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Proceedings of APP 4th Annual National Convention

Theme: 'Industry Participation in Academic Intervention: Need for Overall Upgradation of Pharmacy Profession'

Venue: Invertis Institute of Pharmacy, Invertis University, Bareilly (UP), India

(31st January, 2015)

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[31st January, 2015 – Invertis Institute of Pharmacy, Invertis University, Bareilly (UP), India]

ASSOCIATION OF PHARMACY PROFESSIONALS (APP)

4TH ANNUAL NATIONAL CONVENTION

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ORATIONS

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OP-01

BASIC FORMULATION AND CLINICAL INVESTIGATION OF VALUE ADDED PRODUCT OF *STEVIA REBAUDIANA* BERT. AQUEOUS LEAVES EXTRACT

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The present study revealed the safety and efficacy of some value added products of aqueous extract of *Stevia rebaudiana*. Pharmaceutical gel and vanishing creams were prepared and evaluated for the period of single application over 21 days as skin moisturizer. 2.5% and 5.0% vanishing cream and gel were prepared after evaluation of toxicity studies. The creams were O/W emulsion based formulations containing suitable combination of oil phase and aqueous phase along with preservatives. Stability studies were carried out at different temperatures for the period of 3 months as per ICH guideline and results revealed that both the formulations showed good stability. Further preclinical study was evaluated on rabbits for safety study of both the products and then an open, prospective, placebo controlled clinical trial were conducted with healthy sixty subjects for prepared gel in Government Ayurvedic College, Bangalore for a period of 21 days for safety study. All the subjects were followed up at weekly intervals for a period of 3 weeks. Response to moisturizer gel was evaluated on a scoring system and visual analogue scale. All the subjects were completed the study and significant results observed with respect to reduction in dark complexion, increased in skin softness, skin glow. Measurement of skin hydration after single application of *Stevia* gel during 3 weeks daily was significantly higher (P value <0.001, paired t-test) than the control skin. The gel is completely free from any reaction due to sun light. None of the volunteers experienced neither any hypersensitivity reactions nor in changes of skin pH and compliance to the use of formulation was potent.

ORAL PRESENTATION

【B1】

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OP-02

SYNTHESIS, CHARACTERIZATION AND ANTIMICROBIAL ACTIVITY OF NOVEL TETRAZOLE DERIVATIVES

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The synthetic work deals with the preparation and anti microbial activity of 5-substituted tetrazoles. It also deals with the identification of effect of different substituent groups on benzene ring of 5-substituted tetrazoles. Replacement of one CH group of benzene ring of tetrazole with different substituent group showed anti microbial activity. Synthesis was by Thieles method, which involves reaction between amino guanidine and nitric acid to give 5-amino tetrazole, which reacts with acetyl chloride to yield 5-acetyl tertrazole which on reaction with different aldehydes, yielded chalcones. All the five compounds were characterized by means of IR, NMR spectral data. The anti microbial activity of these compounds was evaluated by Cup plate method, and the screening was done against bacteria like *Escherichia coli, Bacillus pimilis, Staphylococcus aureus*. The newly synthesised compounds showed activity against organisms. Substitution of electron releasing groups like CH_3 showed effective activity and electron withdrawing groups like Chlorine and Bromine showed moderate activity.

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【B2】

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OP-03

SIMULTANEOUS QUANTIFICATION AND VALIDATION OF GLIMEPIRIDE AND EZETIMIBE BY RP-HPLC IN BULK AND PHARMACEUTICAL DOSAGE FORM

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A simple, rapid, precise and isocratic RP-HPLC (Reverse Phase High Performance Liquid Chromatography) method is aimed to develop for the simultaneous estimation of Glimepiride and Ezetimibe in bulk drug and pharmaceutical dosage form. The quantification was carried out using BDS 250 mm × 4.6 mm, 5μ column and the mobile phase comprised of 0.01 N Potassium dihydrogen ortho phosphate and Acetonitrile (70:30 *v/v*). The flow rate was 1.0 ml/min. The eluent was monitored at 247 nm. The retention times of Glimepiride and Ezetimibe were 2.76 min and 3.65 min respectively. The method was validated in terms of linearity, precision, accuracy, and specificity, limit of detection and limit of quantitation. Results indicated that linearity and percentage recoveries of both Glimepiride and Ezetimibe were in the range of 2.5-15 μg/ml and 25-150 μg/ml respectively. The stress testing of both the drugs individually and their mixture is carried out under acidic, alkaline, oxidation, photo-stability and thermal degradation (dry heat and wet heat) conditions and its degradation products are well resolved from the analyte peaks. This method was successfully validated for accuracy, precision and linearity.

