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By
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Effect of Aqueous Extract of Colocasia esculenta against High Fat Diet Induced Non Alcoholic Fatty Liver Disease in Rats

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Background: Nonalcoholic fatty liver disease (NAFLD) is becoming a major public health problem due to the increasing incidence of obesity and diabetes in India for the last two decades. The present work is aimed to investigate the effect of aqueous extract of Colocasia esculenta against (AEEC) high fat diet induced nonalcoholic fatty liver disease in wistar albino rats. Methods: Rats were randomly divided into four groups (n=6 per group) as follows: Normal control (standard laboratory diet); HFD control (High fat diet); HFD + AEEC (200mg/kg); HFD + AEEC (400mg/kg) for 60 days. After treatment the rats fasted for 12-14hrs and were then euthanized; all of their blood as well as their livers were collected for estimation of biochemical parameters and histopathological studies. Results: Treatment with aqueous extract of Colocasia esculenta (200mg/kg, 400mg/kg b.w) significantly reduced the body weight and body weight gain. In addition, significantly reduced the serum triglycerides, total cholesterol, LDL cholesterol, VLDL cholesterol and showed significant increase in HDL cholesterol. High fat fed control rats treated with AEEC at doses 200,400 mg/kg body weight produced significant decrease in liver cholesterol content and triglyceride content. High fat fed control rats treated with AEEC at doses 200, 400 mg/kg body weight produced significant decrease liver enzyme markers. Treatment with AEEC at dose 200 mg/kg body weight produced significant increase in liver anti-oxidant system also reversed the Histopathological changes. Conclusion: Aqueous extract of Colocasia esculenta may be beneficial in the non-alcoholic induced fatty live in rats in dose dependent manner. Keywords: Colocasia esculenta, HFD, Histopathological, NAFLD.

Neuroprotective Effect of Pentoxifylline on Chronic Ethanol Induced Cognitive Impairment in Male Albino Mice

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Background: Alcoholism is a chronic disease characterized by unrestrained drinking. Several studies revealed that chronic alcoholism affects the prefrontal cortex and hippocampus of the brain, resulting in cognitive impairment. Pentoxifylline (Ptx) is a methyl xanthine derivative having potent antioxidant activity, where it acts as a competitive nonselective phosphodiesterase inhibitor. Recent studies revealed that it also has neuroprotective action. Objectives: To investigate the neuroprotective effect of Pentoxifylline (Ptx) on chronic Ethanol (EtOH)-induced cognitive impairment in male albino mice. Methods: Adult male albino mice (weighing 25-30 g) were allocated into four groups (n=5) and Group 1 given with 10% EtOH; Group 2 given with 10% EtOH+ Ptx (100mg/kg, i.p); Group 3 given with 20% EtOH; Group 4 given with 20% EtOH+ Ptx (100mg/kg, i.p) up to 60 days. At the end of the study behavioral, biochemical parameters and also histopathological studies were performed. Results: EtOH treated groups showed a substantial decrease in inflexion ratio in the elevated plus maze, time spent in target quadrant region in Morris water maze and retention latency in passive avoidance test. Furthermore, EtOH treated groups exhibited a considerable decrease in catalase, superoxide dismutase, GABA levels and increased glutamate, acetylcholinesterase levels when contrasted to Ptx-treated groups (P< 0.05), which indicated antioxidant and neuromodulatory effects of Pentoxifylline. Conclusion: From the study, EtOH treated groups exhibited alteration in spatial memory and reinstated to normal in Ptx treated groups. Further research is essential to explore its precise molecular mechanism on cognition in chronic alcoholism. Keywords: Acetylcholinesterase, Alcoholism, Cognitive impairment, GABA, Glutamate, Hippocampus, Pentoxifylline.

Evaluation of Cardioprotective Effect of Indol-3-Carbinol in High Salt Induced Myocardial Stress and Hypertrophy in Male Sprague dawley rats

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Objectives: The present research is aimed at to explore the cardio-protective activity of Indole 3 Carbinol against high salt induced myocardial stress and hypertrophy in male Sprague Dawley rat. Methods: In this study male Sprague dawley rates were divided into five groups. Each group consists of 6 rats (N=6). Group-I treated with normal water and feed, Group-II subjected with high salt diet (8% NaCl), Group-III treated with high salt diet (8% NaCl) + Losartan (20mg/kg, p.o), Group-IV treated with high salt diet (8% NaCl), + I3C (10mg/kg, p.o) and Group-V treated with high salt diet (8% NaCl), + I3C (40mg/kg, p.o). The animals were treated for 63 days periods. After completion of treatment period, the biochemical and histopathological analysis were carried out on collected serum as well as heart samples. Results: Finally, I3C treated rats observed with significant reduction of CK-MB, LDH (serum) myeloperoxidase, Malondialdehyde (cardiac tissue) levels and significant improvement of catalase, SOD, GSH (cardiac tissue) compared with high salt diet (8% NaCl) group. Conclusion: Indole-3-Carbinol at 40mg/kg may be considered with this preliminary examination (biochemical and histopathology) as potential source of cardio-protective agents. Keywords: Indole-3-carbinol, High salt diet, myocardial stress, Hypertrophy.

Effect of Annona squamosa Linn against Aluminium Chloride Induced Alzheimers in Rats

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Objectives: The present study is aimed to investigate the polyphenolic fraction of Annona squamosa Linn (PFAS) against aluminium chloride induced Alzheim-
ers disease in rats. Methods: Wistar rats were divided into Group I normal control: received distilled water, Group II: received Aluminum chloride (100mg/kg, oral). Group III and IV received PFAS (200mg/kg, 400mg/kg, oral respectively) and inducing agent (Aluminum chloride-AlCl3, 100mg/kg, oral). Group V received Donepezil (1mg/kg, oral) and inducing agent (AlCl3 100mg/kg, oral). The rats were given respective treatment for 28 days and behavioural parameters were determined on 1st day, 15th and 28th day. After 28th day, rats were sacrificed and anti-oxidant parameters, brain Acetylcholinesterase content were determined along with histopathological studies. Results: The polyphenolic fraction of Annona squamosa Linn showed dose dependent protective effect against Alzheimer’s disease by significant improvement in locomotor activity, motor coordination, spatial memory and conditioned avoidance response, significantly decreased MDA (P< 0.01), creatinine clearance (P< 0.05, P< 0.001) and significant decrease in serum parameters such as blood urea nitrogen (P< 0.05 P< 0.01), serum creatinine (P< 0.01, P< 0.001), albumin (P< 0.05) and urea (P< 0.001) compared to cisplatin treated animals. Seed extract significantly increased endogenous antioxidant enzymes such as SOD (P< 0.05 P< 0.01), CAT (P< 0.001 and GSH (P< 0.01 P< 0.001) and significantly decreased MDA (P< 0.001) content compared to cisplatin treated group. Pathological alterations in kidney tissue architecture such as severe tubular necrosis; tubular vacuolization and dilation were significantly improved by Macrotyloma uniflorum seed extract treatment. Conclusion: From the observations of phytochemical investigations, renal function markers, antioxidant marker and histopathological changes conclude that Macrotyloma uniflorum seed extract may afford renoprotective effect against Cisplatin chemotherapy induced renal failure.

Keywords: Antioxidant markers, Histopathological changes, Macrotyloma uniflorum seed extract, Renal function markers, Total flavonoid content.

