REVIEW ARTICLE

AN ETHNOBOTANICAL SURVEY OF FOLK, MEDICINAL PLANTS USED BY THE TRIBES OF URULANTHANNI, ERNAKULAM (DT), KERALA

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Abstract : An ethno botanical survey carried out during the year 2007 revealed that people who were living in the tribal areas of Urulanthanni and Pooyamkutty forest were using large number of plants for medicinal purposes. 64 medicinal plants belonging to different families were recorded under study. In this communication, information obtained from the tribal was compared with the already available literature from several books on medicinal plants. The medicinal plants used by them are arranged in the alphabetical order followed by family name, local name, parts used, medicinal uses and chemical constituents. The observations recorded here add to the growing evidence that unique ethno botanical traditions exist in Kerala.

RESEARCH ARTICLE

FORMULATION AND EVALUATION OF BUCCOADHESIVE BILAYARED TABLETS OF CARVEDILOL

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ABSTRACT: The purpose of this research work was to establish mucoadhesive buccal tablets of carvedilol in the forms of bilayered tablets. The tablets were prepared using Hydroxy propyl methyl cellulose (HPMC K4M) and sodium carboxymethylcellulose (SCMC) and carbopol-934 (CP) as bioadhesive polymers to impart mucoadhesion and ethyl cellulose (EC) to act as an impermeable backing layer. Buccal tablets were evaluated by different parameters such as weight uniformity, content uniformity, thickness, hardness, surface pH, swelling index, *ex vivo* mucoadhesive strength, *in vitro* drug release, and *in vitro* drug permeation. The mechanism of drug release was found to be non-Fickian diffusion (value of n between 0.5 and 1.0) for both the buccal tablets. The present study concludes that mucoadhesive buccal tablets of carvedilol can be a good way to bypass the extensive hepatic first-pass metabolism and to improve the bioavailability of carvedilol.

Keywords: Bilayered buccal tablet, buccal delivery, mucoadhesion, carvedilol

RESEARCH ARTICLE

PROTECTIVE EFFECT OF ACHYRANTHES RUBROFUSCA ON D-GALACTOSAMINE INDUCED LIVER DAMAGE IN RATS

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ABSTRACT: *Achyranthes Rubrofusca* (AR) is commonly known as Kadaladi is a well known drug among the tribal population for various ailments. In the present study the HEpatoprotective effect of AR was carried out by using D-galactosamine induce hepatic damage in Wister rats. The aqueous and ethanolic extracts were evaluated for the hepatoprotective activity at a dose of 300mg/kg. The serum enzyme level like SGP and SGOT and other parameters like ALP, Total Bilirubin and liver protein levels were also evaluated with single dose administration of 400mg/kg of D-galactosamine. The serum enzyme level was near to normal with extract treated group of animals. This effect of the plant extract was compared with a standard drug Silymarin 25mg/kg. From the study it is confirmed that the plant extract of (AR) show significant effect in protecting the hepatic cell from D-galactosamine induced toxicity.

Key words : D-Galactosamine, hepatic damage, ALT, aqueous extract, bilirubin.

RESEARCH ARTICLE

DESIGN AND EVALUTION OF ORNIDAZOLE COLON SPECIFIC DRUG DELIVERY SYSTEM

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ABSTRACT : The main focus of this study is to develop Colon specific drug delivery system for Ornidazole. Tablets were prepared using various 'GRAS' (Generally regarded as safe) polysaccharides such as Guar gum (GG), Pectin, Dextrin, Chitosan and Xanthum gum (XG) as carriers, at three different ratios of drug: polysaccharide (1.0: 0.5, 1.0:1.0, 1.0:1.5) by wet granulation method. The prepared tablets were evaluated for general apprearance, thickness, diameter, hardness, friability, weight variation, drug content & also tested invitro for their suitability as Colon specific drug delivery system. The formulations – F2, F6, F9, F12 & F14 were selected from each polysaccharide , which showed restricted drug release (16 – 19%) in small intestine and more drug release (81 – 84%) in colonic) environment. To target the colon, tablets were enteric-coated with Eudragit L-100. The enteric-coated formulations (ECF1 – ECF5) showed 12-18% drug release in stomach & small intestine and completely released the remaining amount of drug in the colon. The kinetics of drug release showed that the enteric – coated formulations fitted well into Hixson- Crowell kinetics followed by zero order. All the formulations showed no change in physical appearance and in drug content after storage at 40oC + 2oC / 75% + 5% RH for 3 months. DSC & FTIR studies indicated no possibility of interaction between ornidazole and polysaccharide/other formulation excipients. The in vivo study showed that the system could be effectively targeted to the colon.

Key words: Ornidazole; Polysaccharide based colon specific drug delivery; Enteric coating; In vitro dissolution.

