

1. Record Nr.	UNINA9910807801503321
Titolo	Handbook of flavoproteins : oxidases, dehydrogenases and related systems. Volume 1 // edited by Russ Hille, Susan M. Miller, Bruce Palfey
Pubbl/distr/stampa	Berlin, : De Gruyter, 2013
ISBN	3-11-026891-4
Edizione	[1st ed.]
Descrizione fisica	1 online resource (372 p.)
Collana	Handbook of Flavoproteins ; ; Volume 1
Classificazione	WD 5050
Altri autori (Persone)	HilleRuss MillerSusan M PalfeyBruce
Disciplina	572/.791
Soggetti	Flavoproteins
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Frontmatter -- Preface -- Contributing authors -- Table of contents -- 1 Berberine bridge enzyme and the family of bicovalent flavoenzymes / Wallner, Silvia / Dully, Corinna / Daniel, Bastian / Macheroux, Peter -- 2 PutA and proline metabolism / Tanner , John J. / Becker, Donald F. -- 3 Flavoenzymes involved in non-redox reactions / Hemmi, Hisashi -- 4 Enzymes of FMN and FAD Metabolism / Medina, Milagros -- 5 Mechanisms of bacterial luciferase and related flavoenzymes / Tu, Shiao-Chun -- 6 Amine and amino acid oxidases and dehydrogenases / Fitzpatrick, Paul F. -- 7 Monoamine oxidases A and B: membrane-bound flavoenzymes of medical importance / Edmondson, Dale E. / Binda , Claudia / Mattevi, Andrea -- 8 Choline oxidase and related systems / Gadda, Giovanni -- 9 Pyranose oxidases / Wongnate , Thanyaporn / Chaiyen, Pimchai -- 10 Toward understanding the mechanism of oxygen activation by flavoprotein oxidases / Schuman Jorns, Marilyn -- 11 The acyl CoA dehydrogenases / Kim, Jung-Ja P. / Gregersen, Niels / Jentoft Olsen, Rikke Katrine / Ghisla, Sandro -- 12 Flavoproteins in oxidative protein folding / Thorpe, Colin -- 13 Glutamate synthase / Vanoni, Maria Antonietta -- 14 The dihydroorotate dehydrogenases / Nonato , Maria Cristina / Costa-Filho, Antonio José -- 15 Ferredoxin-NADP+ reductases / Catalano-Dupuy, Daniela L. / Rial, Daniela V. / Ceccarelli, Eduardo A. -- 16 Flavoprotein

Sommario/riassunto

The dynamic field of flavin and flavoprotein biochemistry has seen rapid advancement in recent years. This comprehensive two volume set provides an overview of all aspects of contemporary research in this important class of enzymes. Topics treated include flavoproteins involved in energy generation, signal transduction and electron transfer (including respiration); oxygen activation by flavoproteins; the biology and biochemistry of complex flavoproteins; flavin and flavoprotein photochemistry/photophysics as well as biotechnological applications of flavoproteins. Recent developments in this field include new structures (including those of large membrane-integral electron transfer complexes containing FMN or FAD), elucidation of the role of flavoproteins in cell signalling pathways (including both phototaxis and the circadian cycle) and important new insights into the reaction mechanisms of flavin-containing enzymes. This volume focussing on oxidases, dehydrogenases and related systems is an essential reference for all researchers in biochemistry, chemistry, photochemistry and photophysics working on flavoenzymes.

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