

Mechanosensitivity in Cells and Tissues 1

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Editors

Mechanosensitive Ion Channels

This book presents the latest findings in mechanosensitive ion channel research compiled by a number of internationally recognized experts in the field of mechanosensitivity, specializing in mechanosensitive or mechanically gated ion channels and the underlying mechanosensitive signaling cascades. "Mechanosensitivity in Cells and Tissues: Mechanosensitive Ion Channels" defines and discusses key problems of cellular mechanobiology, describing the methods for studying mechanosensitive ion channels, the role of lipid bilayer mechanics in mechanosensation, and the molecular organization, physiology and pharmacology of the various ion channels, which react to changes in cellular membrane tension.

The book provides a comprehensive description of mechanotransduction, which is defined as the biochemical response of cells to mechanical stimulation, and provides the reader with the latest vision of signaling cascades. These signaling cascades play an important role in modulation of function of mechanosensitive ion channels, as well as their reaction to changes in activity of mechanosensitive ion channels, located upstream of these cascades. This volume includes chapters describing different ways and effects of mechanical stimulation in various tissues and cells, which will be of particular interest for students and specialists, interested in the field of mechanosensitivity research.

In summary, descriptions of the most widely used experimental models, the methods of choice and references to experimental protocols, the latest experimental findings and current vision, and potential problems in data interpretation, will be of considerable use to all those interested in this field of research.

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