Pre-clinical Drug Interaction study of Trazadone with Pioglitazone

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Background: Management of hyperglycaemia requires continuous treatment and the risk of depression is double in diabetic patients. Therefore, treatment of depression in diabetic patients is liable to increase multiple drugs usage. Pioglitazone and trazadone are most generally used drugs in diabetes and depression respectively. Both of these drugs are metabolised by CYP 3A4 enzymes. Simultaneous usage of these drugs may leads to drug interaction. Therefore, this study aimed to evaluate the potential drug interaction between trazadone and pioglitazone. Methods: Blood glucose levels were estimated by GOD/POD method and pioglitazone serum levels by HPLC method for pharmacokinetic data. Results: Trazadone enhances the hyperglycaemic effect of pioglitazone by altering metabolism of pioglitazone. Conclusion: Care should take while treating depression in diabetic patients with trazadone and pioglitazone and dose modification is necessary. This work was funded by University Grants Commission-SERO, Hyderabad.

Keywords: CYP 3A4, Drug interaction, Pioglitazone, Trazadone.

Evaluation of Cardioprotective Effect Activity of Rumex vesicarius Leaf Extract in Doxorubicin Induced Cardiotoxicity in Wistar Male Albino Rats

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2 Department of Pharmacology, Raghavendra Institute of Pharmaceutical Education and Research (RIPER) – Autonomous, Ananthapuramu, Andhra Pradesh, INDIA.

Background: Myocardial infarction is one of the leading causes of death for both men and women all over the world. Objectives: The present study was to investigate the protective effect of hydro alcoholic extract of Rumex vesicarius (HaERV) leaves in doxorubicin induced cardiac toxicity. Methods: Doxorubicin (DOX) 10 mg/ kg i.p. single dose was given to cause cardiac damage...
Objectives: These coloured pigments were tested for the colour stability using photo-oxidation, the result was significant reduction in OD value that means instability. Among all flowers, Red rose was found more intense in the colour and also relative more stable. Anti-bacterial activity was performed against ciprofloxacin resistant species including S. Aureus, B. Subtilis, E. coli, K. Pneumonia and P. Vulgaris at 50 and 100µg/ml by micro dilution method. Among all the red rose and yellow rose fractions showed % inhibition of 69.5 and 69.0 % respectively on klebsiella pneumoniae. Conclusion: All three fractions were effective on both E. Coli and B. Subtilis with more than 60% inhibition. The % inhibition of other bacteria was below 50%.

Keywords: Anthocyanins, B. Subtilis, E. coli, K. Pneumonia, Micro dilution method, P. Vulgaris.

The Anticancer and Antitubercular Activity of Bio Guided Fractions of Tinospora cordifolia and their Immunomodulatory Activity

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Objectives: The leaves of the plant Tinospora cordifolia were extracted by cold maceration using ethanol, ethyl acetate and n-hexane. All the extracts were screened for their antitubercular, anticancer activities and IL-10 expression (in HCT-116 cells) using luciferase reporter phage (LPS), MT and flow cytometry assay methods, respectively.

Results: The antitubercular and anticancer screening data revealed that ethyl acetate and n-hexane extracts demonstrated promising (p<0.05) antitubercular activity with respective inhibition (%) of 92 % and 86 %, at 100µg/ml whilst their corresponding IC50 values for anticancer activity was 63.99 and 113.7 µg/ml respectively on HeLa and HCT-166 cells. Overall, ethanol extract was relatively less active. The flow cytometric assay for n-hexane extract demonstrated the significant (p<0.05) IL-10 expression (44.12 MFU) in HCT-116 cells against the control cells (8.48 MFU). The GC-MS analyses of n-hexane extract showed presence of tembatarine, berberine, cordifolside E and magnoflorine as major constituents. NHTR was fractionated into 11 fractions (T1-T11) and were screened against HCT-116 cancer cell lines. Conclusion: T11 showed potent activity against HCT-116 cancer cell lines with IC50 value of 40.8µg/ml. It inhibits the cell cycle ‘s’ phase and morphology changes of cells observed.

Keywords: Anticancer, Antitubercular, HCT-116, HeLa, IL-10; Immunomodulatory, MCF-7, Tinospora cordifolia.

Design and Development of Cefotaxime Mucoadhesive Films from Natural Mucilage of Sago Pearls

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2University of Zawia, Az Zawiyah, Libya.

Objectives: This study was aimed to investigate the antimicrobial potential of Rosa species. Methods: The petals of three flowers were subjected to cold maceration by hydro-methanolic mixture for a period of 48 hr at room temperature. The % yield of extracted values for Red rose, Yellow rose and Orange rose for 2.5%, 2.2% and 2.9% respectively. All the extracts were resins in nature and were dried in petri plate and were positive for anthocya- nin. The pigment film was very thin and uniform with high colour intensity, variation, thickness, folding endurance, moisture uptake, tensile strength and

Growth Inhibitory Effect and Photo Stability of Anthocyanin Fractions of three Hybrids of Rosa Species against Ciprofloxacin Resistant Pathogenic Bacteria

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Objectives: This study was aimed to investigate the antimicrobial potential petals of Rosa species. Methods: The petals of three flowers were subjected to cold maceration by hydro-methanolic mixture for a period of 48 hr at room temperature. The % yield of extracted values for Red rose, Yellow rose and Orange rose for 2.5%, 2.2% and 2.9% respectively. All the extracts were resins in nature and were dried in petri plate and were positive for anthocyanins. The pigment film was very thin and uniform with high colour intensity, variation, thickness, folding endurance, moisture uptake, tensile strength and

Effect of Terminalia catappa Leaf Extract Oncafeteria Induced Obesity in Rats

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Objectives: To investigate the anti-obesity effect of Terminalia catappa leaf extract on cafeteria induced obesity in rats. Methods: The animals were divided into five groups of six animals each and individually housed in cages. The normal control group continued to be fed laboratory pellet chow ad libitum. The cafeteria diet-control group received the cafeteria diet in addition to the normal pellet diet (NDP). The remaining three groups were fed with the cafeteria diet and NDP along with Terminalia catappa leaf extract (200 mg/kg, p.o., 400 mg/kg, p.o.) and orlistat (45 mg/kg, p.o.), respectively, for 4 weeks. Body weight and daily food intake were measured regularly during the experimental period. The various adipose pads were weighed and serum total cholesterol (TC), triglyceride (TG), LDL, VLDL and high-density lipoprotein cholesterol (HDL-C) were measured. Results: The Terminalia catappa leaf extract-treated groups showed a significant decrease in body weight and various adipose pad weight and serum, TC, TG, LDL, VLDL and increase in HDL levels after 4 weeks treatment. Also decrease the adipose tissue size and adipocyte number. Conclusion: At present study, Terminalia catappa leaf extract can inhibit the development of obesity and hyperlipidemia on cafeteria induced obesity in rat. The effects appear to be partly because of various phytoconstituents of Terminalia catappa leaf extract. But further studies are still wait for establishing mechanism and isolation of phytoconstituents. And by observing above results Terminalia catappa leaf extract can act as adjuvant in obesity treatment.

Keywords: Antiobesity, Cafeteria diet, Terminalia catappa.

Results: Pretreatment with standard Amlodipine and HAERV significantly reduce the (DOX) induced cardio toxicity.

