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Preparation and evaluation of nanoparticulate drug delivery system of poorly water soluble drug

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Nanoparticle technology is emerging as a preferred approach to address challenges involved in the delivery of BCS class-II compounds (poorly soluble and highly permeable).The development of nanoparticle formulations for BCS class-II drugs would result in enhanced bioavailability,the objective of the present investigation was to enhance the oral bioavailability of practically insoluble drug by preparing nanosuspension. The nanosuspension was prepared by high pressue homogenization technique and converted to solid state by spray drying. The spray dried nanosuspension was evaluated for particle size, zeta potential, saturation solubility, crystallanity, surface morphology and dissolution behavior The nanosuspensions were converted into solid intermediate or granules by layering on to a water-soluble carrier Lactose using a spray granulation processes. The granules were blended with excipients for tabletting. The saturation solubility and dissolution characteristics of nanoparticle formulations were investigated and compared with commercial tablet formulations in a discriminating dissolution media. The result indicated there was no solid-state transition upon spray drying method. A significant enhancement in dissolution rate for tablet dosage form incorporating drug nanoparticles was observed compared to the pure drug. The manufacturing process used is relatively simple and scalable indicating viability of the approach for commercial manufacture of drug product.

Hypoglycemic effect of Eugenia bracteata roxb methanolic extract roxb in albino rats

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Diabetes mellitus is a chronic metabolic disorder characterized by degeneration of carbohydrates, protein and fat metabolism. Such alterations result in increased blood glucose, which causes long-term complications in many organs. Diabetes mellitus is a group of metabolic diseases characterized by hypoglycemia resulting from defects in insulin secretion. Eugenia bracteata roxb belongs to myrtaceae family and available in India. The preliminary phytochemical screening of extract Eugenia bracteata revealed the presence of sterols, flavanoids, tannin, glycosides alkaloids, triterpenoids, saponins, and reducing sugars. A number of investigators have shown that coumarin, flavonoid, terpenoid and a host of other secondary plant metabolites including arginine and glutamic acids posses hypoglycemic effects in various experimental animals model. For the present work, The plant material was shade-dried and subjected to size reduction and extracted with methanol. Graded doses of the methanolic extract (250 and 500 mg/kg i.p.) was administered separately to groups of fasted normal rats and the hypoglycemic effect of this extract was studied by comparing with that of standard drug Tolbutamide (40mg/kg). Significant reduction ($p<0.05$) of blood glucose levels was observed after 6 hours of administration.

Specrophotometric Determination and validation of synthesised Benzoyl derivative of Ciprofloxacin in bulk and Pharmaceutical Dosage forms.

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A new, simple, sensitive and rapid spectrophotometer method was developed for the examination of newly synthesized benzoyl derivative of ciprofloxacin in bulk and Pharmaceutical dosage form. The method was based on formation of reddish brown chromogen with 0.01M potassium dichromate and concentrated hydrochloric acid. The reddish brown colored chromogen formed in method may be due to the oxidation of amino group present in the quinolin ring of the drug by oxidation agent like potassium dichromate. The absorption maximum for the above method was found to be 580.The chromogen formed obeyed beer's law in the concentration range of 0.5-3.5 ug/ml-1.The developed method was validated as per the FDA guidelines.

Key words: Ciprofloxacin, Cromophore, Absorbance.