Zaman Ashraf, Pharm Anal Acta 3:1
doi: http://dx.doi.org/10.4172/2153-2435.S1.10

OMICS Group Conferences
Accelerating Scientific Discovery

2nd International Conference on
Pharmaceutics & Novel Drug Delivery Systems

20-22 February 2012 San Francisco Airport Marriott Waterfront, USA

TITLE

Synthesis, Characterization and In vitro Hydrolysis Studies of Ester and Amide Prodrugs of Dexibuprofen

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Ten prodrugs of dexibuprofen having ester and amide moieties instead of free carboxylic acid which involves in gastrointestinal side effects have been synthesized. Dexibuprofen acid chloride was condensed with different amino acid methyl esterhydrochlorides and five alcohols to afford the amide and ester prodrugs. All of the synthesized prodsrugs were characterized by their mp, Rf, elemental analysis, FTIR, 1H NMR and 13C NMR spectroscopy. The invitro hydrolysis studies in plasma reflect prodrugs have been varied in terms of reactivity towards hydrolysis, owing to the different chemical structures. In alkyl substitution the branched chain alkyl substituents or aromatic substituents resulted in enhanced lipophilicity but diminished dissolution and hydrolysis rate. The amide prodrugs with branched and aromatic substitution can also be considered for sustained release. Prodrugs are less irritating to gastric mucosa than dexibuprofen.