

1. Record Nr.	UNINA9910451313403321
Titolo	Matrix metalloproteinases in the central nervous system [[electronic resource] /] / editors, Katherine Conant, Paul E. Gottschall
Pubbl/distr/stampa	London, : Imperial College Press Hackensack, NJ, : Distributed by World Scientific, c2005
ISBN	1-281-86697-0 9786611866976 1-86094-717-4
Descrizione fisica	1 online resource (346 p.)
Altri autori (Persone)	ConantKatherine GottschallPaul E
Disciplina	612.8
Soggetti	Metalloproteinases Central nervous system Extracellular matrix proteins Electronic books.
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	CONTENTS; Foreword; I. A Brief Overview; Chapter 1. The Matrix Metalloproteinases and Their Inhibitors Madeleine M. Handsley, Janet Cross, Jelena Gavrilovic, and Dylan R. Edwards; 1. Introduction; 2. The MMP Family; 3. Regulation of MMP Activity; 4. Endogenous Inhibitors of Metalloproteinases; 5. Novel Roles for MMPs; 6. ECM Targets in the CNS; 7. Generation of Matricryptic Sites in ECM Components; 8. Growth Factor Liberation from ECM "Stores"; 9. Chemokine Gradient Generation; 10. Blood-Brain Barrier Substrates for MMPs; 11. Conclusion; References; II. Regulation of MMP Expression Chapter 2. Genetic Regulation of the Matrix Metalloproteinases and Related Proteins Tammie Roy and Elizabeth A. Milward1. Introduction; 2. Stimuli Triggering Alterations in MMP Gene Expression; 3. Alterations in Other MMPs; 4. Neurotransmitters; 5. Cell-Cell and Cell-Matrix Interactions; 6. Physical and Biochemical Stress; 7. Suppressive Factors; 8. Feedback Control; 9. Signalling Cascades Involved in Regulating MMP Gene Expression; 9.1. The MAPK pathway; 9.2. The NF-B pathway; 9.3.

The 'JAK/STAT' pathway; 9.4. The PI3K/Akt system; 9.5. The Smad pathway

9.6. Cross-talk and competition between pathways 9.7. Pathways operating in the nervous system; 10. Genetic Elements Regulating MMP Gene Expression; 10.1. Constitutive and inducible transcription factors; 10.2. Orchestrating multigene responses; 10.3. AP-1 binding sites and related elements; 10.4. Other promoter elements; 10.5. Chromatin remodelling; 11. Regulation of the MMP-2, MMP-11 and MMP-14 (MT1-MMP) Genes; 11.1. The MMP-2 gene; 11.2. The MMP-11 gene; 11.3. The MMP-14 gene; 12. Regulation of ADAMs Family Gene Expression; 13. Regulation of TIMP Gene Expression
14. Inverse Regulation of MMPs and TIMPs 15. Regulation of TIMPs Independent of MMP Inhibitory Functions; 16. Post-Transcriptional Regulation of MMP Expression; 17. Regulation of MMP Gene Expression in the Healthy Nervous System; 18. Neuronal Expression; 19. Astrocyte Expression; 20. Microglial Expression; 21. Endothelial and Other Cells; 22. Oligodendrocyte and Schwann Cell Expression; 23. Expression of TIMPs in the Nervous System; 24. Expression in Nervous System Development and Plasticity; 25. MMP Gene Regulation in Nervous System Injury and Disease
26. Regulation in Nervous System Malignancies 27. Regulation in Nervous System Injury; 28. Genetic Polymorphisms and MMP Expression; 29. Conclusion; References; Chapter 3. Post-Translational Modification Zezong Gu, Marcus Kaul, and Stuart A. Lipton; 1. Introduction; 2. Cysteine Switch Mechanism; 3. Modification of MMPs by S-Nitrosylation; 4. S-Nitrosylation Leads to MMP-9 Activation In Vitro; 5. NO-Induced Subsequent Oxidation; 6. Peptide Mass Fingerprinting Analysis of Cysteine Residue Post-Translational Modifications; 7. Structural Model of S-Nitrosylation of MMPs
8. MMPs in Neurological Diseases

Sommario/riassunto

This book presents the reader with an understanding of the role played by matrix metalloproteinases (MMPs) in the normal and diseased central nervous system (CNS). These enzymes may be important to brain development, and may also contribute to tissue destruction, which is observed with inflammatory and degenerative conditions of the brain. The book provides a background on the biology of MMPs, and on the stimuli and conditions that are linked to an increase in their production and activity. It describes the targets of MMPs, which include matrix proteins such as collagen, soluble cytokines and
