BioMed Research International

Special Issue on

Helicase and Its Interacting Factors: Regulation Mechanism, Characterization, Structure, and Application for Drug Design

Call for Papers

Helicases are motor proteins that separate nucleic acid duplexes and/or displace protein in reactions fueled by the binding and hydrolysis of adenosine triphosphate (ATP). Because of their essential roles in all aspects of nucleic acid metabolism, helicases encoded by bacteria, viruses, and human cells are widely studied targets for new antiviral, antibiotic, and anticancer drugs. Recent evidence indicates that some accessory proteins can regulate their helicase and/or translocase activities. Knowledge of structure-activity relationships has led to the development of successful therapies, new DNA/protein interacting models, novel inhibitors, and bioinformatics characterization to deeply understand the acting mechanism of helicases and/or their interacting factor. We invite investigators to contribute original research articles as well as review articles that will stimulate the continuing efforts and provide strategies to the information and structure-based development of new antiviral, antibiotic, and anticancer drugs for helicase inhibitions. Drug design of targeting any ATPase and DNA binding protein is also welcome. Potential topics include, but are not limited to:

- Recent developments and applications in antiviral, antibiotic, and anticancer drugs targeting helicases and the loading factors
- Anticancer signaling pathway
- Biochemistry of helicase and its accessory protein(s)
- New bioinformatics tools in any aspects for DNA binding proteins and ATPases
- Structure and information-based inhibitor design and screening to helicases and DNA binding proteins
- Latest technologies to monitor action of helicases and DNA binding proteins
- Signaling pathway to regulation of helicase expression and activity
- Potent inhibitor to any ATPase and DNA binding protein

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