**ABSTRACT**

Sustain release tablets containing combination of Diclofenac sodium and Serratiopeptidase were prepared in the ratio of 50 : 10 mg. along with other exciepients for the therapeutic treatment of analgesic and anti-inflammatory activity in rhuematoid arthritis –an attempt was made to formulate a sustained release formulation with increased patient compliance and decreased signs of adverse effects. Serratiopeptidase, also known as Serrapeptidase, is a powerful proteolytic enzyme obtained from silkworms. The enzyme is produced by themicroorganism Serratia E 15 which lives in the gut wall of the silkworm. This enzyme is an ingredient of anti-inflammatory drugs used for the treatment of arthritis, sinusitis, and several other inflammatory conditions of muscle and bones. Unlike other anti-inflammatory drugs like steroids and NSAIDs, Serratiopeptidase do not inhibit prostaglandins and is safe to the gastrointestinal system. In the present study, efforts have been made to prepare an oral sustained release system for these acid-labile enzymes Serratiopeptidase and Diclofenac sodium. Eudragit S100, different grades of HPMC and HEC were selected for this formulation. Eudragit S100 has been reported to release the drug at pH > 7, suitable for oral delivery of acid-labile enzymes.

**Keywords -** Diclofenac sodium, Serratiopeptidase, HPMC, HEC, Eudragit S100