Contents

Preface, vii

Overview of the Matrisome—An Inventory of Extracellular Matrix Constituents and Functions, 1

Richard O. Hynes and Alexandra Naba

Basement Membranes: Cell Scaffoldings and Signaling Platforms, 17

Peter D. Yurchenco

The Collagen Family, 45

Silvie Ricard-Blum

Heparan Sulfate Proteoglycans, 65

Stephane Sarrazin, William C. Lamanna, and Jeffrey D. Esko

The Thrombospondins, 99

Josephine C. Adams and Jack Lawler

Tenascins and the Importance of Adhesion Modulation, 129

Ruth Chiquet-Ehrismann and Richard P. Tucker

Fibronectins, Their Fibrillogenesis, and In Vivo Functions, 149

Jean E. Schwarzbauer and Douglas W. DeSimone

Integrin Structure, Activation, and Interactions, 169

Iain D. Campbell and Martin J. Humphries

Cross Talk among TGF-β Signaling Pathways, Integrins, and the Extracellular Matrix, 183 *John S. Munger and Dean Sheppard*

Molecular Architecture and Function of Matrix Adhesions, 201

Benjamin Geiger and Kenneth M. Yamada

Genetic Analyses of Integrin Signaling, 223

Sara A. Wickström, Korana Radovanac, and Reinhard Fässler

Integrins and Extracellular Matrix in Mechanotransduction, 245

Martin Alexander Schwartz

Integrins in Cell Migration, 259

Anna Huttenlocher and Alan Rick Horwitz

Contents

Extracellular Matrix Degradation and Remodeling in Development and Disease, 275 Pengfei Lu, Ken Takai, Valerie M. Weaver, and Zena Werb

Extracellular Matrix in Development: Insights from Mechanisms Conserved between Invertebrates and Vertebrates, 299

Nicholas H. Brown

Angiogenesis, 313

Donald R. Senger and George E. Davis

Extracellular Matrix: Functions in the Nervous System, 333

Claudia S. Barros, Santos J. Franco, and Ulrich Müller

Cell-Extracellular Matrix Interactions in Normal and Diseased Skin, 357 Fiona M. Watt and Hironobu Fujiwara

Extracellular Matrix Proteins in Hemostasis and Thrombosis, 371 Wolfgang Bergmeier and Richard O. Hynes

Index, 389