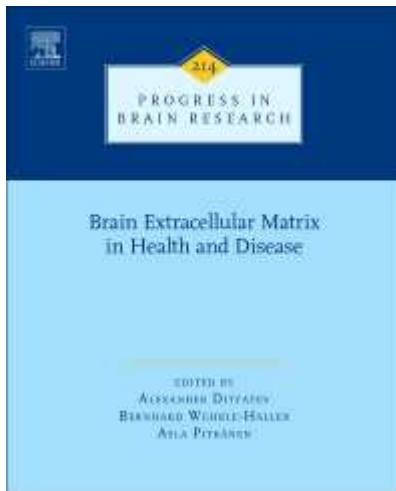




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## Table of Contents

- Preface
  - Functions of Neural ECM
  - Neural ECM in Brain Diseases
  - Neural ECM-Targeting Tools and Therapeutics
  - Neural ECM Scaffolds
- Brain extracellular matrix meets COST—Matrix for European research networks

- Chapter 1: Regulation of the neural stem cell compartment by extracellular matrix constituents

- Abstract
- 1 Neurogenesis Unfolds in Distinct Steps and Involves Neural Stem Cells
- 2 Molecular Determinants of Asymmetrical Division
- 3 Environmental Asymmetry and the Stem Cell Niche
- 4 The Stem Cell Niches of the Adult CNS
- 5 Tenascin Proteins in the NSC Niche
- 6 Expression of Tenascin Genes in Radial Glia and Astrocyte Progenitors
- 7 Expression of Tenascin Genes in Oligodendrocyte Progenitors
- 8 Regulation of Tenascin Genes in NSCs
- 9 Laminin Proteins in the Adult Stem Cell Niche
- 10 Chondroitin sulfate Proteoglycans in the NSC Compartment
- 11 Membrane-Based Part-Time CSPGs
- 12 HSPGs in the NSC Compartment
- 13 ECM Receptors in NSCs and Glial Progenitors
- 14 Conclusions
- Acknowledgments

- Chapter 2: Neural ECM and synaptogenesis

- Abstract
- 1 Introduction
- 2 Proteoglycans
- 3 Collagens and Synaptogenesis
- 4 C1qDC Family Proteins
- 5 Conclusion
- Acknowledgments

- Chapter 3: Neural ECM molecules in synaptic plasticity, learning, and memory

- Abstract
- 1 Introduction
- 2 Chondroitin Sulfate Proteoglycans



3 Hyaluronic Acid

4 Link Proteins (<https://www.elsevier.com>)

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- 
- 5 Tenascins
  - 6 Heparan Sulfates Proteoglycans
  - 7 Reelin
  - 8 Conclusions and Perspectives
  - Acknowledgments
  - Chapter 4: Neural ECM molecules in axonal and synaptic homeostatic plasticity
    - Abstract
    - 1 Homeostatic Forms of Plasticity in the Nervous System
    - 2 The ECM of the Brain
    - 3 ECM Molecules Surrounding Synapses in the CNS
    - 4 Axon Initial Segment-specific ECM in Development and Plasticity
    - 5 ECM Proteins in the Organization of Nodes of Ranvier
    - 6 Questions and Directions of Future Research
    - Acknowledgments
  - Chapter 5: ECM receptors in neuronal structure, synaptic plasticity, and behavior
    - Abstract
    - 1 Introduction
    - 2 Integrins
    - 3 Additional ECM Receptors
    - 4 Link to Human Brain Disease
    - 5 Questions and Directions for Future Research
    - Acknowledgments
  - PART 2: NEURAL ECM IN BRAIN DISEASES
    - Chapter 6: Neural ECM proteases in learning and synaptic plasticity
      - Abstract
      - 1 Expression and Activation of the ECM Proteases in Neurons
      - 2 ECM-Degrading Enzymes in the Modulation of PNNS and Synaptic Remodeling During Plasticity, with Emphasis on the Enriched Environment Rearing
      - 3 MMP-9 in Long-term Potentiation and Learning
      - 4 The Tissue plasminogen Activator/plasmin System



