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Titolo	Calcium Entry Pathways in Non-excitabile Cells // edited by Juan A. Rosado
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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Historical overview of store-operated Ca ²⁺ entry -- The STIM1- Orai interaction -- The TRPCs, Orais and STIMs in ER/PM junctions -- The TRP-Na-Ca ²⁺ exchanger coupling -- Role of TRPC channels in store-operated calcium entry -- Phospholipase A2 as a molecular determinant of store-operated calcium entry -- Extracellular calcium has multiple targets to control cell proliferation -- Regulation of platelet function by Orai, STIM and TRP -- On the roles of the Transient Receptor Potential Canonical 3 (TRPC3) channel in endothelium and macrophages: implications in atherosclerosis -- Second messenger-operated calcium entry through TRPC6 -- Transient Receptor Potential Canonical 7 (TRPC7), a Calcium (Ca ²⁺) Permeable Nonselective Cation Channel -- Calcium entry through thermosensory channels -- Calcium signalling through ligand-gated ion channels such as P2X1 receptors in the platelet and other non-excitabile cells -- The calcium entry-calcium refilling coupling -- Microdomains associated to lipid rafts -- Role of scaffolding proteins in the regulation of TRPC-dependent calcium entry -- Modulation of calcium entry by mitochondria -- Modulation of calcium entry by the endo-lysosomal system -- Remodeling of calcium entry pathways in cancer.

Calcium entry pathways in non-excitabile cells presents a concise synthesis of thoughtfully selected topics covering from the different calcium entry mechanisms in non-excitabile cells to the cellular microdomains and organelles regulating the calcium entry process. Particular attention is given to the fascinating group of ion channels involved in different calcium entry pathways as well as the emerging role of these channels in human disease. Calcium entry is an essential mechanism for cellular function in non-excitabile cells. In general, two main calcium entry pathways exist in non-excitabile cells: one pathway, named store-operated calcium entry (SOCE) requires store depletion and the second pathway is regulated by receptor occupation, but independently on calcium store depletion. The search for the molecular components of calcium entry has identified the stromal interaction molecule 1 (STIM1), as the calcium sensor of the intracellular calcium stores, and Orai as well as TRP channels as the calcium-permeable channels located in the plasma membrane. The location, interactions and function of these channels are finely regulated by a number of scaffolding proteins, membrane microdomains and cellular organelles that fine tune the amount of calcium entering the cell. Cutting-edge and user-friendly, this volume presents relevant background information, critical analysis of the current observations and directions for future research. The book is intended for basic scientists specializing in cellular biology or ion transport, as well as for biomedical researchers.