RESEARCH ARTICLE

HEPATOPROTECTIVE ACTIVITY OF ERYTHRINA STRICTA ROXB. AND VITEX NEGUNDO L. AGAINST CARBON TETRACHLORIDE-INDUCED HEPATOTOXICITY IN RATS

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ABSTRACT: The present study was aimed at investigating the hepatoprotective activity of the ethanolic extract of the leaves of Erythrina stricta Roxb. (Fabaceae) and Vitex negundo L. (Verbenaceae) against CCl_4 –induced hepatotxicity in rats. Liver function was assessed by the determination of serum marker enzymes like aspartate transaminase (AST), alanine transaminase (ALT), alkaline phosphatase (ALP) and bilirubin. The end product of lipid peroxidation, namely malondialdehyde (MDA) and the activities of antioxidant enzymes namely, glutathione peroxidase (GPx), catalase (CAT) and superoxide dismutase (SOD) and the non-enzymatic antioxidant, reduced glutathione (GSH) were also measured in the liver homogenate. Silymarin (25 mg/kg b..w., p.o.) was used as the standard drug. Treatment with CCl_4 (0.5 ml/kg, i.p.) for 7 days produced a significant increase in the activities of serum marker enzymes and liver MDA and a decrease in the tissue enzymatic and non-enzymatic antioxidants when compared with the control group. Oral administration of Erythrina stricta leaf extract (ELSE) and Vitex negundo leaf extract (VNLE) at a dose of 200 mg/kg b.w., simultaneously with CCl_4 for 7 days resulted in a significant ($P<0.01$) reduction in serum marker enzymes and liver MDA and a significant ($P<0.01$) improvement in antioxidant activity when compared with CCl_4 damaged rats. Histopathological studies revealed that concurrent administration of the extracts with CCl4 exhibited protection of the liver, which further evidenced its hepatoprotective activity. The activity produced by the extracts was almost comparable to the silymarin-treated group. The study confirmed the hepatoprotective activity of the leaves of Erythrina stricta and Vitex negundo which could be attributed to its antioxidant potential.

Key words: Erythrina stricta, Vitex negundo, Carbon tetrachloride, hepatoprotective activity

RESEARCH ARTICLE

FORMULATION AND EVALUATION OF MESALAMINE MATRIX TABLETS USING NATURAL POLYMERS FOR COLONIC CONTROLLED DELIVERY

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ABSTRACT: Natural polysaccharides have been used as tools to deliver the drug specifically to the colon. These polysaccharides remain intact in the physiological environment of stomach and smsll intestine but once the dosage from enters into colon, it is acted upon by polysaccharidases, which degrades the polysaccharide and releases the drug into the vicinity of bioenvironment of colon. Inflammatory bowel disease (IBD) is a localized inflammation of the small and large intestine. Mesalamine was used as a model drug in this study because there is a therapeutic benefit for the colonic delivery of this drug for the treatment of IBD. Mesalamine matrix tablets were prepared using Natural polysaccharides such as Pectin, Guargum and chitosan (10, 20 and 30% w/w) for colon specific drug delivery. Of the nine formulations, it appears that B3 (chitosan 30% w/w) has the maximum potential in providing colon targeted controlled drug delivery. It showed a burst effect between 10 and 12 h and there was a significant difference in the drug release compared to the control. It is also observed that the selected B3 formulation follows a Zero-Order non-Fickian mechanism for drug release.

Keywords: Colonic controlled delivery, mesalamine, Inflammatory bowel diseases, natural polysaccharides

RESEARCH ARTICLE

FORMULATION AND PHYSICO-CHEMICAL EVALUATION OF TRANSDERMAL PATCHES CONTAINING CERTIZINE DIHYDROCHLORIDE

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ABSTRACT: In the present study, matrix type transdermal patches containing cetrizine dihysrochloride drug with various proportion of polymers hydroxylpropylmethylcellulose, ethylcellulose, polyvinylpyrolidine, either alone or in combination were prepared. Rate controlling membarane was prepared using 1% w/v of ethylcellulose. Dibutylphthalate was incorporated as plasticizer in the concentration of 30% w/w for both the films. Prepared matrix type films were evaluated for different physic chemical characters such as thickness, weight variation, folding endurance, water absorption capacity, percentage moisture loss, percentage moisture absorption, water vapor transmission, tensile strength & percentage elongation and drug content uniformity.

Key words: transdermal therapeutic systems (TTS), certizine (CTZ), water vapor transmission (WVT).

RESEARCH ARTICLE

MICROWAVE INDUCED SYNTHESIS AND ANTIMICROBIOL ACTIVITY OF SOME THIAZINE DERIVATIVES OF 2-SUBSTITUTED BENZIMIDAZOLE

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ABSTRACT: The present study deals with synthesis of some new thiazine derivatives of benzimidazole from 2-acetyl benzimidazole. The 2-acetyl benzimidazole was prepared by the Microwave induced reaction between o-phenylene diamine and lactic acid, followed by oxidation with potassium dichromate. The chaclcone derivatives of 2-acetyl benzimidazole were prepared by the condensation with different aldehydes and the resulting compounds were cyclized with thiourea, to get the thiazine derivatives of benzimidazole (IVa-h).

The synthesized compounds have been characterized and confirmed by TLC, elemental analysis, IR and 1H NMR Spectroscopy. Those compounds were screened for their antibacterial and antifungal activities by cup-plate method. Most of the synthesized compounds show good activity.

Key words: Microwave synthesis, Benzimidazole, Thiazine, antibacterial and antifungal activity.