Rishi Paliwal, Pharmaceut Anal Acta 2014, 5:3
http://dx.doi.org/10.4172/2153-2435.S1.020

OMICS Group Conferences
Accelerating Scientific Discovery

4th International Conference and Exhibition on
Pharmaceutics & Novel Drug Delivery Systems
March 24-26, 2014 Hilton San Antonio Airport, San Antonio, USA

Surface modified lipid nanocarriers for non-invasive oral delivery of biomacromolecule

Rishi Paliwal[1, 2], **Govind P Agrawal**[1] and **Suresh P Vyas**[1]
[1]Dr. H. S. Gour Central University, India
[2]Irma Lerma Rangel College of Pharmacy, USA

The aim of present study was to investigate the potential of chitosan and N-trimethyl chitosan coated solid lipid nanoparticles (SLNs) in oral delivery of low molecular weight heparin (LMWH). The developed systems were characterized for surface morphology, size and size distribution, zeta potential, entrapment efficiency and *in vitro* release behavior in simulated GIT mediums. *Ex-vivo* studies such as cytotoxicity, GIT permeability and muco-adhesiveness were also performed in order to optimize their efficacy. The biological activity and concentration of LMWH in the blood pool obtained after orally administration of formulations was estimated using FXa chromogenic assay. A significant increment ($p<0.05$) in oral bioavailability of LMWH was observed with these polymer coated SLNs than uncoated SLNs and plain LMWH solution. However, TMC coated SLNs demonstrated comparatively better performance than CS coated SLNs. These findings suggest that coating of TMC on SLNs surface significantly improves oral delivery of LMWH and hence may be used in clinical situations where oral heparin therapeutics potential is desired.

rishipaliwal@gmail.com