ORAL PRESENTATION

【B3】

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OP-04

NATURO-ALLOPATHY

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Today, with the emergence of advances in the faculties of science, the concept of alternative medicines is also growing popular. Alternative medicine assimilates ancient traditions and experience with modern science. The practice of alternative medicine mainly focuses on natural healing power of the body and works on the concept of "preventative maintenance". Alternative medicine is the practice of medicine using nutrition, herbs, homeopathy, supplements and other forms of natural health care for betterment of health. Principles of alternative medicines are based on the state of mind, body and its positive and negative interaction. Roots of these medicine traced thousands year back to Indian and Chinese civilization (Ayurvedic and Chinese medicines). Naturopathy is one of the popular and widely accepted systems of alternative medicine. Naturopathy system is a distinct system of healthcare. It is considered as science, philosophy and practice of diagnosis, treatment and prevention of illness including some chronic diseases. Allopathy as a modern science believes in the use of drugs for the treatment of disease (mainly symptoms of disease). Faculties of science support allopathy because treatment in allopathy is basis on detail and elaborative study of anatomy, physiology of the human body and pathophysiology of the disease. Mechanism of action of drug can be explained and supported with several experiments. No drug can be used in human body before studying its efficacy in the animals. Allopathy is always a better choice for patients who want fast relief from the disease. Supportive hand-in-hand growth of naturopathy and allopathy would definitely add in the betterment of health and open a new era in medical sciences. Naturo-allopathy may be the new dawn of medical sciences.

ORAL PRESENTATION

【B4】

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OP-05

ALPHA AMYLASE INHIBITORY ACTIVITIES OF LEAVES EXTRACT OF *ANNONA SQUAMOSA* LINN. IN STZ INDUCED DIABETIC RATS

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The leaves of *Annona squamosa* (AS) are reported to have anti-diabetic property, but its active principle and mechanism of action is not known. Here, different extracts of *Annona squamosa* (AS) hexane (ASHE), chloroform (ASCE), butanol (ASBE), hexane washed methanol (ASMHx), total methanol (ASME) extract and water decoction (ASWD) were prepared, characterized and tested for their inhibitory property against activity of intestinal *α*- amylase under *in vitro* conditions. The hexane extract (ASHE), which showed lowest IC_{50} 0.925 mg/ml, was further tested in the STZ induced diabetic rats (*in vivo* study). Its hypoglycemic response was correlated with inhibitory activity on α-amylase in intestinal homogenate by using different doses and compared with standard drug *i.e.* Acarbose. The ASHE significantly reduced the raised glucose to 41.18±2.46 % at 100 mg/kg bw and 78.10±1.57 % at 400mg/kg bw and simultaneously inhibited the activity of α-amylase to tune of 76.69±2.52% at 100 mg/kg bw and 86.67±2.30% at 400 mg/kg bw. Thus, it could be suggested that the ASHE has hypoglycemic response by inhibition of α-amylase activity in small intestine and used for postprandial hyperglycemia.

