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Titolo	Mitochondria and their role in cardiovascular disease // by Jose Marin-Garcia ; with contributions by Alexander Akhmedov and Vitalyi Rybin, Gordon W. Moe
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Altri autori (Persone)	AkhmedovAlexander RybinVitalyi MoeGordon W
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction to mitochondria in the heart -- Methods to study mitochondrial structure and function- Mitochondrial structure, composition and dynamics -- Mitochondrial biogenesis -- Mechanisms of bioenergy production in mitochondria -- Bioenergetics interplay between cardiac mitochondria and other subcellular compartments -- Endothelial mitochondria: Contribution to cardiovascular function and disease -- Heart mitochondria: Receivers and transmitters of signals -- Stem cells and mitochondria -- Cell death pathways and mitochondria -- Mitochondria in pediatric cardiovascular diseases -- Mitochondrial in the aging heart -- The role of mitochondria in atherosclerosis -- The role of mitochondria in hypertension -- Role of mitochondria in ischemia and cardioprotection -- Mitochondrial dynamics in health and disease -- Mitochondria play an essential role in heart failure -- Mitochondria and cardiac dysrhythmias -- Diabetes and cardiac mitochondria -- The role of mitochondria in metabolic syndrome and insulin resistance.-Thyroid hormone and myocardial mitochondria -- Targeting the mitochondria in cardiovascular diseases -- Current

progress and future perspectives: Towards mitochondrial medicine.

Sommario/riassunto

Over the past two decades, due to dramatic advances in molecular and cell biology, biochemistry, and genetics, our view on mitochondria as a relatively static cellular powerhouse has changed radically. We now know that these organelles play a critical role in the normal and in the damaged heart. Written by Dr. José Marín-García, Director of the Molecular Cardiology and Neuromuscular Institute, *Mitochondria and Their Role in Cardiovascular Disease* brings readers up-to-date on the many significant advances in the field of mitochondrial cardiovascular medicine. The book begins with a general introduction to mitochondria, followed by laboratory methods to study the structure and function of the organelle, regulation of replication and biogenesis, and the mechanisms and functional consequences of mitophagia and mitochondrial dynamics. Subsequent chapters deal with mitochondrial oxidative stress and the role that the organelle plays in cell signaling and cell death. Discussions will be undertaken on the biochemistry of mitochondrial cell signaling, including the nature of the proteins engaged in these processes, many of them only recently discovered. Later chapters examine the role of mitochondria and mitochondrial abnormalities in cardiovascular diseases, including their diagnosis, therapeutic options currently available, animal models of mitochondrial disease, and new frontiers in mitochondrial cardiovascular medicine, including areas of research that are relatively new or developing, such as proteomics, next generation sequencing, and systems biology.