Keywords: Myocardial infarction, Rumex vesicarius, CK-MB, LDH, Lipid peroxidation.
percent elongation, content uniformity, surface Pk. Results: The thickness of the unloaded films for formulations F1 to F5 showed in the range of 132-245 µm and all the formulations exhibiting almost uniform thickness but the films loaded with different concentrations of drug showed the varying thickness. The formulations F1-F5 containing 10% drug showed thickness in the range of 198-399 µm. Films were found to be stable at accelerated stability conditions. The percentage drug content of all films was found to be between 98.24% - 102.42% of c. The stability study of the formulated films was carried out under different environmental conditions. The film was packed in the aluminium foil and stored in stability chamber for stability studies at 2-8°C (45% RH) 25-30°C (60% RH) and 45-50°C (75% RH) for a period of 45days. Conclusion: Amongst all formulae, the formulation F4 showed the highest dissolution rate.

Keywords: Cefotaxime, Mucoadhesive films, Natural mucilage, Sago pearls.

Development and Characterization of Granisetron HCl Mouth Melt Films by 32 Factorial Design

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Objectives: The purpose of the present study was to develop and characterize Granisetron HCl mouth melt films for the effective treatment of emesis by rapid capillary action and pronounced hydration of natural super disintegrants.

Methods: The formulation development was carried out by experimental design using Design-Expert software (version 11). The matrix films were prepared by molding method. The films were evaluated for physical properties, drug uniformity, bio adhesive strength and viscosity. The matrix films were prepared by molding method. The films were evaluated for natural and synthetic polymer viz., shear stress, tensile strength and viscosity. The matrix films were prepared by molding method. The films were evaluated for physical properties, drug uniformity, bio adhesive strength and in-vitro drug release. Results: It was obvious from this work that the formulation F5 with DSRM (dried) showed maximum bio adhesive strength in in vitro drug release was found to be good end of 10 h with non-fickian diffusion mechanism. The stability studies of F5 revealed that there was no change in bio adhesive strength and in-vitro release when stored at stressed storage conditions. Conclusion: It was concluded that Datura stramonium leaves mucilage shows better bio adhesive strength.

Keywords: Bio adhesion, Datura stramonium, Films, Release.

Formulation and Evaluation of Taste Masking Oral Disintegrating Tablets of Zolmitriptan

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Background: Zolmitriptan is a new serotonin agonist of the 5-HT1D/1B receptor with anti-migraine property and belongs to the class of triptans. It is extremely bitter in taste. The purpose of this research was to develop a bitter less orally disintegrating tablet of poorly soluble drug like zolmitriptan. Methods: Taste masking was done by complexing Kyron T-134 in different ratios. Three super disintegrants like Sodium starch glycolate, Crospovidone, Low substituted hydroxyl propyl cellulose were used. Prepared tablets were evaluated for different properties like Drug content, hardness, friability, wetting time, water absorption ratio, disintegration time and In-vitro dissolution studies. Results: The different formulations showed disintegration time between 39 to 52 Sec. Drug release showed between the ranges of 5 to 30 min. Among all the formulations, F9 with Low substituted hydroxyl propyl cellulose at a concentration of 4% showed 98.09% drug release within 30 min. Conclusion: F9 was considered as best among the other formulations. The tablets showed enhanced dissolution hence better patient compliance. The tablets showed good dissolution hence better patient compliance.

Keywords: Zolmitriptan, Kyron T-134, Super disintegrants, Oral disintegrating tablets and Disintegrating time.
Formulation and Evaluation of Nicotine Transdermal Patches by using Hydrophilic and Hydrophobic Polymers

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Objectives: The present investigation is to formulate matrix type Transdermal drug delivery system of Nicotine using different polymers such as Ethylcellulose, Eudragit RL 100 by solvent evaporation technique. Methods: The prepared patches using different polymers were evaluated by Compatibility study, Physical appearance, Thickness uniformity, Weight uniformity, Tensile strength; Folding endurance, Percentage Moisture content, Percentage Moisture uptake, Water vapour transmission rate, Drug content uniformity, in vitro drug release studies. Results: From the results of the drug content determination, it was assured that there was uniform distribution of drug in the patches and the deviations were within the acceptable limits. Release study of Nicotine patches indicated that the drug release from the formulation varies with the different compositions of polymers. Among all the prepared formulations, formulation containing PVA and EC (1:1) showed better drug release of 76.76 ± 1.83 after 24 hr. By reviewing the results obtained, on the basis of the in vitro characterization it was concluded that Nicotine can be administered transdermally through matrix type TDDS developed in our laboratory. Transdermal patches consisting of the polymers PVA and EC along with PEG 400 as plasticizer and Tween 80 as permeation enhancer demonstrated sustained release of the drug for 24 hrs.

Keywords: Transdermal Patches, Nicotine, Plasticizer, Solvent evaporation method.

Dissolution Rate Enhancement by in-situ Micronization Technique for Fenofibrate

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Background: In-situ micronization is an emerging simple technique to augment the solubility of the poorly aqueous soluble drugs by size reduction without involvement of drug mechanical size reduction process i.e., high energy input, loss of drug, broad size distribution etc. can be overcome by this technique. Fenofibrate is a hypolipidemic drug belongs to BCS class II exhibit very low aqueous solubility which leads to poor oral bioavailability (40%). Methods: In order to improve the solubility to dissolution rate, fenofibrate was prepared into micro crystals by using PEG 6000, PVPK 30 and HPMC K 15 as stabilizer. These granules were comprising by using three super disintegrates SSG, croscarmellose sodium and crospovidone. The tablets were now subjected to drying at 45°C. The spheroides were evaluated for flow properties.

Keywords: Fenofibrate, in-situ micronisation, Micro crystals, Solubility, Solvent change, Dissolution, Stabilizer.

Influence of Extraction Solvent, Diluent, Disintegrants on Processability and Performance of Tablets Formulated with Costus igneus Leaf Extract

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Background: The use of herbs to treat disease is almost universal and is more affordable than purchasing experience modern pharmaceutics. Synthetic oral hypoglycemic drugs have undesirable side effects and hence natural products may be a better option. Costus igneus claimed to help insulin build in the human body and is referred as insulin plant. Methods: The plant leaves have been collected from ABS botanical garden, Salem, Tamilnadu. The dried leaf powder was subjected to solvent extraction with petroleum ether, methanol, chloroform, ethyl acetate, n-butanol and water separately. The % yield, phytochemical analysis was carried out for each extract. The extracts were screened for their anti-hyperglycemic activity in glucose overloaded hyperglycemic rats (protocol IACET/228/BCOPI). Results: Chloroform extract exhibited higher activity and its dose was optimized by treating 50,100and200 mg/kg body weight. Diluents such as lactose, mannitol and microcrystalline cellulose were used to convert the extract as free flowing powder. Conclusion: Among the diluents, lactose was found to be better based on quantity required to form granulatable mass. The micrometric properties of the granules are excellent. These granules were comprising by using three super disintegrates SSG, croscarmellose sodium and crospovidone. The tablets were now subjected to various quality control tests according to I.P. Low disintegration time observed from the tablets containing crospovidone.

Keywords: Costus igneus Leaf Extract, Croscarmellose sodium, Crospovidone.

