

ABSTRACT

The Effect of Concentration HPMC K100LV toward Mucoadhesive Characteristics and Release Ranitidine HCl (Sustained Release Mucoadhesive Tablets with Combination of Carbopol 934P and HPMC K100LV as Matrix Tablet)

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The purpose of this study is to prepare an oral sustained release mucoadhesive tablet. Mucoadhesive tablets are developed to prolong gastric residence time. Ranitidine HCl is one of the H₂ blocker that commonly used for treatment of gastrointestinal disease such as gastric ulcer and duodenal ulcer. Ranitidine HCl is absorbed from the upper part of gastrointestinal track and metabolized in the colon that can degrade the drug. Hence, a mucoadhesive drug delivery system is prepared to enhance the absorption of ranitidine HCl leading to improve it's bioavailability. This study made four formulas of mucoadhesive ranitidine HCl tablet with matrix combination of 10% Carbopol 934P and 0%, 10%, 25%, 40% HPMC K100LV. The tablets are prepared using wet granulation. The prepared tablets were evaluated on their mucoadhesive characteristics and drug release. The dissolution test was performed using 900 ml of 0,1 N HCl at 37 ± 0,5 °C and 50 rpm. The test result showed that the mucoadhesion time and swelling index is improving as the increasing concentration of HPMC K100LV. The kinetic release of all the formulas are dominated Higuchi kinetics. The release mechanism dominated by diffusion from porous matrices.

Key word : ranitidine HCl, mucoadhesive tablet, Hydroxypropyl methylcelluloce K100LV, Carbopol 934P.