

Volume 2

IRON continued	683
Non-Heme Proteins: Dinuclear Iron Proteins	685
Hemerythrin	687
<i>Ronald E Stenkamp</i>	
Ribonucleotide reductase	699
<i>Hans Eklund</i>	
Methane monooxygenase hydroxylase	712
<i>Douglas A Whittington and Stephen J Lippard</i>	
Δ^9 Stearoyl-acyl carrier protein desaturase	725
<i>Ylva Lindqvist</i>	
Iron-only hydrogenases	738
<i>Brian J Lemon and John W Peters</i>	
Purple acid phosphatase	752
<i>Andreas Vogel, Friedrich Spener and Bernt Krebs</i>	
Non-Heme Proteins: Iron Storage	769
Ferritin	771
<i>Elizabeth C Theil</i>	

Contents

Cytochrome b_1 – bacterioferritin	782
<i>Felix Frolow and Aaron Joseph Kalb (Gilboa)</i>	
Non-Heme Proteins: Iron Transport	791
Transferrins	793
<i>Peter F Lindley</i>	
Lactoferrin	812
<i>Clyde A Smith</i>	
The ferric hydroxamate uptake receptor FhuA and related TonB-dependent transporters in the outer membrane of gram-negative bacteria	834
<i>Andrew D Ferguson, James W Coulton, Kay Diederichs and Wolfram Welte</i>	
Iron-dependent regulators	850
<i>Michael D Feese, Ehmke Pohl, Randall K Holmes and Wim GJ Hol</i>	
NICKEL	865
Urease	867
<i>Robert P Hausinger and P Andrew Karplus</i>	
Nickel–iron hydrogenases	880
<i>Michel Frey, Juan C Fontecilla-Camps and Anne Volbeda</i>	
Methyl-coenzyme M reductase	897
<i>Wolfgang Grabarse, Seigo Shima, Felix Mahlert, Evert C Duin, Rudolf K Thauer and Ulrich Ermler</i>	
Peptide deformylase	915
<i>Andreas Becker and Wolfgang Kabsch</i>	
Diphtheria toxin repressor: metal ion mediated control of transcription.	929
<i>Dagmar Ringe, Andre White, Shuyan Chen and John R Murphy</i>	
MANGANESE	939
Manganese superoxide dismutase	941
<i>M Elizabeth Stroupe, Michael DiDonato and John A Tainer</i>	
Arginase	952
<i>Maria C Bewley and John M Flanagan</i>	
Concanavalin A	963
<i>A Joseph Kalb (Gilboa) and John R Helliwell</i>	
Aminopeptidase P	973
<i>J Mitchell Guss, and Hans C Freeman</i>	
COBALT	981
Glutamate mutase	983
<i>Christoph Kratky and Karl Gruber</i>	
Methylmalonyl CoA mutase	995
<i>Karl Gruber and Christoph Kratky</i>	
Cobalamin-dependent methionine synthase	1010
<i>Karl Gruber and Christoph Kratky</i>	

MOLYBDENUM/TUNGSTEN	1023
Nitrogenase	1025
<i>Benedikt Schmid, Hsiu-Ju Chiu, Vijay Ramakrishnan, James B Howard and Douglas C Rees</i>	
Aldehyde oxidoreductase (MOP)	1037
<i>Maria João Romão and José JG Moura</i>	
Dimethylsulfoxide reductase	1048
<i>Hung-Kei Li and Hermann Schindelin</i>	
Trimethylamine N-oxide reductase	1063
<i>Chantal Iobbi-Nivol, Richard Haser, Vincent Méjean and Mirjam Czjzek</i>	
Dissimilatory nitrate reductase	1075
<i>Maria João Romão, João Miguel Dias and Isabel Moura</i>	
Formaldehyde ferredoxin oxidoreductase	1086
<i>Roopali Roy, Ish K Dhawan, Michael K Johnson, Douglas C Rees and Michael WW Adams</i>	
Aldehyde ferredoxin oxidoreductase	1097
<i>Roopali Roy, Ish K Dhawan, Michael K Johnson, Douglas C Rees and Michael WW Adams</i>	
Formate dehydrogenase H	1109
<i>Peter D Sun, Jeffrey C Boyington and Thressa C Stadtman</i>	
Sulfite oxidase	1121
<i>Caroline Kisker</i>	
CO dehydrogenase	1136
<i>Holger Dobbek, Lothar Gremer, Ortwin Meyer and Robert Huber</i>	
COPPER	1149
Cupredoxins (Type-1 Copper Proteins)	1151
Plastocyanin	1153
<i>Hans C Freeman and J Mitchell Guss</i>	
Azurin and azurin mutants	1170
<i>U. Kolczak, C. Dennison, A. Messerschmidt and G.W. Canters</i>	
Pseudoazurin	1195
<i>Elinor T Adman</i>	
Amicyanin and complexes of amicyanin with methylamine dehydrogenase and cytochrome <i>c</i> _{551i}	1203
<i>F Scott Mathews</i>	
Cucumber basic protein	1215
<i>J Mitchell Guss and Hans C Freeman</i>	
Stellacyanin, a member of the phytocyanin family of plant proteins	1219
<i>Aram Migran Nersissian, Peter John Hart and Joan Selverstone Valentine</i>	
Rusticyanin	1235
<i>Menachem Shoham</i>	
Type-2 Copper Enzymes	1243
Prokaryotic copper amine oxidases	1245
<i>Michael J McPherson, Mark R Parsons and Carrie M Wilmot</i>	
Eukaryotic copper amine oxidases	1258
<i>Diana L Wertz and Judith P Klinman</i>	
Galactose oxidase	1272
<i>Michael J McPherson, Mark R Parsons, R Kate Spooner and Carrie M Wilmot</i>	

Contents

Copper-zinc superoxide dismutase in prokaryotes and eukaryotes	1284
<i>Domenico Bordo, Alessandra Pesce, Martino Bolognesi, Maria Elena Stroppolo, Mattia Falconi and Alessandro Desideri</i>	
Binuclear Copper: Type-3 Copper Enzymes	1301
Hemocyanins from arthropods and molluscs	1303
<i>Karen A Magnus</i>	
Catechol oxidase	1319
<i>Christoph Eicken, Carsten Gerdemann and Bernt Krebs</i>	
Binuclear Copper: CuA Copper	1331
Binuclear copper A.	1333
<i>Peter MH Kroneck</i>	
Multicopper Enzymes	1343
Ascorbate oxidase	1345
<i>Albrecht Messerschmidt</i>	
Laccase	1359
<i>Gideon J Davies and Valérie Ducros</i>	
Ceruloplasmin	1369
<i>Peter F. Lindley</i>	
Copper nitrite reductase	1381
<i>Elinor T Adman and Michael EP Murphy</i>	
Copper Storage and Transport	1391
Structure of the fourth metal-binding domain from the Menkes copper-transporting ATPase	1393
<i>Wayne J Fairbrother</i>	
Yeast copper metallothionein	1405
<i>Cynthia W Peterson</i>	
VANADIUM	1415
Vanadium haloperoxidases	1417
<i>Ron Wever and Wieger Hemrika</i>	
List of Contributors	1429
PDB code list	1437
Index	1449