Formulation and Evaluation of Metoprolol Sustained Release Tablets by Melt Granulation (Extrusion Spheronization) Technique

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Objectives: The objective of the present study is to develop sustained release matrix tablets of metoprolol tartrate using melt granulation technique. Metoprolol is a beta selective adrenergic receptor blocking agent used in the management of hypertension. The half-life of the drugs is 4-6 hr. Thus sustained release formulations are desired for prolong action and improve patient compliance. Methods: In melt granulation process, binder which melts or softens at relatively low temperature is used. Extrusions spheronization process is one of the most promising techniques to produce granules of uniform size, good flow ability and low friability. In this study, binders such as beeswax, paraffin wax, stearic acid and PEG 8000 were used. The selected binders were melted in china dish kept on water bath. The required amount of the drugs was transferred into molten mass and mixed well. Molten mass was passed from 0.8mm die screen of extruder maintained at a speed of 30 rpm. Extrudes were transferred immediately into spherizer filled with 1mm groove plate and spherizer speed was set at 500 rpm. The granules were collected and subjected to drying at 45°C. The spheroides were evaluated for flow properties.

Keywords: Metoprolol, Melt granulation, Extrusion spheronization, Sustained release tablets.

Preparation and Evaluation of Diclofenac Transdermal Films using Modified Chitosan

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Objectives: In the present investigation, transdermal films of diclofenac sodium were prepared with modified chitosan. Methods: Chitosan has been chemically modified by treating with different aldehydes like acetaldehyde, Benzaldehyde, salicyaldehyde and cinnamaldehyde to form Schiff’s bases. Ma-
Formulation and Evaluation of Sustained Release Matrix Tablets of Itopride

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Objectives: In the present investigation an attempt was made to formulate the oral controlled release itopride matrix tablets by using carbopol 934 and natural gums like locust bean gum and Tamarind seed polysaccharide gum as rate controlling polymer and to evaluate drug release parameters as per various release kinetic models. Methods: Release rate profiles were evaluated through different kinetic equations: zero-order, first-order, Higuchi and Peppas models. The tablets were prepared by wet granulation method. Compressed tablets were evaluated for uniformity of weight, content of active ingredient, friability, hardness and in vitro release studies. The FTIR study has shown compatibility between Itopride hydrochloride and tamarind gum with the formulation excipients used in the study. The in vitro dissolution study was carried out for 12 hr using paddle (USP type II) method in phosphate buffer (pH 1.2 and 7.4) as dissolution media. Results and Conclusion: 18 formulations were prepared among that F1, F2, F6, F7, F11 and F12 failed to controlled release beyond 12 hr. The formulation, F-18 shows 97.93% of drug release at the end of 12 hr. Selected formulation (F-18) was subjected to stability studies for 3 months, which showed stability with respect to release pattern. The drug release follows zero order kinetics and the mechanism was found to be anomalous (non-Fickian) diffusion. All the formulations showed compliance with Pharcopoeial standards.

Keywords: Itopride hydrochloride, Controlled Release, Matrix tablets, Carbopol 934, Tamarind gum, Locust bean gum.

A Retrospective Study on Antibiotic Microbial Sensitivity in Type II Diabetes Mellitus Patients with Urinary Tract Infections in Tertiary Care Hospital

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Background: Diabetes mellitus is a chronic debilitating medical condition in India with which more than 62 million populations are suffering with. The use of alternative therapies in addition to conventional allopathic medication is seen in the chronic diabetics. WHO estimates that ~80% world uses alternative medicine for primary health care which includes use of Ayurveda, Homeopathy, Unani and others. This in the context, the current study is planned to explore diabetic population undergoing multiple therapies. Methods: A cross-sectional survey was conducted on the type II diabetic patients using both CAM and allopathic medicine concomitantly. Out of 400 people surveyed, 61.3% used dietary supplements, herbal medicines and external preparations along with Physician's prescription. Out of this only half of them informed to their consultant practitioner about their CAM usage. 2/3rd of people preferred concomitant usage rather than monotherapy. Results: Based on this survey it is known that people are incurred a major part of expenditure on allopathic than alternative therapies. The patients believe that the use of CAM is effective, but many are unaware of herb-drug interaction on a parallel therapy. It is evident that usage of CAM alone is better to cure diabetes. We concluded that females of 50-61 age groups are more prone to diabetes related side effects on concomitant usage of CAM and allopathic medicine. Conclusion: Therefore, the patients undergoing multiple therapies shall be properly counselled.

Key words: Alternative Medicine, Alternative therapies, Diabetes Mellitus.

Patient Satisfaction towards Pharmacist Delivered Counselling Services in Chronic Disorders: A Cross-sectional Study

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Background: The success of healthcare service is majorly depends on patient satisfaction. Evidence shows that, pharmacist delivered counselling services had shown a great impact over economical, clinical and humanistic outcomes. The study aims to assess the patient satisfaction towards counselling services provided by pharmacist in chronic disorders. Methods: This is a cross-sectional study, conducted in out-patient pharmacy department of the secondary care referral hospital. Patient satisfaction regarding counselling services was assessed by using a feedback form. The feedback form comprises ten statements regarding, introduction before counselling session, information provided regarding disease, voice and tone of counsellor, information regarding drug and non-pharmacological measures, doubts clarification, language, use of counselling aids, time spent, ending counselling and overall satisfaction. Results: Majority of the patients were shown overall satisfaction with patient counselling services delivered by the pharmacist. More than half of the
patients were satisfied with counselling content, language, doubts clarification and time spent by the pharmacist. Some of the patients were shown dissatisfaction towards counselling services. The major reasons for dissatisfaction of the patient are busy schedule, critically illness and fatigue and tiredness. Some of the patients are even ready to pay consultation fee for pharmacist provided services. **Conclusion:** The study concludes that, Majority of the patients shown a positive towards counselling services provided by the pharmacist. This study helps in making pharmacist mediated counselling services in disease management policies. Feedback of the patient regarding counselling services will provide insights for improvement in the service.

**Keywords:** Patient-satisfaction, Counselling, Pharmacist, Long-term therapy, Feedback.

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**Impact of Pharmaceutical Care in Hypertensive Patients in Secondary Care Referral Hospital**

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**Background:** Pharmaceutical care program may be an option to improve control of blood pressure (IBP) in hypertensive patients. The aim of current study was to assess the pharmaceutical care services by pharmacist for hypertensive patients in a rural secondary care hospital. The identify drug related problems in a patients, to assess the significance of the pharmaceutical care plan, to estimate medical adherence in subjects before and after pharmaceutical care. **Methods:** This is a prospective study, 350 hypertensive patients were enrolled in the study. This patients are divided into two groups i.e., test and control group. We provide Pharmaceutical Care (PC) to test group and care not given to control group. The primary outcome was changes in Blood Pressure (BP) in patients between baseline and final visit after 6 months later. The secondary outcomes were determination of drug related problems (DRPs) and adherence towards hypertensive drugs. Descriptive statistics were used to describe the adherence characteristics of the patients. **Results:** Based on the results 60-69 age group were having more patients 105(30%) than other age group, female were 191(64.57%) members and males are 159 members i.e., 45.42%. females were number than male in total 350 members. Among the study population DM with HTN shows more patients (64.28%) in population than other co morbid conditions, the clinical outcome has been improved in tests were 29.67% where as it was for control 20.27%, medication adherence has been improved in test were 35%, control 20%, 170 drug related problems were identified. **Conclusion:** We conclude that test shows improvement than control by providing care. We concluded that pharmaceutical care program help in better management of hypertensive patients by improving health outcomes.

