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Titolo	Evolution of Bioenergetics from Elements to Life : Emergence of High Energy Mitochondria / / by David F. Stowe
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Descrizione fisica	1 online resource (350 pages)
Disciplina	572
Soggetti	Biochemistry Evolution (Biology) Cardiovascular system Physiology Evolutionary developmental biology Developmental biology Blood-vessels - Growth Evolutionary Biology Cardiovascular Physiology Evolutionary Developmental Biology Developmental Biology and Stem Cells Angiogenesis
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Chapter 1 Elements of the cosmos as precursors for lifeforms -- Chapter 2 Light metal ions and oxyanions as current carriers for early lifeforms -- Chapter 3 Origin of complex biomolecules on the dawn of lifeforms -- Chapter 4 Genesis of mitochondria to power complex lifeforms -- Chapter 5 Mitochondrial function and bioenergetics -- Chapter 6 Process of oxidative phosphorylation and free radical generation -- Chapter 7 Ionic and molecular regulation of mitochondrial bioenergetics -- Chapter 8 Regulation of bioenergetics in cardiac myocytes -- Chapter 9 Physiology and evolution of the heart.
Sommario/riassunto	This book begins with the creation of the elements used in life and how

these elements, as atoms, bound together into organic compounds and polymerized into lipids, peptides, and nucleotides. The text stresses the role and importance of the elements C, H, O, N, P, S, the univalent and multivalent ions, and the requirement of liquid water to foster prebiotic life. Expert author Dr. David Stowe explains the role of early molecular interactions in developing the first living prokaryote bacteria and their eventual engulfment as organelles to make eukaryotes that allowed their sophistication into specialized cells and large multicellular organisms. The book uniquely traces the genesis of bioenergetics and uses cardiac cell mitochondria as an evolutionary example for modern bioenergetic function. This book is geared toward graduate students, post-doctoral fellows, and other academics interested in evolutionary biochemistry with an emphasis on the early development of bioenergetics leading to modern, high energy mitochondria.