ORAL PRESENTATION

【B5】

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OP-06

IN-VITRO ANTI-INFLAMMATORY AND ANTI-ARTHRITIC ACTIVITY OF *PONGAMIA PINNATA* SEED EXTRACT

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Pongamia pinnata (L.) Pierre (Family: Leguminoseae) is a medicinal plant which is indicated for the treatment of arthritis in folklore medicine. The present study was aimed at the investigation of anti-arthritic and anti-inflammatory activity in hydroalcoholic extract of *P. pinnata.* The anti-arthritic and anti-inflammatory activity of *P. pinnata* hydroalcoholic extract was done by Inhibition of protein denaturation and Human red blood cell membrane stabilization (HRBC) in vitro methods. The hydroalcoholic extract of *P. pinnata* was subjected to in vitro Inhibition of protein denaturation in various concentrations *i.e.* 10, 50, 100, 200, 400, 800, 1000 and 2000 µg/ml. HRBC method was also used for the estimation of anti-inflammatory activity in various concentrations 100, 200, 400, 800 and 1600 µg/ml. *P. pinnata* hydroalcoholic extract exhibited a concentration dependent inhibition of protein (albumin) denaturation. The stabilization of HRBC membrane showed a concentration dependent anti-inflammatory activity, and the protection percent increased with increase in the concentration of the *P. pinnata* hydroalcoholic extract. The present study is support to the isolation and use of phytoconstituents from seed of *P. pinnata* in treatment of inflammation and arthritis.

ORAL PRESENTATION

【B6】

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OP-07

EXTRACTION AND CHARACTERIZATION OF GUM FROM *LEPIDIUM SATIVUM* LINN. AND *HIBISCUS ESCULENTUS* LINN. FOR ITS FILM FORMING PROPERTIES AND STUDIES ABOUT RELEASE CHARACTERISTIC OF THESE FILMS

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Lepidium sativum and *Hibuscus esculantus* gums were evaluated for film forming properties and its action on drug release characteristics. Diclofenac sodium was selected as model drug for the drug release characteristic. The XRD and DSC study gives the idea about best coating of film on microspheres. XRD study indicated the dispersion of drug after coating on microspheres. The effect of gum film on release profile of drug was calculated. Diclofenac released from gum coated microspheres was slow over 24 h and dependent core:coat ratio of microspheres and release rate. Gum coated microspheres of diclofenac exhibited good sustained release characteristics and were found suitable for once a day sustained release product.

ORAL PRESENTATION

【B7】

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OP-08

RATIONAL APPROACH TO FIND SOME PHENYL THIAZOLYL TRIAZINE DERIVATIVES AS *PF* DHFR INHIBITOR

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Drug targeting to specific organs and tissues has become one of the critical endeavours of the new century. The search for new drug delivery approaches and new modes of action represent one of the frontier areas which involves a multidisciplinary scientific approach to provide major advances in improving therapeutic index and bioavailability at site specific-delivery. A number of drug delivery systems are currently under investigation to circumvent the limitation commonly found in conventional dosage forms and improve the potential of the respective drug. On the other hand, there has been a focus on the microenvironment of the cells and their interaction with these new dosage forms. The field of pharmaceutical science has been developing steadily over the years, and has today become invaluable in helping to keep us healthy and prevent disease. A library of molecules was designed in accordance with the structural property of most active antimalarial antifolate WR99210. These Designed molecules were then docked with the appropriate protein. Based upon the docking score and estimated binding energy, few molecules were selected and synthesized. These synthesized molecules were then farther purified using different purification techniques. *In vitro* antimalarial activity for the selected purified molecules was evaluated against *Plasmodium falciparum* strain (3D7). Percentage of dead cell was calculated and compared with the standard.

ORAL PRESENTATION

【B8】

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OP-09

COMPARATIVE STUDIES ON ETHANOLIC EXTRACT OF ROOT AND STEM BARK OF *FICUS CARICA* FOR ANALGESIC AND ANTI-INFLAMMATORY ACTIVITIES

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Ficus carica (Moraceae) is traditionally used as an antinociceptive and anti-inflammatory agent. The objective of this study was to investigate experimentally the possible comparative studies on ethanolic extract of root and stem bark of *Ficus Carica* for analgesic and anti-inflammatory properties. The effect of Ethanolic extracts of root and stem bark of *Ficus carica* (EFCR and EFCSB, respectively) was evaluated in experimental models of pain and inflammation. The root extract at 300 and 600 mg/kg showed significant decrease in acetic acid induced writhings in mice with a maximum of 45.63 % and stem bark extract showed 35.84%. In tail immersion and hot plate method, treatment with EFCSB (300 and 600 mg/kg) showed significant ($p<0.001$) pain latencies as compared to vehicle treated group of animals. There was a significant ($p<0.001$) inhibition in carrageenan induced paw edema with EFCSB 300 and 600 mg/kg. The anti-inflammatory effects observed with the extract were comparable to that of standard. The data showed EFCSB was more potent EFCR at 300mg/kg and 600mg/kg. The present study indicated that the Ethanolic extract of *Ficus crica* root and stem bark exhibited significant antinociceptive and anti-inflammatory activities .