**Keywords:** Pharmaceutical care, Blood pressure, Drug related problems.

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**Assessment of Risk Factors and Development of Preventive Strategies of Surgical Site Infections**

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**Background:** Surgical site infections (SSIs) are associated with substantial morbidity and mortality, prolonged hospital stay and increased cost. The precise identification of risk factors is important to develop strategies to prevent these infections. **Objectives:** To assess the risk factors and development of preventive strategies of surgical site infection. **Methods:** It was a prospective observational study for 6 month of the time period which performed in the YSR Memorial Hospital Anantapur. During the study period, data were collected prospectively for 200 patients undergoing major surgery. **Results and Discussion:** A total of 200 patients were included in the study. Out of these 200 patients, males were 68.5% and females were 31.5%. The patient in alcoholic and smoker group was having high risk (0.022) of SSIs and impact of age group (30-60 years) on male having high risk (0.02) of SSIs as compared to female (0.017). Various risk factors assessed to calculate SSI Risk Index Score includes - Skin preparation, Social habits, ASA class, Antibiotic Prophylaxis, WBC count, Catheters used, Blood transfusion and Duration of operation. **Conclusion:** The study shows that some factors had proven the positive impact on the risk of SSIs. Based on the results and the existing guidelines some preventive strategies were developed.

**Keywords:** Surgical site infection, Risk factors, SSI Risk Index.

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**Effectiveness of Misoprostol in the Prevention of Post-Partum Hemorrhage after Cesarean Section – A Prospective Observational Study**

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**Objectives:** PPH remains the major cause for the maternal mortality around the world. The risk of maternal mortality from hemorrhage is seen mostly in the low and middle income countries. The main objectives of our study were to observe the efficacy of prophylactic Misoprostol in the prevention of primary PPH. **Methods:** We have conducted a Prospective observational, comparative study in the department of Obstetrics and Gynecology in SVIMS Hospital, Tirupati, A.P, from the month of August 2018 – January 2019. Our study was approved by the Ethical Committee of SVIMS Hospital (IEC NO: 671), Tirupati. We have collected 100 cases based on inclusion and exclusion criteria who had undergone Cesarean Section. Groups were divided based on the treatment given to them. One group was administered only with Inj. Oxytocin and another group with Inj. Oxytocin in combination with Tab. Misoprostol (rectal route). PPH observed 24 hr post operatively (Primary PPH) was taken. Post-operative Hb levels assessed after 48 hr were recorded and compared. **Results and Discussion:** The maternal age at the time of Cesarean Section, type of Cesarean Section performed and gravidia wise distribution of study subjects were similar in both the groups studied. The mean post-operative blood loss in group of population on only Inj. Oxytocin (772±311.06) had observed as low, compared with population on both Tab. Misoprostol and Inj. oxytocin (950±185.40), (p = 0.762). The post-operative Hb levels of both groups (10.48±1.47 in population on only Inj. oxytocin) and (10.48±1.67 in population on both Inj. Oxytocin and Tab. misoprostol) were observed, compared and noted that there was no significant difference (p=0.9858) between them. **Conclusion:** We concluded that, the effectiveness of rectal misoprostol 500μg with Oxytocin 20 IU after delivery of baby in Cesarean Section had shown similar effectiveness as observed in population administered with 20 IU of oxytocin alone in control of PPH.

**Keywords:** Oxytocin, Misoprostol, Cesarean Section, PPH.

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**Analytical Quality by Design in the Development of RP-HPLC Method for Quantification of Budesonide in Inhalation Powders**

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**Background:** By considering the current regulatory requirements for an analytical method development, a reversed phase high performance liquid chromatography (RP-HPLC) method for routine analysis of Budesonide in dosage form has been optimized using analytical quality by design approach. **Methods:** Unlike routine approach, the present study was initiated with understanding of quality target product profile, analytical target profile and risk assessment for method variables that affect the method response. A Liquid Chromatography (LC) system equipped with the C18 column (250x4.6mm, 5μ), a binary pump
Design and Synthesis of some Novel Oxadiazole Derivatives and Evaluation of Antimicrobial Activity Followed by Molecular Docking against 3G7E Bacterial DNA Gyrase

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Objectives: The main aim and objective of the present research work was the design, synthesis, spectral characterization and evaluation of in vitro antimicrobial activity of some novel oxadiazole derivatives followed by molecular docking studies against bacterial DNA gyrase. Methods: The molecular structures of the synthesized compounds were assigned by IR, NMR and Mass spectral analysis. Molecular docking studies were carried out by AUTO DOCK programme. The in vitro antibacterial and antifungal activities of synthesized compounds were carried out by paper disk diffusion and agar streak dilution technique. Results: In silico molecular docking studies of synthesized compounds (AB1-AB8) were found to be possessed high binding affinity towards the bacterial DNA gyrase with PDB id 3G7E and inhibit the function topoiso-erase. The preliminary antimicrobial screening of the synthesized compounds displayed that most of the synthesized molecules were executed significant antimicrobial activity against individual bacteria and fungus. Conclusion: Among the synthesized oxadiazole derivatives, compound AB1; AB2 and AB7 were found to have very good antibacterial as well as antifungal potentiality with an MIC range of 13-12 µg/ml; 7-10 µg/ml and 15-18 µg/ml.

Keywords: Antibacterial, Antifungal, Disk diffusion, Molecular docking, NMR and MIC etc.

Investigation of Newer Ion –Pair Reagents in the Development of RP-HPLC Method for the Selected Drugs

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Background: Considering the disadvantages of the existing ion-pair agents such as column damage, ghost peaks, negative peaks, long time column washing, etc., which are contributed by low water solubility and considerable UV absorbance, the present analytical process focused to identify water soluble ion-pair reagents. Methods: The selected ion-pair reagents such beta-alanine, hydroxymethyl aminomethane hydrochloride (TRIS), diethyl amine and N, N, N -cetyl trimethyl ammonium bromide were relatively more polar and were water soluble. The suitability of these selected ion pair reagents was tested on LC system equipped with C18 column and photodiode array detector. The ion pair was investigated at 0.2 to 0.3 % concentrations with varying % aqueous from 10% to 60 %. Results: TRIS and beta-alanine have demonstrated better efficacy on haloperidol (HLP) elution with 3-fold increase in theoretical plates with half reduction in retention. With the same reagents the efficacy of Aceclofenac (ACF) elution was found to be good with moderate improvement in theoretical plate but the retention was significantly reduced than control elution. The unacceptable tailing of haloperidol peak was reduced to <1.5 with the theoretical plates of more than 4000. The column performance was reproducible and satisfactory even after washing. It indicated that the test ion-pair reagents are completely washable that do not affect the efficacy in non-ion pair applications. Conclusion: The linearity was proven with regression co-efficient of >0.99. The % RSD for intermediate precision and repeatability was less 1.6 %. The accuracy was in between 98-102%. The results revealed that the method performance was remained unaffected and was acceptable.

Keywords: Ion-pair reagents, RP-HPLC, Haloperidol, Aceclofenac, Beta-alanine, Tris.

Method Development and Validation for Simultaneous Estimation of Etizolam and Propranolol Hydrochloride by UV Spectroscopy

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Objectives: The present study deals with the UV spectroscopic method development and validation for the simultaneous equation method and first derivative method (VIERODTS method) of etizolam and propranolol hydrochloride in bulk and combined dosage form. Methods: Comparatively first derivative method is more sensitive than simultaneous equation method. The methods were validated statistically and parameters like linearity, precision, accuracy, specificity and assay was studied according to ICH guidelines. Results: At a determined wave length at 242 and 288 nm, it was proved linear in the range of 0.5- 5 µg/ml and 5- 50µg ml and exhibit good correlation coefficient (R² = 0.9872 and 0.9977) respectively and excellent mean recovery (98- 102%). Conclusion: Simple, sensitive, rapid economic UV spectroscopic methods were developed for the estimation of etizolam and propranolol hydrochloride in bulk and combined dosage form.

