



Transmembrane and Intracellular Translocation of Activator Ca Ions in Cardiac and Smooth Muscle Cells

Guest Editors:

Prof. Dr. Suzanne F. Scarlata

Worcester Polytechnic Institute,
Worcester, MA, USA

Dr. Haruo Sugi

Department of Physiology,
Teikyo University School of
Medicine, Tokyo 173-8605, Japan

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Message from the Guest Editors

It has been well established that muscle contraction results from the elevation of free Ca ion concentration in the interior of muscle cells $[Ca^{2+}]_i$. The Ca^{2+} producing contraction is called the activator Ca ion.

In cardiac muscle cells, it is generally believed that activator Ca comes from the extracellular fluid in the form of an inward Ca current across the surface membrane, and it is regulated by the Na–Ca exchange mechanism. It has been shown, however, that activator Ca also comes from internal Ca accumulation structures, as indicated by so-called Ca-sparks and recorded by Ca-indicators in relaxed cardiac muscle cells.

In various smooth muscle cells, on the other hand, it has been shown microscopically that activator Ca is stored in internal membrane structures.

This Special Issue on “Transmembrane and Intracellular Translocation of Activator Ca Ions in Cardiac and Smooth Muscle Cells” aims to gather papers addressing the abovementioned topics.





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Editor-in-Chief

Prof. Dr. Maurizio Battino

Department of
Odontostomatologic and
Specialized Clinical Sciences,
Sez-Biochimica, Faculty of
Medicine, Università Politecnica
delle Marche, Via Ranieri 65,
60100 Ancona, Italy

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MDPI, Grosspeteranlage 5
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