EMERGING MOLECULAR TARGETS FOR THE TREATMENT OF CYSTIC FIBROSIS

Aims & Scope:

Cystic fibrosis (CF) is a deadly autosomal recessive disease characterized by airway obstruction, infection, inflammation, and eventually end-stage lung failure. It is the most common life-shortening genetic disorder in Caucasians, and caused by mutations in the gene that encodes the CF transmembrane conductance regulator (CFTR). This disease affects approximately 70,000 individuals worldwide and can also severely damage the pancreatic exocrine function resulting in serious complications such as diabetes and nutritional deficiencies. However, most current therapies attempt to address only the symptomatic complications of the disease, not the underlying causes. In addition, challenges remain in rational correction of nearly 2000 CF-causing CFTR mutations. Therefore, the aim of this special issue is to gather the latest information on molecular mechanisms of CF pathogenesis and discuss emerging drug targets in the pathways regulating CFTR maturation, trafficking, and channel gating, with the ultimate goal to find a cure for this deadly multisystem genetic disease.

Key words:

Cystic fibrosis; Protein degradation; CFTR biogenesis; SUMOylation; Porosome; Chemokine signaling; Molecular chaperone; Scaffold protein; Nutraceutical

Subtopics:

• SUMOylation modulates CFTR biogenesis: Is the pathway druggable?
• Pharmacological Correction of Cystic Fibrosis: Molecular Mechanisms at the Plasma Membrane to Augment Mutant CFTR Function.
• Involvement of CFTR in Porosome-Mediated Secretion: Porosome Proteome as Possible Drug Targets.
• Targeting Molecular Chaperones for the Treatment of Cystic Fibrosis: Is It a Viable Approach?
• Novel Approaches for Potential Therapy of Cystic Fibrosis.
• Cystic Fibrosis Degradation Pathway: Is This a Drug Targetable Site?
• Dysregulated Chemokine Signaling in Cystic Fibrosis Airway Inflammation: A Potential Therapeutic Target.
• PDZ Structure and Function and its Implication in Selective Drug Design against Cystic Fibrosis.
• Bioactive Food Components as Dietary Intervention for Cystic Fibrosis.
• Current Approaches and Future Strategies for Cystic Fibrosis.
• Personalized Drug Therapy in Cystic Fibrosis: From Fiction to Reality.
• Targeting ENaC and CFTR as Molecular Suspects of Cystic Fibrosis
• CFTR regulation of Aquaporin-Mediated Water Transport: A Role in Male Fertility

Schedule:

Manuscript submission deadline: September 2014
Peer Review Due: October 2014
Revision Due: November 2014
Notification of acceptance by the Guest Editor: December 2014
Final manuscripts due: December 2014