Keywords: Etizolam, Propranolol hydrochloride, Method development, Simultaneous equation method, UV spectroscopy.

Molecular Docking, ADME Prediction of Novel Chalcones from 4-Methoxy Acetophenone as Potent Anti-Bacterial and Anti-Tubercular Agents

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Background: As per the current scenario of WHO the necessity to develop potent, novel anti-microbial agents is more essential due to resistance developed in micro-organisms towards the existing drugs. Chalcones bears a very good synthony and diversity in the biological response profile more attracted to develop novel chalcones to its multiple potential against micro-organisms.

Methods: Initially molecular docking studies was performed against DNA Gyrase Subunit B (1aj6) and Enoyl acyl carrier protein reductase (2b35) by SWISS Docking, the compounds exhibited good interactions and docking score. On this basis chalcones were synthesized by reacting 4-methoxy Acetophenone with various substituted aromatic aldehydes in ethanol by the addition of sodium borohydride. The synthesized compounds was established by TLC using benzene and ethyl acetate as mobile phase. Results: The final compounds were characterized by melting point, FT-IR, 1H NMR and Mass spectra. Drug likeness and good skin permeation and other molecular properties were calculated by Swiss ADME. The synthesized chalcones were screened for in vitro anti-bacterial and anti-tubercular activities.
Preparation and Preliminary Evaluation of Ready to Serve Herbal Beverages

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**Objectives:** The study of the ready to serve herbal drink based on *Hemidesmus indicus* (sugandhi pala), *Madhuca longifolia* (iluppai or vippa puvpu), *Phoenix dactylifera* L. (date palm), *Vitis vinifera* grapes, *Punica granatum* pomegranate, lime and herbal extracts revealed that this drink is palatable and acceptable throughout its storage period. **Methods:** No preservative was added to increase the shelf life of the drink and the natural herb extracts present in the developed drink have contributed in keeping the bacterial count at bare minimum level. This drink is a blend of various essential vitamins and minerals. So instead of consuming various products, this one drink would be sufficient to replenish the needs of the body. The herbal mix is expected to provide a refreshing drink with sweet taste and minimal calories for those who have to restrict sugar in their diet. This test was conducted once in the beginning of the storage and once at the end of the 30-day period. **Results:** The microbial test revealed that no growth of microbes was observed on day 0, in nutrient agar condition. Whereas there was insignificant growth of microbes, even after day 30. **Conclusion:** The drink was acidic in nature and this might be a cause for the endurance of inhibition of microbial growth. The results were observed and the feedback was obtaining by using hedonic scale. **Keywords:** Herbal beverage, Preservative, Microbial test.

Rapid and Sensitive Bioanalytical Method Development and Validation for Quantification of Metoprolol using LC-MS/MS in Human Plasma

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**Objectives:** A simple, sensitive and selective LC-MS/MS method was developed and validated for the quantification of Metoprolol in human plasma. **Methods:** Propranolol was used as internal standard and K2 EDTA was used as anti-coagulant. Metoprolol is a lipophilic cardio selective α1, β1-1adrenoreceptor antagonist, used in the treatment of hypertension, angina pectoris and other cardio vascular diseases. The analyte was extracted from human plasma by liquid – liquid extraction technique with tert-butyl methyl ether. Chromatographic separation was achieved on aKromasil C18 column (5µm, 100 × 4.6 mm) with an isocratic mobile phase of 5mM Ammonium Formate pH 3.5 and Acetonitrile (15:85 % V/V). Electrospray ionization technique was used for sample ionization in positive ion mode and enhanced selectivity was achieved by tandem mass spectrometric analysis via two multiple reaction monitoring (MRM) transitions, m/z 268.15→115.90 for Metoprolol and 260.17→115.90 for Propranolol respectively. **Results and Conclusion:** The assay was validated for human plasma over a concentration range of 1.505-538.25ng/mL with the precision and accuracy ranging from 4.67 to 7.41% and 90.66 to 98.15% respectively. The stability of the analyte was evaluated in plasma under different storage conditions. **Keywords:** Metoprolol, LC-MS/MS, Kromasil, Electrospray, K2 EDTA, Human Plasma.

Stability Indicating Method Development and Validation of Fidoxomicin by using HPLC

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**Objectives:** A stability indicating method has been developed for the determination of Fidoxomicin by using HPLC method. **Methods:** The analyte was separated from its degradation products on C18 column the mobile phase used in this method was containing the mixture of 0.1 % OPA:Water: Acn: Methanol (20: 36.5: 43.5) at flow rate was 1 m/ min whereas the variable wavelength detection wavelength was at 260nm. Validation of method was done as per ICH Q2 guidelines. **Results:** The linear regression coefficient found 0.999 at a concentration range from 5-50 mcg/mL. The % Relative standard deviation for intra and inter - day precision was 1.5% and 1.6 %. The LOD and LOQ were found to be 0.4 mcg /ml and 1.3 mcg /ml respectively. **Conclusion:** Under the stress conditions such as acid hydrolysis, base hydrolysis, oxidation and thermolytic degradation the drug was degraded and two degradants were formed under the basic condition. The specificity of the method is suitable for a stability indicating assay. **Keywords:** Stability indicating assay, Fidoxomicin, Regression coefficient.

Synthesis and Anthelmintic Activity of some Novel 4-[substituted (benzylidene-hydrazinyl)]-2-alkyl-5,6,7,8-tetrahydrobenzo[b]thieno[2,3-d]pyrimidines

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**Objectives:** The present study was aimed to prepare novel thienopyrimidines for anthelmintic activity. **Methods:** A series of some novel 4-[substituted (benzylidene-hydrazinyl)]-2-alkyl-5,6,7,8-tetrahydrobenzo[b]thieno[2,3-d]pyrimidines were synthesized following appropriate synthetic schemes and characterized by spectral and analytical means. The title compounds were evaluated for anthelmintic activity by using adult Indian earthworms. **Results:** All the compounds exhibited significant anthelmintic activity which is on par with standard drug, pipеразин адепате. Further, compounds 5c and 5d have shown significant activity at 80 μg/ml [mean paralytic time of 3.81 min., 3.98 min. and helminthicidal time of 23.4 min., 24 min. respectively] which was better when compared with that of the standard drug, pipеразин адепате (0.25 min. of paralysis time and 24.5 min. of death time at 100 μg/ml). **Conclusion:** It is observed that moderate electron withdrawing groups like Cl (compounds 5c and 5d) showed activity better than that of the standard which were also statistically significant, it appears that other similar moderately electron withdrawing groups may be tried out to get better active compounds. Thus they can serve as a lead for further modification of the molecule. **Keywords:** Thienopyrimidines, Anthelmintic activity, Pipеразин адепате.


