

CONTENTS

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

Differentiation-Related Changes in the Cell Cycle Traverse

George P. Studzinski and Lawrence E. Harrison

I. Introduction	1
II. Basic Definitions	2
III. Models of Cell Differentiation	5
IV. Overview of the Regulation of the Cell Cycle Traverse	13
V. Cell Cycle Control and Differentiation	25
VI. Transcription Factors and Differentiation	35
VII. Proliferation-Differentiation Interfaces	38
VIII. Conclusions	40
References	41

Nitric Oxide and Endothelin-1 in Coronary and Pulmonary Circulation

Annalisa Rubino, Andrzej Loesch, and Geoffrey Burnstock

I. Introduction	59
II. Coronary Circulation	65
III. Pulmonary Circulation	73
IV. Plasticity of Expression of NOS and ET-1	79
V. Conclusions	85
References	85

Phosphoinositide Kinases and the Synthesis of Polyphosphoinositides in Higher Plant Cells

Bjørn K. Drøbak, Ralph E. Dewey, and Wendy F. Boss

I. Introduction	95
II. Functions of Polyphosphoinositides in Eukaryotic Cells, with Special Reference to Their Potential Role(s) in Higher Plants	100
III. Biosynthesis and Metabolism of Phosphatidylinositol	106
IV. Role of Phosphatidylinositol Transfer Proteins in the Regulated Synthesis and Turnover of Polyphosphoinositides	107
V. Phosphoinositide Kinases and the Synthesis of Polyphosphoinositides	113
VI. Summary and Conclusions	124
References	124

Chlamydomonas Cell Cycle Mutants

John D. I. Harper

I. Introduction	131
II. <i>Chlamydomonas</i> , Cytoskeleton, and the Cell Division Cycle	134
III. Mutant Studies	143
IV. Future Prospects	166
V. Conclusions	168
References	169

Cellular Aspects of Trophic Actions in the Nervous System

Daniela M. Vogt Weisenhorn, John Roback, Andrew N. Young, and Bruce H. Wainer

I. Introduction	177
II. Growth Factors with Narrow Tissue Specificity: Neurotrophins	180
III. Growth Factors with Broad Tissue Specificity: EGFs, FGFs, PDGFs, and IGFs	189
IV. Ciliary Neurotrophic Factor and Related Molecules	209
V. Transforming Growth Factor- β and Related Molecules	214
VI. Neurotransmitters	216
VII. Hormones	229
VIII. Conclusion	235
References	236

Conformational Changes of Contractile Proteins and Their Role in Muscle Contraction

Yurii S. Borovikov

I. Introduction	267
II. Polarized Fluorescence of Muscle Fibers	269
III. Changes in Actin Conformation Initiated by the Actin-Myosin Interaction	273
IV. Conformational Changes in Myosin Initiated by Its Interaction with Actin and Nucleotide	278
V. Regulation of Conformational Changes of Actomyosin by Thin and Thick Filament-Associated Regulatory Proteins	280
VI. Tropomyosin Conformational Changes Initiated by the Actin-Myosin Interaction	283
VII. Modification of Actin Structure Inhibiting Changes in Actin Conformation Induced by Myosin	286
V. Concluding Remarks	289
References	294
Index	303