



Formulation and Evaluation of Colon Targeted Drug Delivery System of Flurbiprofen using HPMC and K4M Sodium Alginate as Polymeric Carrier

M. Purushothaman^{*1}, V.Kalvimoorthi²

¹Scient Institute of Pharmacy, Ibrahimpatnam, Hyderabad-501506, India

²Sun Rise University, Alwar, Rajasthan – 301030, India.

Abstract : The aim of the present work was to develop and evaluate colon specific sustained release tablet using Flurbiprofen, microbially degradable polymeric carrier (HPMC K4M & Sodium Alginate), coating material and matrix forming polymers. The colon targeted tablet was prepared by wet granulation technique using different percentage of Sodium Alginate as matrix carrier, starch mucilage as a binding agent, HPMC K4M as swellable polymer and coated with Eudragit polymers. Sodium Alginate, drug and physical mixture were evaluated for incompatibility study by Fourier transform infrared spectroscopy (FTIR) and differential scanning calorimetry (DSC). All the batches of matrix tablet (F1-F9) were subjected for in-vitro dissolution in various simulated gastric fluids for suitability for colon specific drug delivery system. Tablets were evaluated for micromeritic properties of granules, physical properties, drug content, water uptake and erosion characteristics. F3, F6, F9 was optimized and subjected to coating based on evaluation results. The dissolution study of F9 revealed, release was 47.56% at the end of 6h and 99.97% after degradation at the end of 24h. The colon targeted matrix tablet of Flurbiprofen showed no change either in physical appearance, drug content or dissolution pattern after performing stability study for 6 months. The studies confirmed that, the designed formulation could be used potentially for colon delivery by controlling drug release in stomach and the small intestine.

Key words : Flurbiprofen, Colon targeted matrix tablet, Sodium Alginate, HPMC K4M, Eudragit Polymer.