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**Objectives:** 4-chloro-3-nitrobenzoic acid is very cost-effective available com-
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International Conference on Advances in Drug Discovery against Drug-Resistant Diseases

In vitro Antitubercular Screening of Thirteen Polyphenolic Fractions from Edibles by LRP Assay Method against Mycobacterium Tuberculosis H$_3$RV

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Objectives: Isolation of polyphenols in edibles and screening of their antitubercular activity. Methods: There were thirteen polyphenol rich edibles were subjected to preparation of polyphenolic rich fractions using hydroalcoholic mixture containing ethanol and water (80:20 % v/v). The edibles used in this study are flax seed meal (Linum usitatissimum), Capsers (Capparis spinosa), Dried rosemary (Rosmarinus officinalis), Peppermint (Mentha piperita), Spear mint (Mentha spicata), Star anise (Llicium verum), Clove (Syzygium aromaticum), Blue berry (Cyanococcus), Black Current (Ribes nigrum), Dried thyme (Thymus vulgans), Cocoa powder (Theobroma cacao), Mexican oregano (Lippia graveolens) and Red onion (Allium cepal). The obtained extracts were subjected to proximate analysis and total phenolic contents were estimated by folin-ciocalteu method. The yield (%)) of the extract was in between 5-15%. The prepared polyphenolic fractions were lyophilized to powders (Processed time between 2-4 hr). These powders were screened against Mycobacterium tuberculosis H$_3$RV using LRP assay method at 100 and 500µg/ml. Results and Conclusion: Results revealed that among the extracts, all showed 98-99 % growth inhibitions except blackcurrant (10% at 100µg/ml and 500µg/ml) and clove (14% at 100µg/ml) extracts. The compounds S3, G1, S5, S1, G3, G4, S2 showed better docking score of the compounds towards Crystal structure of Mycobacterium tuberculosis enoyl reductase (InhA) inhibited by Triclosan (2B35) and Crystal structure of sterol 14-alpha demethylase (CYP51) bound to an inhibitor (3GW9) by molecular docking Glide schrodinger software. This led to the identification of 5 potent leads with an agreeable target interaction scores and kinetic properties. Conclusion: This preliminary approach could set a stage for the development of several promising candidates with improved features enabling clinical benefits. Key words: Multiple Sclerosis, Sphingosine-1-Phosphate Lyase, Sphingosine-1-Phosphate.

Anti-tubercular Screening and Proximate Analysis of Murraya koenigii, Spinacia oleracea, Rivea ornate and Annona squamosal

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Objectives: Hydro alcoholic separation of polyphenols in edibles and screening of their antitubercular activity. Methods: Hydroalcoholic mixture ethanol and water 80:20%rv was used for the extraction of polyphenols in polyphenol rich edibles like leaves of Murraya koenigii, Spinacia oleracea, Rivea ornate and Annona squamosa. The obtained extracts from these edibles were subjected to find different parameters like total moisture, ash value, water soluble ash, acid insoluble ash, acid value, saponification value and LOD. Results and Conclusion: The results indicate the purity of the extracts. The yield (%) of the extract was found between 10-15%. The extracted fractions were powdered by processing for about 1-4 hr in lyophilizer. Then these powders were evaluated for anti-tubercular activity using LRP assay method against Mycobacterium tuberculosis H$_3$RV at concentrations 100 and 500µg/ml. The anti-TB results exhibited that among the powdered extracts, all powders showed 99% growth inhibitions except Annona squamosa (29%). (Acknowledgement: This research is supported by AICTE, New Delhi, India under RPS Scheme 2017. Keywords: Polyphenols, Ash value, Anti-tubercular activity and LRP assay method.

Molecular Docking, Drug Likeness Properties and Toxicity Studies of Some Novel Imidazolidine-4-Ones

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Background: Imidazolidine derivatives are the important pharmacophores with various therapeutic activities like anti-bacterial, anti-fungal, anti-tubercular, anti-cancer, anti-inflammatory, analgesic, adrenergic receptor agonist, anti-parasitic, oral hypoglycemic and anticonvulsant activities etc. In modern drug discovery, this wide scope of the pharmacophore attracted to develop the best candidates with the aid of in silico methods. Methods: The interactions and docking score of the compounds towards Crystal structure of Mycobacterium tuberculosis enoyl reductase (InhA) inhibited by Ticlosan (2B35) and Crystal structure of sterol 14-alpha demethylase (CYP51) from Trypanosomabrucei bound to an inhibitor (3GW9) by molecular docking Glide schrodinger software. Results: The compounds S3, G1, S5, S1, G3, G4, S2 showed better docking
score compared with the standards Triclosan and Isoniazid towards 2B35 protein. While, the compounds S1, S4 and S6 showed better docking score compared with Fluniconazole towards 3GW9. Drug likeness properties like Lipinski rule of 5, TPSA, Molar refractivity, GI absorption, BBB permeation, Solubility, Skin permeation and synthetic accessibility etc by SWISS ADME online software. Predicted toxicity parameters like LD_{50}, toxicity class, hepatic toxicity, carcinogenicity, immune toxicity, mutagenicity and cytotoxicity etc by Protox online software. **Conclusion:** The results of the ADME and Protox represents all compounds obeyed Lipinski rule and are safe, belongs to the predicted toxicity class was 4. The compounds G4 and S4 exhibited Hepatotoxicity, Carcinogenicity and S4 also shows Mutagenicity and Cytotoxicity. **Keywords:** Imidazolines, Glide, Swiss ADME, Protox, Mycobacterium tuberculosis.

**Development and in vitro Evaluation of Pioglitazone Aloe vera Leaves Mucilage Extended Discharge Matrix Tablets**

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**Background:** The work aimed to explore an extended discharge matrix Pioglitazone tablets with Aloe vera leaves mucilage (AVLM) and to study its functionality as a matrix former for the extended discharge of Pioglitazone from tablet formulations. **Methodology:** Physicochemical possessions of parched AVLM powder were studied. Various formulations of Pioglitazone with AVLM were made by direct compression practice. **Results:** The tablets passed uniformity of weight, Pioglitazone content and other constraints. The swelling nature and in vitro discharge rate were assessed and were within the standards. **Conclusion:** The dissolution explores the matrix forming property of AVLM in designing an extended discharge Pioglitazone tablets. **Keywords:** Aloe, Discharge, Tablets, Pioglitazone.

**Econazole β-Cyclodextrin Complex Ocuserts Designing, Assessing in vitro and in vivo**

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**Background:** The main drive of the existing study was to develop ocsuets of Econazole β-CD (beta-cyclodextrin) complex and to assess in vitro and in vivo constraints. **Methodology:** Econazole was made a complex with β-CD and the discharge rate was protracted by HPMC K4M and Ethyl cellulose using dibuty Phthalate as penetrability accompaniment. Econazole- excipients relations were deliberate by DSC and FTIR studies. The designed ocsuets were assessed for physicochemical restrictions of in vitro discharge and in vivo infusion in rabbits. The optimized formulations (F-6 and F-8) were endangered to stability studies. **Results:** The films showed appreciable mechanical constraints both in vitro and in vivo. The optimized films maintained their features even after hassled environments. **Conclusion:** The study explored as an effective way of making ocsuets for retentive the Econazole levels at the envisioned site of action for appropriate duration and to provoke the anticipated therapeutic outcome. **Keywords:** Econazole, β-CD, Film, Eye.

