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Formulation and Evaluation of Chitosan/Chondriotin Sulphate Complex Microcapsules for Controlled Delivery of Water Soluble Drug

Yaduvanshi M. RAM, Hemant K.S. YADAV*, Mangla N. SINGH & H.G. SHIVAKUMAR

Department of Pharmaceutics, JSS College of Pharmacy,
JSS University, Mysore-15, Karnataka, India

SUMMARY. Oral route of drug administration is the most preferred route of drug administration but this route has its own limitations like pH of gastric media and controlling release rate of water soluble drug. To overcome these limitations, formulations containing controlled release matrix need to be developed. Controlled release of drug can be achieved by incorporating the drug into a release rate controlling carriers. Chitosan (CH)/Chondroitin Sulphate (CS) complex microcapsules were prepared to encapsulate the cardio vascular drug Propranolol hydrochloride (PHCl) by emulsion-chemical crosslinking method using sodium tripolyphosphate (STPP) as cross-linking agent. The FT-IR and DSC spectra's revealed that there is no chemical interaction between drug and polymers used. Encapsulation efficiency and *in-vitro* drug release was found to be 64-84 % and 55-85 % respectively. Among all the formulations the F4.1 showed controlled drug release. This study revealed that the cross linked microcapsules of chitosan and chondroitin sulphate can be used to control drug release rate of water soluble drug.

KEY WORDS: Chitosan, Chondriotin sulphate, Cross linking, Microcapsules, Propranolol hydrochloride.

* Author to whom correspondence should be addressed. *E-mail:* haisunny2@yahoo.co.in

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