5 Neurotysin in Synaptic Plasticity and Behavior

6 Neurotysin in Synaptic Plasticity, Learning, and Memory

7 Clinical Relevance of Extracellular Proteolysis in Psychiatric Conditions

- Acknowledgments
- Chapter 7: Neural ECM in laminar organization and connectivity development in healthy and diseased human brain
  - Abstract
  - 1 Introduction
  - 2 The ECM of the Early Human Fetal Telencephalon
  - 3 Neural ECM in Laminar Organization and Connectivity Development of the Human Telencephalon During the Midfetal Period
  - 4 Neuronal ECM in Laminar Organization and Connectivity Development in the Third Gestational Trimester and Early Postnatal Period
  - 5 Neural ECM in Diseased Developing Human Brain
  - 6 Relevance of Vulnerability, Plasticity, and Diagnostics and Perspective for Therapeutic Approaches in Developmental Brain Disorders
  - Acknowledgments
- Chapter 8: Neural ECM in regeneration and rehabilitation
  - Abstract
  - 1 Introduction
  - 2 The Compositions of ECM in the CNS
  - 3 Pathophysiology of ECM in CNS Disorders
  - 4 ECM in Plasticity and Rehabilitation
  - 5 Conclusion
  - Acknowledgments
- Chapter 9: On the Structure and functions of gelatinase B/Matrix metalloproteinase-9 in neuroinflammation
  - Abstract
  - 1 Introduction
  - 2 MMP-9 Is an Inflammatory Proteinase
  - 3 The REGA Model of Autoimmunity in MS
  - 4 Evidences for Different MMP-9 Forms in Neuroinflammation
  - 5 Technological Aspects of MMP-9 Tests



- Acknowledgments

---

- Chapter 10: ECM in brain aging and dementia
  - Abstract
  - 1 Introduction
  - 2 Role of Heparan Sulfate Proteoglycans in Dementia
  - 3 The Role of the ECM in Age-Related Neurodegeneration and Extracellular Space Diffusivity
  - 4 CSPG-based Perineuronal Nets and Axonal Coats as a Specialized Form of the ECM
  - 5 MMPs in Brain Aging and Dementia
  - 6 Conclusions
  - Acknowledgments
- Chapter 11: Neural ECM and epilepsy
  - Abstract
  - 1 Introduction
  - 2 Urokinase-Type Plasminogen Activator Receptor Interactome in Epileptogenesis and Epilepsy
  - 3 Matrix Metalloproteinases in Epileptogenesis and Epilepsy
  - 4 ECM Components of Perineuronal Nets and Epileptogenesis
  - 5 LGI1 and Epilepsy
  - 6 Imaging ECM During Epileptogenesis and Epilepsy
  - 7 ECM and Neuropsychiatric Comorbidities: Links to Autism and Schizophrenia
  - 8 Conclusions
  - Acknowledgments
- Chapter 12: Neural ECM in addiction, schizophrenia, and mood disorder
  - Abstract
  - 1 Introduction
  - 2 Drug Addiction
  - 3 Schizophrenia
  - 4 Mood Disorders
  - 5 Conclusions and Future Directions
  - Acknowledgements

- PART 3: NEURAL ECM-TARGETING TOOLS AND THERAPEUTICS



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Chapter 13: Current microscopic methods for the neural ECM analysis

