

CONTENTS

Contributors	ix
--------------------	----

Role of Activin and Other Peptide Growth Factors in Body Patterning in the Early Amphibian Embryo

Makoto Asashima, Kei Kinoshita, Takashi Ariizumi, and George M. Malacinski

I. Introduction	2
II. Mesoderm-Inducing Factors and Their Modifiers	7
III. Effects of Activin on the Regional Expression of Specific Genes	22
IV. Axial Patterning by Activin(s)	26
V. Life History of Activin Signaling Mechanisms of the Embryo	31
VI. Proposed Molecular Models for Activin's Role in Signal Transduction Pathways	37
VII. Activin Causes a Broad Array of Differentiations <i>in Vitro</i>	38
VIII. Conclusion	40
References	42

Calcium Regulation of the Actin-Myosin Interaction of *Physarum polycephalum*

Akio Nakamura and Kazuhiro Kohama

I. Introduction	53
II. Calcium Inhibition of Motile Events Related to Actomyosin	55
III. Calcium Inhibition of the Actin-Myosin Interaction of <i>Physarum</i> as Detected <i>in Vitro</i>	58
IV. Ca-Binding Properties of <i>Physarum</i> Myosin	67

V. Phosphorylated State and Calcium Inhibition of <i>Physarum</i> Myosin	72
VI. Actin-Binding Proteins of <i>Physarum</i> That Are Involved in Calcium Inhibition	77
VII. Ca-Binding Proteins in <i>Physarum</i>	83
VIII. Amebal Myosin and Amebal-Plasmodial Transition	88
IX. Concluding Remarks	90
References	92

Characteristics of Skeletal Muscle in Mdx Mutant Mice

Sabine De La Porte, Sophie Morin, and Jeanine Koenig

I. Introduction	99
II. Animal Models	100
III. Dystrophin, Utrophin, and Associated Proteins	102
IV. Mdx Muscle Cells	113
V. Therapeutic Projects	126
V. Concluding Remarks	129
References	130

Regulation of Phosphate Transport and Homeostasis in Plant Cells

Tetsuro Mimura

I. Introduction	149
II. Measurements of Inorganic Phosphate	151
III. Distribution of Inorganic Phosphate	152
IV. Membrane Transport of Inorganic Phosphate	157
V. Homeostasis and Detection of Pi Status in Plant Cells	184
VI. Concluding Remarks	192
References	194

Synaptic-like Microvesicles in Mammalian Pinealocytes

Peter Redecker

I. Introduction	201
II. The Mammalian Pineal Organ: A Mediator of Darkness	203
III. Ultrastructural Observations	205
IV. Molecular Aspects	211
V. Emergence of Functional Concepts	224

VI. Biogenesis of Synaptic-like Microvesicles	236
VII. Concluding Remarks and Future Perspective	237
References	241

Invertebrate Integrins: Structure, Function, and Evolution

Robert D. Burke

I. Introduction	257
II. Invertebrate Integrins	259
III. Evolution of Integrins	266
IV. Concluding Remarks	281
References	281
Index	285