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Titolo	Molecular Basis for Mitochondrial Signaling [[electronic resource] /] / edited by Tatiana K. Rostovtseva
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Descrizione fisica	1 online resource (XIV, 386 p. 61 illus., 54 illus. in color.)
Collana	Biological and Medical Physics, Biomedical Engineering, , 1618-7210
Disciplina	571.657
Soggetti	Biophysics Biological physics Cell cycle Apoptosis Biological and Medical Physics, Biophysics Cell Cycle Analysis
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	From the Contents: Mitochondrial Calcium Signaling -- Systems approaches to mitochondrial calcium signaling -- The mitochondrial Calcium Uniporter: Molecular Composition And Physiological Role -- Molecular Mechanisms of Mitochondrial Ca <sup>2+</sup> Uptake -- Ca <sup>2+</sup> uniporter and male fertility.
Sommario/riassunto	This book covers recent advances in the study of structure, function, and regulation of metabolite, protein and ion translocating channels, and transporters in mitochondria. A wide array of cutting-edge methods are covered, ranging from electrophysiology and cell biology to bioinformatics, as well as structural, systems, and computational biology. At last, the molecular identity of two important channels in the mitochondrial inner membrane, the mitochondrial calcium uniporter and the mitochondrial permeability transition pore have been established. After years of work on the physiology and structure of VDAC channels in the mitochondrial outer membrane, there have been multiple discoveries on VDAC permeation and regulation by cytosolic

proteins. Recent breakthroughs in structural studies of the mitochondrial cholesterol translocator reveal a set of novel unexpected features and provide essential clues for defining therapeutic strategies. **Molecular Basis for Mitochondrial Signaling** covers these and many more recent studies of mitochondria function, their communication with other organelles, and their critical roles in development, aging, and in a plethora of stressful or degenerative events. Authored by leading researchers in the field, this volume will be an indispensable reference resource for graduate students and academics working in related areas of biophysics and cell biology as well as for professionals within industry.

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