



BioMed Research International

Special Issue on
Molecular Mechanism of Muscle Contraction: New Perspectives and Ideas

CALL FOR PAPERS

Movement, contraction, and cell motility are the basic phenomena of life underlying various physiological and pathological processes. Muscles, the specialized structures capable of transforming chemical energy stored in the form of ATP into mechanical work, are instrumental in generating motility and force to support many essential body functions in animals and humans.

Biological motility and its particular case, muscle contraction, are based on the cyclic interactions of the myosin heads with actin filaments and their binding proteins that in concert regulate the organization and properties of the contractile systems. Properties and composition of the contractile proteins vary between systems and this variability determines the structural and functional properties of the systems and how they differ from each other. Therefore, one of the major questions of muscle motility is to be able to understand not only the composition and the properties of contractile proteins but also the physiological and structural features of muscle cells where they are synthesized.

We invite investigators to contribute to the original research articles as well as review articles that will stimulate the continuing efforts to understand the molecular mechanisms underlying muscle contraction in different organisms from molluscs to humans. We are interested in the manuscripts describing new ideas and approaches for studying the regulation of actin and its interaction with myosin in all types of muscle and in particular in those focusing on new insights into the unique phenomena known as latch and catch states in smooth muscles.

Potential topics include, but are not limited to:

- ▶ Recent findings in the field of muscle regulation
- ▶ New insights into mechanisms of latch and catch states
- ▶ Giant proteins in muscle
- ▶ Force sensing mechanisms in muscle
- ▶ Power stroke of muscle contraction
- ▶ Myosin motors in vitro and in cells
- ▶ Molecular machines and how they function inside cells
- ▶ Actin and actin-binding proteins
- ▶ Thin-filament regulatory systems
- ▶ Myosin and the thick filament proteins
- ▶ Structural and functional aspects of myosin phosphorylation
- ▶ Cell mechanics and motility
- ▶ Cytoskeletal protein dynamics

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First Round of Reviews

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