



Journal of Hospital Pharmacy
An Official Publication of Bureau for Health & Education Status Upliftment

(Constitutionally Entitled as Health-Education, Bureau)

Comparative in Vitro Study of Hydroxy Propyl Methyl Cellulose Capsule and Gelatin Capsule Shells for Targeted Drug Delivery of Chitosan

¹Sachin S. Kulkarni*, ²Vaishnavi B. Kendre, ³Vidya M. Yelam,

⁴Vishweshwar M. Dharashive

Shivlingeshwar College of Pharmacy, Almala, Latur, Maharashtra, India. 413520

Running title: HPMC capsule shell as a Novel Targeted drug delivery system.

Email Id: serviceheb@gmail.com

ABSTRACT:

Chitosan is polysaccharide derived from chitin extracted from crustaceans which are marine species and some other species such as fungi, algae and insects. It is biodegradable product pursue various pharmaceutical properties. It utilized for purpose of hyperlipidaemia, wound dressings, astringent and hydrogel capsule shell excipient or formulation. Capsules are formulated on the basis of principle of cross-linking polymer changes. We studied that capsules has good quality and cost effectiveness. It has proven that it is a novel targeted drug delivery system. In Vitro evaluation of dosage form is significant for dissolution rate of 50% in 30 min and 90% in 90 min at pH 3.8. It rapidly dissolves in neutral pH and gel formation at pH 1.8. Disintegration time for capsule at ideal pH i.e. 3.8 is 10-15 minute for drug release. In terms of swelling properties highly swellable in lateral condition and low at axial condition. Quality properties of mucoadhesive and viscosity are much better. Viscosity range values of capsule are 9.38% (w/v) for mucin solution. We concluded that with In Vitro evaluation capsule possess the good disintegration time, dissolution rate and mucoadhesive properties associated with quality and cost effectiveness. It is easily available product and better alternative for other capsule shells. It is novel targeted drug delivery system with better biocompatibility.

KEYWORDS:

Chitosan, HPMC capsule, Quality, Cost effectiveness, Targeted drug delivery, dissolution rate, Biocompatibility.

Access this Article Online	Quick Response Code: 
Website: http://www.journalofhospitalpharmacy.in	
Received on 29/09/2023	
Accepted on 11/10/2023 © HEB All rights reserved	