- 
- Abstract
  - 1 Introduction
  - 2 Microscopic Methods
  - 3 Labeling Strategies to Analyze Structure and Proteolytic Remodeling of ECM
  - 4 FRET-based Methods for the Investigation of ECM
  - 5 Conclusion
  - Acknowledgments
  - Chapter 14: Endogenous and synthetic MMP inhibitors in CNS physiopathology
    - Abstract
    - 1 A Brief History of the MMP/TIMP System, from the Nonspecific Degradation of ECM Proteins to Involvement in Animal Behavior and CNS Diseases
    - 2 TIMPs and Other Endogenous MMP Inhibitors
    - 3 Regulation of MMPs and TIMPs in CNS Diseases
    - 4 Chemistry-based MMP Inhibitors, Perspectives for Their Use in the Treatment of CNS Diseases
    - Acknowledgments
  - Chapter 15: Targeting of ECM molecules and their metabolizing enzymes and receptors for the treatment of CNS diseases
    - Abstract
    - 1 Introduction
    - 2 ECM Targeting in CNS Diseases
    - 3 Targeting ECM Metabolizing Enzymes in CNS Diseases
    - 4 Integrin Targeting in CNS Diseases
    - 5 Targeting CAMs in CNS Diseases
    - 6 Conclusions
    - Acknowledgements
  - PART 4: NEURAL ECM SCAFFOLDS
    - Chapter 16: Neural ECM mimetics
      - Abstract
      - 1 ECM Mimetics on the Rise





- 
- 4 ECM Mimetics
  - 5 Biomedical Neural ECM Mimetics
  - 6 Lost in Translation
  - Acknowledgments
  - Chapter 17: Integration of microstructured scaffolds, neurons, and multielectrode arrays
    - Abstract
    - 1 Introduction
    - 2 Neurons and Neuroelectronic Micro-/nanostructured Substrates
    - 3 Primary Neuronal Cultures on Neuroelectronic Substrates
    - 4 Growing Neuronal Networks with Imposed Topologies
    - 5 3D Neuronal Cultures and Challenges for Neuroelectronic Interfacing
    - 6 Emerging Network Properties Induced by Different Surface Functionalizations and Network Topologies
    - 7 Conclusions
    - Acknowledgments
  - Chapter 18: Intracellular signaling and perception of neuronal scaffold through integrins and their adapter proteins
    - Abstract
    - 1 Introduction
    - 2 Integrin Structure Function Relationship
    - 3 Mechanosignaling in Integrin-Dependent Cell–Matrix Adhesions
    - 4 Mechanism of Paxillin Recruitment to Cell–Matrix Adhesions
    - 5 Paxillin, at the Origin of an Integrin-Mediated Signaling Hub
    - 6 Integrin Signaling and LTP at the Synapse
    - 7 Conclusion
    - Acknowledgments
  - Index
  - Other volumes in PROGRESS IN BRAIN RESEARCH
-

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In the central nervous system, extracellular matrix (ECM) molecules, including hyaluronic acid, chondroitin and heparan sulfates, proteoglycans, reelin and agrin, along with their remodelling enzymes, such as neurotrypsin, neuropsin, plasminogen activators, and

metalloproteinases, are secreted by neural and non-neural cells into the extracellular space to form the ECM and signal via ECM receptors. Despite recent advances in the ECM field, the importance of neural ECM for physiological and pathological processes is currently less widely recognized than that of other CNS elements. This book will enlighten recent progress in our understanding of mechanisms by which neural ECM, its receptors and activity-dependent ECM remodeling regulate neural development, synaptic plasticity, and contribute to pathological changes in the brain. In the first part, the roles of ECM signaling and proteolytic modification of ECM in neurogenesis, neural migration, axonal pathfinding, synaptogenesis, synaptic and homeostatic plasticity will be discussed. The second part will focus on the emerging ECM-dependent mechanisms associated with CNS injury, epilepsy, neurodegenerative and neuropsychiatric diseases. For further development of neural ECM field, a very important contribution is the third part of the book, which is devoted to neural ECM-targeting tools and therapeutics. The concluding fourth part will highlight advances in development of artificial ECM and ECM-based systems suitable for multisite recording and stimulation of neural cells.

## Key Features

- Authors are the leading experts in the field of brain extracellular matrix in health and disease
- Book covers the most important aspects of brain extracellular matrix in health and disease
- Interesting for both scientists and clinicians

## Readership

Neuroscientists, psychologists, neurologists. The volume will serve as an outstanding reference for both those just entering the field and experts seeking an update on this fast moving area.

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