**Formulation Development and Evaluation of Accelofenac fast Disintegrating Tablets Employing Natural Super Disintegrants**

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**Background:** Fast disintegrating tablets are defined as solid dosage forms containing medicinal substances which disintegrate rapidly, usually within a matter of seconds when placed upon the tongue. The present work is concerned with the formulation and in-vitro evaluation of fast disintegrating tablets of an inflammatory drug using natural super disintegrating agents like jack fruit seed powder and oats powder to achieve rapid disintegration. **Methodology:** The tablets were prepared by direct compression method. Ten formulations were developed with different concentrations (2%,4%, 6%, 8% and 10%) of natural polymers like jackfruit seed powder and oats powder. FTIR and DSC studies showed no evidence of interaction with drug, natural super disintegrating agents and other excipients. Precompression parameters were evaluated for all the formulations and were in the acceptance limits. Post compression parameters like hardness, friability, disintegration test and dissolution test were evaluated. **Results:** The in-vitro drug release of F5 formulation which contains jack fruit seed powder exhibited 98.7% of drug release at the end of 30 min and the disintegration time was found to be 32 seconds and follows first order kinetics. **Conclusion:** The study can be considered as a promising formulation to provide rapid therapeutic benefit. **Keywords:** Accelofenac, Disintegration, Jackfruit seed powder, Oats powder.

**Formulation and Evaluation of Broad-spectrum Herbal Shampoo Powder**

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**Background:** The shampoo sector is the biggest unit sale amid the hair care products, as shampoos are one of the cosmetic products used in daily life. Artificial preservatives and detergents used in them adversely affect the hair and scalp. A more fundamental tactic in minimizing the synthetic components is by adding natural extracts whose functionality is analogous with their synthetic one. Added profits are anticipated viz., conditioning, smoothing, silky hair viz., anti-dandruff, grime, greasiness and lice. **Methodology:** This herbal shampoo was made using natural ingredient like Azadirachta indica (neem), Acacia concinna (shikakai), Spindus mokorossi (reetha), Ocimum sanctum (Tulsi), Aloe barbadensis (aloet), Embelia officinlis (amla), Lawsonia inermis (Henna), Trigonella foenum-graecum (Fenugreek), Hibiscus rosa-sinensis (China Rose) and Centella asiatica (brahmi) with established effectiveness of hair carries made. The amalgamation of such components from nature made it conceivable to see a cure highly operative dry powder shampoo. The shampoo was prepared in the laboratory as per GLP and assessed for the number of strictures to ensure its protection and usefulness. **Results:** The prepared shampoo was found to have near to neutral pH and pale green colour. The anti-microbial activity shown was satisfactory. **Conclusion:** The prepared shampoo powder was found to have anti-microbial activity with good texture. **Keywords:** Assessing, Effective, Poly herbal, Shampoo.
Enhancing the Water Solubility of Chrys in through Semi-synthetic Approach-Efficacy Enhancement for Anti-bacterial Activity

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Background: Flavonoids belongs to a large group of natural poly phenolic compounds and have a wide range of pharmacological activity but many of them have extreme low solubility in aqueous media. While, the solubility is one of the major biopharmaceutical characteristics that largely determine the drug bioavailability. Among the flavonoids chrysin was reported for many activities. The present work is concerned with the synthesis of semi synthetic derivatives of chrysin by amine substitution. The objective of this study was to improve their Anti-bacterial activity by increasing their aqueous solubility.

Methods: The compounds were synthesized by various amine substitutions. These derivatives were characterized by TLC, NMR and IR Spectroscopy. Five compounds were developed and performed molecular docking by selecting DNA gyrase as target (one click docking). And tested for antibacterial activity by taking ofloxacin as standard and using S. aureus (by Agar diffusion method) by measuring the zone of inhibition. Results: Anti-bacterial studies showed that synthesized compounds have better activity when compared to chrysin at relative concentrations (higher zone of inhibition). Conclusion: Semi synthetic derivatives of chrysin are showing good anti-bacterial activity than the synthesized compounds by amine substitution. The objective of this study was to improve their Anti-bacterial activity by increasing their aqueous solubility. Conclusion: Semi synthetic derivatives of chrysin are showing good anti-bacterial activity than the synthesized compounds by amine substitution.

Keywords: Flavonoids, Chrysin, Docking, Solubility, Zone of inhibition.

Isolation and Identification of Bacillus mycoides from Contaminated and Stored Starchy Food

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Objectives: Good quality and fresh food is responsible for health. This work reveals that the stored food cause the food borne diseases. Methods: Streak plate technique was used for isolation. Nutrient agar plates were incubated for 24 hr at 37°C. The plates were examined for growth. The isolated bacteria species were identified as Bacillus cereus and Bacillus mycoides and Escherichia coli. All biochemical characters are identified through various tests which gave positive results to starch hydrolysis test, Vogesproskauer, catalase test, citrate utilization and negative results to indole production test, methyl red test, gelatin hydrolysis test, casein hydrolysis and oxidase tests. Results and Conclusion: Effect of various physico-chemical parameters such as temperature, PH and NaCl were studied on the growth of degrading bacteria. Good growth of Bacillus sp was obtained in 0.2 to 0.5% of NaCl solution. The results obtained indicate that the growth of the Bacillus species involved in degrading the food because the abundant supply of various elements the growth of fungi and other infectious organisms causing various diseases. This study revealed that street foods are potential vehicles for transmitting food borne diseases.

Keywords: Bacillus mycoides, Starchy food, Contaminated food, Food borne diseases.

Bioremediation of Heavy Metals by Gamma Proteobacteria and Micrococcus luteus for Copper and Lead Biosorption from Industrial Effluents and Biological Wastes

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Objective: Micrococcus luteus and pseudomonas alcaligenes were immobilized for continuous removal of copper and lead ions from waste-waters, biological wastes and industrial heavy metal contaminated effluents. Methods: Both metal-resistant and non-resistant bacteria from activated sludge treating both metal-contaminated industrial effluents and municipal wastewater were isolated and identified. One yeast strain was identified (Candida albicans). Ten species of metal-resistant bacteria and ten dominant species of metal non-resistant bacteria were isolated from activated sludge for biosorption of heavy metals. Among these isolates, gamma proteo bacteria those are resistant to chemical antimicrobials and Micrococcus luteus were selected for further investigations due to their high copper and lead biosorption capacities.

Results and Conclusion: Cells of gamma proteobacteria and M. luteus could be used for at least five alternate biosorption and desorption cycles without loss of copper removal capacity. Immobilization of M. luteus in 2% calcium alginate and 10% polyacrylamide gel bead increased copper uptake by 81 %. M. luteus and Pseudomonas alcaligenes may have potential applications in removing and recovering copper and lead respectively from industrial effluents.

Keywords: Gamma proteo bacteria, Biosorption, Immobilization, Heavy metals.

Development and Characterization of polyherbal formulation: Evaluation of its potential in alleviating oxidative stress – induced liver damage in Albino Rats

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Objectives: There is a gradual increase in the morbidity and mortality of the liver problems which needs better remedies to curtail them. The present study involves the development of poly herbal formulation by using four different plants i.e (Cicerarietinum, Tabebuia argentea, Acacia leucophloea, Biophytum involvente) in treating the liver problems which needs better remedies to curtail them. The present study involves the development of poly herbal formulation by using four different plants i.e (Cicerarietinum, Tabebuia argentea, Acacia leucophloea, Biophytum involvente) in treating the liver problems.

Keywords: Hepatotoxicity, Poly herbal formulation, Oxidative stress.
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Felicitation to the Speakers by Scientist from ICMR-NIRT
DR VN Azger and Senior Fellow of Novaritis
Sri Ramaligeswara Rao

Felicitation to the Chief guest
By Dr Y Padmanabha Reddy (Principal) and Dr P Ramalingam (Convener)