**Aims & Scope:**
Biotechnology has provided a wide array of therapeutic agents such as peptide, protein, vaccine and gene products that are mainly administered by means of injections. Therapeutic agents produced by biotechnological processes such as recombinant DNA technology, fermentation, tissue and cell culture technology as well as genetic engineering are usually large, hydrophilic molecules facing delivery challenges, for example, these drugs are susceptible to degradation and are generally poorly membrane permeable. Since successful delivery of any drug is a pre-requisite to achieve the therapeutic goal, novel strategies have emerged in the late 20th century to overcome challenges associated with the oral route of drug administration. These strategies include, but are not restricted to: 1) micro- and nanotechnology including self-emulsifying lipid based formulations, dendrimers and devices, 2) permeability enhancing technology, 3) targeting of active transporters and membrane receptors, 4) use of cell penetrating peptides, 5) chemical modifications of peptides such as inclusion complex formation and peptide conjugates, 6) site-specific delivery systems, 7) muco-adhesive systems and 8) polymeric hydrogels.

Despite the initial excitement regarding the potential of these technologies to provide effective oral delivery, few have advanced from the pre-clinical stage into clinical trials and very few, if any, resulted so far in registered medicinal products. Moreover, most literature provides information on effectiveness and mechanisms based on *in vitro* investigations without revealing the viability of these technologies in clinical practice. This special issue will critically assess the latest developments in the field of oral delivery of biotechnological therapeutic agents with specific reference to the prospects of them being successful in terms of product development.

**Keywords:**
Chemical modification, drug absorption enhancement, nanoparticles, lipid based formulations, muco-adhesive systems, polymeric hydrogels, site-specific delivery

**Subtopics:**
1) Overview of the origin, current status and future prospects of oral absorption enhancers  
2) Microdevices: a revolutionising technology in oral drug delivery  
3) Targeting transporters and receptors as a means to optimise biotechnology-derived drug delivery  
4) Physico-chemical modification approaches to improve biotechnology-based drug delivery  
5) Targeting specific sites in the gastrointestinal tract to optimise biotechnology-derived drug delivery  
6) Applications of lipid based formulation technologies in the delivery of biotechnology-based therapeutics  
7) Overcoming gastrointestinal barriers with cell penetrating peptides  
8) Innovations to modify gastrointestinal transit through mucoadhesion  
9) Oral delivery of biotechnology therapeutic agents with nanoscale carriers  
10) Developments in polymeric hydrogel technology for advanced oral drug delivery

**Approximate Schedule:**
- Manuscript Submission Deadline: 30/11/2013
- Peer Review Due: 15/02/2014
- Revision Due: Nov. 15/03/2014
- Notification of Acceptance by the Guest Editor: 15/04/2014
- Final Manuscript Due: 30/04/2014