



Actin and Its Associates: Biophysical Aspects in Functional Roles

Guest Editors:

**Prof. Dr. Hans Georg
Mannherz**

Department of Anatomy and
Molecular Embryology, Medical
Faculty, Ruhr-University Bochum,
D-44780 Bochum, Germany

Prof. Dr. Brigitte M. Jockusch

Biosciences, Technical University
of Braunschweig, BRICS, 38092
Braunschweig, Germany

Dr. Beáta Bugyi

Department of Biophysics,
Medical School, University of
Pécs, Szigeti str. 12, H-7624 Pécs,
Hungary

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Message from the Guest Editors

Dear Colleagues,

Actin, is vital to a multitude of cell functions relying on force generation and transduction. Within the cohesive structure of the actin cytoskeleton, helical polymers assembled from actin monomers self-organize into higher-order networks with diverse structural, dynamic, and mechanical properties fine-tuned by an inventory of actin-binding proteins. These distinct assemblies serve specialized roles in cell response and behavior. Significant advances have been made to unravel how the functional polymorphism of the actin cytoskeleton emerges from actin's intrinsic physicochemical features. However, challenges remain in the understanding of the mechanisms coupling the molecular pattern of actin networks with their biomechanical and functional behavior. In this Special Issue, original research publications are invited that cover the recent advances related to the biophysical principles governing the architecture, dynamics, and function of actin polymers and networks. The Special Issue is also for review articles summarizing the existing knowledge on the mechanical aspects and regulation of actin homeostasis in health and disease.





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Editors-in-Chief

Prof. Dr. Peter E. Nielsen

Department of Cellular and
Molecular Medicine, Faculty of
Health and Medical Sciences,
University of Copenhagen,
Blegdamsvej 3C, DK-2200
Copenhagen, Denmark

Prof. Dr. Lukasz Kurgan

Department of Computer
Science, Virginia Commonwealth
University, Richmond, VA 23284,
USA

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Biomolecules Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

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