer such as sodium carboxy methyl cellulose (NaCMC), methyl cellulose (MC), carbopol-934, and hydroxy propyl methyl cellulose (HPMC) were prepared by ionotropic

gelation technique and were evaluated for morphological characters, drug content, loading efficiency, drug-polymer interactions, swelling ratio, mucoadhesive properties, and *in vitro* release. The resulting microcapsules were discrete, spherical, and free-flowing, and microencapsulation efficiency was 51.28-96.70%. The microcapsules prepared with alginate alone (A4) have exhibited good mucoadhesive property in the *in vitro* washoff test. The swelling ratio of microcapsules was enhanced with increased alginate concentration. Salbutamol sulfate release from these mucoadhesive microcapsules was slow and extended over a period of 8 h and depends upon the concentration of the alginate. The drug release from alginate-HPMC/carbopol microcapsules followed diffusion-controlled first-order kinetics. The release rate of alginate-HPMC microcapsules (A4H) was higher than other formulations and comparable with commercially available controlled-release capsules. Microcapsules with alginate alone (A4) followed diffusion mechanism. In conclusion, alginate-HPMC/carbopol mucoadhesive microcapsules could be promising vehicle for oral controlled release of salbutamol sulfate.

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| 6. | Research Journal of Pharmaceutical Bilogical and chemical Sciences 2010, Volume 1 Issue 4, 544-49 | Prdnya Patil<br>V R M Gupta | Development of Dissolution medium for poorly water soluble drug Mefanamic acid. |

**Abstract:**

The objective of the study was to develop and evaluate controlled release matrix tablets of ambroxol hydrochloride employing guar gum as a polymer. Controlled release matrix tablets containing 175 mg ambroxol hydrochloride were developed using different drug: polymer ratios. Tablets were prepared by direct compression as well as wet granulation method. FTIR and DSC studies revealed no chemical interaction between drug and polymers used. Precompression parameters were within the limits. Post compression parameters complied with pharmacopoeial limit for the tablets. *In-vitro* release studies were carried out using USP XXIV type II (paddle method) dissolution apparatus at 75 rpm by taking 900 ml of 0.1 N HCl (pH 1.2) as dissolution medium for first 2 hrs and later replacing it with 900 ml pH 6.8 phosphate buffer solution for rest of the time period at 37±0.5OC. The extent of swelling was measured in terms of percentage weight gain by the tablets. Percentage water uptake of matrix tablets was dependent on the concentration of the guar gum. The result of *in vitro* dissolution studies indicated that formulation F5 containing drug: polymer in ratio 1:1 shown better drug release profile. The release of drug from the formulations showed order kinetics.

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| 7. | Asian Journal of Pharmaceutics 2010, Volume 4, Issue 2,141-47 | Pradnya Patil,<br>NG Raghavendra Rao<br>Doddayya Hiremath | Preparation and Characterization of mucoadhesive microcapsules of Salbutamol Sulphate |

**Abstract:**

The objective of the study was to develop and evaluate controlled release bilayer matrix tablets of losartan potassium employing xanthan gum and gum karaya as a polymers. Controlled release bilayer matrix tablets containing losartan potassium were developed using different drug: polymer concentration. Tablets were prepared by direct compression method. Differential scanning calorimetry study revealed no chemical interaction between drug and polymers used. Precompression parameters were within the limits. Post compression parameters complied with pharmacopoeial limit for the tablets. *In-vitro* release studies were carried out using USP XXIV type II (paddle method) dissolution apparatus at 75 rpm by taking 900 ml of 0.1 N HCl (pH 1.2) as dissolution medium for first 2 h and later replacing it with 900 ml pH 6.8 phosphate buffer solution for rest of the time period at 37±0.5oC. The extent of swelling was measured in terms of percentage weight gain by the tablets. Percentage water uptake of bilayer matrix tablets was dependent on the concentration of the xanthan gum and gum karaya. The result of *in vitro* dissolution studies indicated bilayer matrix tablets containing 50% w/w of blend of xanthan gum and gum karaya (L9) has better controlled release over 24 h. The mechanism of drug release was found to be non-fickian diffusion.

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## DEPARTMENT OF PHARMOLOGY

| Sl. No. | Name of Journal, Volume No. Issue and Period | Author/s | Title of the article |
|---|---|---|---|
| 1. | Journal of Pharmacology online, Volume 1,January- April 2010, Page no:(666-675) | Shanmukha. I, Abubaker Siddiq, Gupt Kamlesh, Majam Khan , Ramachandra Setty. S | Antioxidant and Nephroprotective Activity of *Spathodea Campanulata* Bark Against Gentamicin Induced Nephrotoxicity |

**Abstract:**

The present study investigated the protective effect of ethanolic extract of bark of Spathodea campanulata P. Beauv (EEBSC) on gentamicin induced nephrotoxicity in rats. EEBSC was administered to Wistar albino rats in two different doses (250 & 500mg/kg) orally for 11 days. Nephro toxicity was induced by intraperitonial administration of gentamicin at the dose of 80mg/kg for 8 days of treatment protocol. Gentamicin administration resulted in significant increase in the serum marker enzymes like blood urea nitrogen and serum creatinine. In addition these also exhibited significant increase in lipid peroxidation levels and there is marked depletion of reduced glutathione levels (GSH). Pretreatment of EEBSC orally was found to ameliorate the effects of gentamicin on lipid peroxide formation and showed a decrease in serum marker enzymes. It also prevented depletion of tissue GSH levels. The histopathological studies of the kidney revealed a protective role of EEBSC in gentamicin treated rats. The results exhibited that the pretreatment with ethanolic extract of Spathodea campanulata bark may be useful in preventing the damage induced by gentamicin in rat kidneys.

**Key words:** Antioxidant; GSH; Lipid peroxidation; Marker enzymes; Gentamicin.

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| Sl. No. | Name of Journal, Volume No. Issue and Period | Author/s | Title of the article |
|---|---|---|---|
| 1. | Indian Journal of Natural Products and Resources, Vol.1(3), September 2010 | V. Madhavan<br>H T Hemalatha<br>M R Gurudeva<br>SN Yoganarasimhan | Pharmacognostical studies on the rhizome and root of *Smilax zeylanica* Linn.- A potential alternate source for the Ayurvedic drug Chopachinee |

**Abstract:**

*Chopachinee* is an important Ayurvedic drug used in several formulatons and diseases. *Smilax* Linn. species are used as botanical source of *Chopachinee* while the accepted source is *Smilax china* Linn. *Smilax zeylanica* Linn. a potential alternate source for *Chopachinee,* occurring in South India is Pharmacognostically investigated in this paper. It is used in the treatment of venereal diseases, skin disorders, sores, swellings, abscesses and as a substitute for sarsaparilla. The present study comprises taxonomical, macroscopical, microscopical characters, physico-chemical and ultra-violet analysis besides chromatographic studies of the rhizome and root which not only help in the identification of the drug but also contribute towards establishing pharmacopoeial standards. HPTLC finger printing of diosgenin present in the drug is carried out to establish the biomarker compound.

**Keywords:** *Smilax zeylanica*, Smilacaceae, *Chopachinee*, Rhizome, Root, Pharmacognosy, Diosgenin, Ayurvedic Drug.