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Precursor Protein and Its Fragments; 4 Concluding Remarks; Acknowledgments; Abbreviations; References; 4 Metallic Prions: Mining the Core of Transmissible Spongiform Encephalopathies; 1 Introduction 2 Historical Connections Between Copper and Transmissible Spongiform Encephalopathies 3 Copper Binding to Prion Protein; 4 Copper Coordination by Prion Protein; 5 Copper Uptake and Prion Protein Internalization; 6 Prion Protein as an Antioxidant; 7 Manganese Binding; 8 Transmissible Spongiform Encephalopathies and Metals; 9 Conclusions; Abbreviations; References; 5 The Role of Metal Ions in the Amyloid Precursor Protein and in Alzheimer's Disease; 1 Introduction; 2 Amyloid Precursor Protein and Brain Copper Homeostasis; 3 Amyloid Precursor Protein and Cu,Zn-Superoxide Dismutase-1 4 General Conclusions Abbreviations; References; 6 The Role of Iron in the Pathogenesis of Parkinson's Disease; 1 Introduction; 2 Iron in the Etiology of Parkinson's Disease; 3 Sources of Increased Iron in Parkinson's Disease; 4 Consequences of Iron Overload in Parkinson's Disease; 5 General Conclusions; Acknowledgments; Abbreviations and Definitions; References; 7 In Vivo Assessment of Iron in Huntington's Disease and Other Age-Related Neurodegenerative Brain Diseases; 1 Introduction. Puzzling Changes in Cell Numbers in Huntington's Disease Brain 2 Human Brain Development and Disease Phenotypes 3 Oligodendrocytes and Iron in Brain Development and Degeneration; 4 Transition Metal Metabolism and Proteinopathies; 5 In Vivo Measurement of Brain Iron; 6 Novel Treatment Considerations; 7 Conclusions; Acknowledgments; Abbreviations; References; 8 Copper-Zinc Superoxide Dismutase and Familial Amyotrophic Lateral Sclerosis; 1 Introduction; 2 Molecular Mechanisms of fALS SOD1 Pathogenesis; 3 Structural Features of Human SOD1; 4 'Wild-Type-like' fALS Mutants; 5 'Metal Binding Region' fALS Mutants; 6 Monomeric SOD1 and Pathogenesis; 7 Conclusions Acknowledgments

Sommario/riassunto

About the Series... Metal Ions in Life Sciences links coordination chemistry and biochemistry in their widest sense and thus increases our understanding of the relationship between the chemistry of metals and life processes. The series reflects the interdisciplinary nature of Biological Inorganic Chemistry and coordinates the efforts of scientists in fields like biochemistry, inorganic chemistry, coordination chemistry, molecular and structural biology, enzymology, environmental chemistry, physiology, toxicology, biophysics, pharmacy, and medicine. Consequently, t
