Non-steroidal anti-inflammatory drugs (NSAIDs), commonly used for the treatment of chronic inflammatory diseases suffer from several undesired side effects, most important being gastrointestinal (GI) irritation and ulceration. The prodrug designing is one of the several strategies used to overcome this drawback. The rationale behind the prodrug concept is to achieve temporary blockade of the free carboxylic group present in the NSAIDs till their systemic absorption. Synthesis of Prodrugs was done in two parts with two different aims.

Part A: Synthesis of Mutual Prodrugs of NSAIDs with synergistic effects.

Part B: Synthesis of Mutual Prodrugs of NSAIDs with additional effects.

In Part A work, NSAIDs- propyphenazone esters were synthesized as prodrugs with the aim of improving therapeutic index through prevention of GI irritation and bleeding. The mutual prodrugs of NSAIDs with Propyphenazone were synthesized by three different methods. In the first method potassium salt of NSAIDs having carboxylic acid as functional group were condensed with 3-bromo methyl propyphenazone. Second method involved direct coupling of carboxyl group of NSAIDs with hydroxyl group of 3-hydroxymethyl propyphenazone. The third method of synthesis involved the coupling of carboxyl group of NSAIDs with amino group of glycinyl-3-hydroxymethyl propyphenazone (Gly-HMP).

In Part B work, NSAIDs - Allopurinol mutual prodrugs were synthesized with antigout activity additional to anti-inflammatory and analgesic activity of NSAIDs.

The structure of the synthesized prodrugs were confirmed by IR, $^1$H NMR, Mass spectroscopy and their purity was established by TLC. Synthesized prodrugs showed satisfactory anti-inflammatory activity with less ulcerogenic side effects.

Key words: NSAIDs; Propyphenazone; Allopurinol; Mutual Prodrug