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Effect of Citric Acid and Polymer Blend on Characteristics of Ofloxacin Floating Matrix Tablets by Factorial Design

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SUMMARY. The present investigation deals with the development of floating matrix tablet containing Ofloxacin, to prolong the gastric residence time, thereby effective in eradication of *Helicobacter pylori* from the gastric mucosa. A 3^2 factorial design was employed to formulate floating matrix tablet selecting polymer blend ratio [hydroxypropyl methylcellulose (HPMC) / sodium carboxymethylcellulose (SCMC)] and content of citric acid as independent variables. Time required for 50 % of drug release ($t_{50\ \%}$), percentage drug release at 8 h (Q_8), floating duration (h) and diffusion exponent (n) were selected as dependent variables. Multiple regression analysis with two way ANOVA revealed statistically significant effect of the two independent variables on the responses studied ($P < 0.01$). Floating duration varied from 7.5 h to 20 h, Q_8 varied from ~ 76 % to ~100 % whereas $t_{50\ \%}$ ranged from 1.7 h to 3.7 h. The kinetics of drug release fitted best to Higuchi diffusion controlled model.

KEY WORDS: Ofloxacin, Floating matrix, Citric acid, HPMC, SCMC, Factorial design.

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