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Development and Optimization of Colon Targeted Drug Delivery System of Ayurvedic Churna Formulation Using Eudragit L100 and Ethyl Cellulose as Coating Material

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Abstract : The purpose of this study was to prepare time and pH dependent release tablets of Ayurvedic Churna formulation and evaluate their advantages as colon targeted drug delivery system. The Vidangadi Churna was selected for this study which contains Embelin and Gallic acid. Embelin is used in Helminthiasis as therapeutic agent. Embelin is insoluble in water and unstable in gastric environment so it was formulated in time and pH dependent tablets coated with combination of two polymers Eudragit L100 and ethyl cellulose. The 150mg of core tablet of dried extract and lactose were prepared by wet granulation method. The compression coating was used in the polymer concentration of 150mg for both the layer as upper and lower coating tablet was investigated. The results showed that no release was found in 0.1 N HCl and pH 6.8 phosphate buffers for initial 5 hours and about 98.97% of the drug was released in pH 7.4 phosphate buffer in total 17 hours. The in vitro release profiles of drug from the formulation could be best expressed first order kinetics as highest linearity (r2= 0.9943). The results of the present study have demonstrated that the time and pH dependent tablets system is a promising vehicle for preventing rapid hydrolysis in gastric environment and improving oral bioavailability of Embelin and Gallic acid for treatment of Helminthiasis.

Keywords : embelin, gallic acid, Vidangadi Churna, colon targeted drug delivery
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