PREPARATION AND EVALUATION OF METAL CROSS LINKED ALGINIC ACID BEADS FOR DRUG DELIVERY OF POORLY WATER SOLUBLE DRUGS

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Abstract

The development of controlled drug delivery (CDD) formulations using natural polymers like alginate has received increasing interest since these pharmaceutical systems offer advantages over conventional immediate release (IR) such as: (i) increased safety; (ii) convenience; (iii) lower cost; (iv) easy therapeutic regime; (v) intestinal absorption favored by the large surface area; (vi) reduced dosing frequency; (vii) decreased incidence and/or intensity of adverse effects; (viii) greater selectivity of pharmacologic activity, and (ix) prolonged therapeutic effect. Alginate is an effective natural disintegrant, tablet binder and offers an attractive alternative for sustained-release systems and is generally regarded as non-toxic, biocompatible, biodegradable, less expensive and abundantly available in nature.Calcium cross linked alginic acid beads loaded with rifampicin and fenofibrate were prepared by ionotropic gelation technique. The surface morphology of prepared beads were characterized using SEM .The types of interaction were investigated using the FTIR . The swelling behavior of prepared beads in simulated gastric and intestinal fluids at 37 ◦C were studied . In vitro release of rifampicin and fenofibrate were also studied in simulated gastric and intestinal fluids at 37 ◦C.The effect of chitosan coating in the in vitro release of rifampicin from calcium alginate beads were also investigated.