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Formulation and evaluation of ketorolac tromethamine floating *in situ* gelling system

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Abstract

Effective pain management requires prolonged delivery of the non-narcotic analgesic ketorolac tromethamine (KTM). KTM is having a short biological half life of about 5-7 h and frequent dosing is required in the form of conventional tablets. Keeping the above facts in mind, we have made an attempt to develop a new stomach specific floating *in situ* gelling system of the drug using pectin as a natural, biodegradable and gelling polymer. A 1%,1.5%, 2% (w/v) sols of pectin containing calcium carbonate and drug were prepared and characterized for rheological behavior, floating lag time (FLT), duration of floating (DOF), physical appearance, *in vitro* drug release studies and *ex vivo* studies. Viscosity of the sols was determined at different shear rates and they exhibited shear thinning property of Newtonian systems. *In vitro* buoyancy of *in situ* formed gel was determined for the FLT, DOF. FLT of 23 sec and DOF of 24 h were observed with 2 % pectin. The effect of polymer concentration on *in vitro* drug release from *in situ* gels was investigated and found that there was a significant decrease in the rate and extent of drug release with increasing concentration. Visual observation of the contents, following administration of 1 ml sols of 2% (w/v) pectin and a marker dye (Aniline blue water soluble dye) was administered to rat and observed for the presence of gel in rat stomach. The presence of any drug-polymer interaction was studied by FTIR spectroscopy.

Biography

Prabhakar Reddy Veerareddy is an accomplished researcher, eminent teacher in Pharmaceutical Sciences. Currently He is serving as Principal&Head at Chaitanya College of Pharmacy Education and Research, Hanamkonda, Andhra Pradesh. He has spent one year at Butler University, Indiana Polis, USA for Post Doctoral Research and pursued his doctoral thesis (Pharmaceutics) at Novel Drug Delivery Laboratories in Kakatiya University, India during 2005. He has attended many symposiums and workshops at the national and international level. He has more than 50 research publications in several international journals, and he guided 35 M. Pharm students and 4 PhD students.