ORAL PRESENTATION

【B9】

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OP-10

MITOCHONDRIAL DNA AND Y CHRMOSOMAL VARIATION ASSOCIATED IN HIGH ALTITUDE INDIAN POULATION

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Climatic and mountain conditions of Ladakh are extremely high to live, the life of a common man is really impractical in these areas because of varying ranges of the temperature and higher altitude which corresponds to make it improper place of habitation. Still, there are tribes which belong the Indo-European subspecies of Indian tribes have been living there since from ages. Hence, they have developed resistance against these harsh climatic regions. It was believed that the tribal population of Ladakh is highly conserved from the ethnicity point of view. Possible reasons for the cause may be the climatic barriers and cultural barriers, some of the tribes of Ladakh are supposed to be the descendants of the Aryan race and they represent the pure Aryan race. Various researchers are now working to confirm their ethnicity and looking for the reason for their existence in which they dwell. Some findings indicated that there is some mutation in their genome which is responsible for their habitation at such places and proved that they belong to Ancenstral North Indian related to west Eurasian (ANI). Previous study from lab has concluded finding of the y chromosomal analysis of 120 samples which significantly proved that genes related for the pigmentation was directly related with adaptation of pigmentation gene candidate affected by climatic condition. In this paper, we have presented that what are changes there in genome of Ladakh population like, Brokpa, Balti etc as compared to other Indian population. In conclusion, Ladakh tribes have significant potential to uncover previously unknown variants involved in disease and normal variations.

ORAL PRESENTATION

【B10】

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OP-11

SYNTHETIC AND PHARMACOLOGICAL STUDIES ON PEPTIDE FROM MARINE SPONGE

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During past years, natural products derived from marine sponges have played a crucial role in the pharmaceutical research as biomedically useful agents or as lead compounds for drug development. Among them, bioactive cyclopeptides with unique structures have emerged as vital organic congeners which may prove better candidates to overcome the problem of widespread increase of microbial resistance towards conventional drugs. Diverse biological activities possessed by marine sponge-derived natural cyclic peptides include antimicrobial, cytotoxic, anti-HIV, nematocidal, anti-inflammatory, serine protease and protein tyrosine phosphatase inhibitory activity. Stylisin 2, a natural cyclic heptapeptide has been isolated from the Jamaican sponge Stylissa caribica and its structure was elucidated on the basis of 1D and 2D NMR data, followed by determination of absolute configuration of amino acids by Marfey's Analysis prompted by the pharmacological properties of proline-rich cyclopeptides as well as to obtain a natural bioactive peptide in good yield and in continuation of our efforts toward synthesizing natural cyclopeptides, the present study was aimed at the first total synthesis of stylisin 2 using solution phase techniques. The synthesized cyclooligopeptide was also subjected to antibacterial and antifungal screening.

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OP-12

ACUTE ORAL TOXICITY AND SAFETY EVALUATION OF THE ETHANOLIC EXTRACT OF *BOSWELLIA SERATTA* LEAVES IN MALE MICE

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The present investigation was carried out to evaluate the safety of ethanol extract of *Boswellia seratta* (Burseraceae) leaves. For acute toxicity study, a single dose of 2000 mg/kg of the *Boswellia seratta* leave extract was given orally to healthy male mice. The animals were observed for mortality and clinical signs for 3 h and then daily dose of 2000 mg/kg for 14 days and further observed for changes in its behavior, bodyweight, hematological and biochemical parameters. Animals were sacrificed to examine their organs and blood serum was analyzed. In conclusion, *B. seratta* leave extract caused neither significant visible signs of toxicity, nor mortality, no significant differences were found in relative organ weights, biochemical studied parameters in treated groups compared to control group. No obvious histological changes were also observed in organs of *B. seratta* leaves extract treated animals compared to controls.

ORAL PRESENTATION

【B12】