

1. Record Nr.	UNINA9910467065003321
Titolo	Iron-Sulfur Clusters in Chemistry and Biology. . Volume 2, Biochemistry, Biosynthesis and Human Diseases // Tracey Rouault
Pubbl/distr/stampa	Berlin ; ; Boston : , : De Gruyter, , [2017] ©2017
ISBN	3-11-047952-4 3-11-047985-0
Edizione	[2. Aufl.]
Descrizione fisica	1 online resource (492 pages) : illustrations
Collana	Iron-Sulfur Clusters in Chemistry and Biology ; ; Volume 2
Altri autori (Persone)	AdamsMichael W.W BoydEric S BroderickJoan B DancisAndy DeanDennis Dos SantosPatricia GariKerstin KileyPatricia LeimkühlerSilke LillRoland MaioNunziata MettertErin L OuttenCaryn OuttenWayne PetersJohn ShepardEric M TongWing Hang WohlschlegelJames YeHong
Disciplina	574.19245
Soggetti	Iron-sulfur proteins Electronic books.
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

Frontmatter -- Preface -- Tracey A. Rouault biography -- Contents -- List of contributing authors -- 1 A retrospective on the discovery of [Fe-S] cluster biosynthetic machineries in *Azotobacter vinelandii* / Dos Santos, Patricia C. / Dean, Dennis R. -- 2 The ISC system and the different facets of Fe-S biology in bacteria / Aussel, Laurent / Chareyre, Sylvia / Duverger, Yohann / Ezraty, Benjamin / Huguenot, Allison / Mandin, Pierre / Py, Béatrice / Zamarreno, Jordi / Barras, Frédéric -- 3 A stress-responsive Fe-S cluster biogenesis system in bacteria - the suf operon of Gammaproteobacteria / Outten, F. Wayne -- 4 Sensing the cellular Fe-S cluster demand: a structural, functional, and phylogenetic overview of *Escherichia coli* IscR / Mettert, Erin L. / Perna, Nicole T. / Kiley, Patricia J. -- 5 Fe-S assembly in Gram-positive bacteria / Dos Santos, Patricia C. -- 6 Fe-S cluster assembly and regulation in yeast / Pain, Debkumar / Dancis, Andrew -- 7 The role of Fe-S clusters in regulation of yeast iron homeostasis / Outten, Caryn E. -- 8 Biogenesis of Fe-S proteins in mammals / Rouault, Tracey -- 9 Delivery of iron-sulfur clusters to recipient proteins: the role of chaperone and cochaperone proteins / Maio, Nunziata / Rouault, Tracey A. -- 10 Iron-sulfur proteins and human diseases / Tong, Wing Hang -- 11 Friedreich ataxia / Knight, Simon A. B. / Wilson, Robert B. -- 12 Connecting the biosynthesis of the molybdenum cofactor, Fe-S clusters, and tRNA thiolation in humans / Leimkühler, Silke -- 13 Iron-sulphur proteins and genome stability / Gari, Kerstin -- 14 Eukaryotic iron-sulfur protein biogenesis and its role in maintaining genomic integrity / Lill, Roland / Uzarska, Marta A. / Wohlschlegel, James -- 15 DNA signaling by iron-sulfur cluster proteins / Bartels, Phillip L. / O'Brien, Elizabeth / Barton, Jacqueline K. -- 16 Iron-sulfur cluster assembly in plants / Ye, Hong -- 17 Origin and evolution of Fe-S proteins and enzymes / Boyd, Eric S. / Schut, Gerrit J. / Shepard, Eric M. / Broderick, Joan B. / Adams, Michael W. W. / Peters, John W. -- Index

---

Sommario/riassunto

This volume on iron-sulfur proteins includes chapters that discuss how microbes, plants, and animals synthesize these complex prosthetic groups, and why it is important to understand the chemistry and biogenesis of iron sulfur proteins. In addition to their vital importance in mitochondrial respiration, numerous iron sulfur proteins are important in maintenance of DNA integrity. Multiple rare human diseases with different clinical presentations are caused by mutations of genes in the iron sulfur cluster biogenesis pathway. Understanding iron sulfur proteins is important for understanding a rapidly expanding group of metabolic pathways important in all kingdoms of life, and for understanding processes ranging from nitrogen fixation to human disease.

---