



## Design and Synthesis of Possible Mutual Prodrugs of Naproxen and Acetylsalicylic Acid with Gemcitabine

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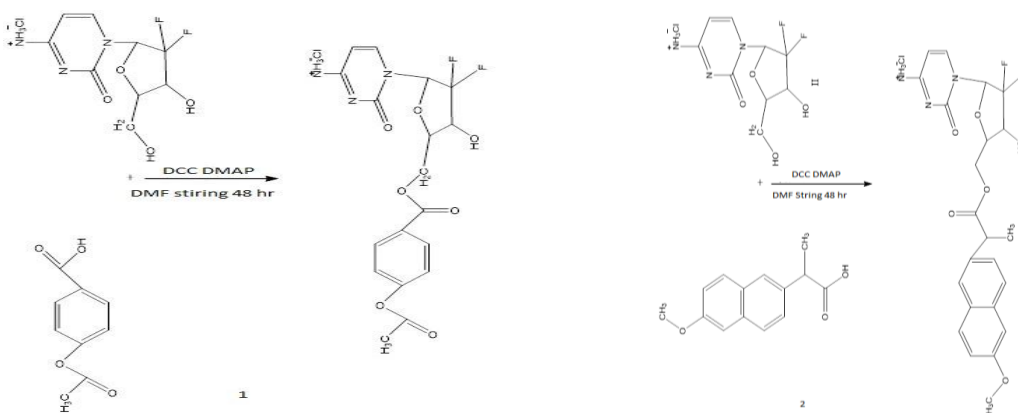
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### ABSTRACT

'Non-steroidal anti-inflammatory' (NSAIDs) drugs are most commonly used type of medications and its long period of use result in unwanted side effect like (GI) ulceration. (COX-II) have an important role all over oncogenesis and so I explain the cause of using (NSAID) (naproxen and Acetylsalicylic acid) together with cytotoxic drug [Gemcitabine] in the management of cancer. The research outlines the designing and synthesis of mutual prodrug of (NSAID) and (gemcitabine), which is nominated to create the interdependent pharmacological action as a single pharmacological unit with enhanced drug targeting. The synthesized products was advised by (FTIR) chart, (CHNS) analysis and physiochemical properties. The synthesized prodrug is supposed to diminish the undesirable effect of (NSAIDs) on the (GI) tract with amendment of the bioavailability and cancer targeting for (gemcitabine).

### Graphical Abstract



The synthesis schemes of (Naproxen Gemcitabine and Aspirin Gemcitabine prodrug} (1 and 2).

**Keywords:** Naproxen, Acetylsalicylic acid (ASA), gemcitabine, drug targeting, mutual prodrug.