

Contents

Part I PDEs and Signaling, Circuitry, and Implications of CNS Functions and Disorders

- 1 Phosphodiesterase Diversity and Signal Processing Within cAMP
Signaling Networks** 3
Susana R. Neves-Zaph
- 2 Current Understanding of PDE10A in the Modulation of Basal
Ganglia Circuitry** 15
Jan-Philip Schülke and Nicholas J. Brandon
- 3 Interaction of Cdk5 and cAMP/PKA Signaling in the Mediation
of Neuropsychiatric and Neurodegenerative Diseases.** 45
Yafang Hu, Suyue Pan, and Han-Ting Zhang
- 4 The PDE4 cAMP-Specific Phosphodiesterases: Targets for Drugs
with Antidepressant and Memory-Enhancing Action.** 63
Graeme B. Bolger
- 5 Phosphodiesterase-4B as a Therapeutic Target for Cognitive
Impairment and Obesity-Related Metabolic Diseases.** 103
Steven J. Clapcote

Part II PDEs in Cognition of Aging and Alzheimer's Disease

- 6 From Age-Related Cognitive Decline to Alzheimer's Disease:
A Translational Overview of the Potential Role
for Phosphodiesterases** 135
Pim R.A. Heckman, Arjan Blokland, and Jos Prickaerts
- 7 The Past, Present, and Future of Phosphodiesterase-4 Modulation
for Age-Induced Memory Loss** 169
Rolf T. Hansen III and Han-Ting Zhang

| | | |
|---|--|------------|
| 8 | A Role for Phosphodiesterase 11A (PDE11A) in the Formation of Social Memories and the Stabilization of Mood | 201 |
| | Michy P. Kelly | |
| 9 | Role of PDE9 in Cognition | 231 |
| | C. Dorner-Ciossek, K.S. Kroker, and H. Rosenbrock | |
| Part III PDEs in Parkinson's and Huntington's Diseases | | |
| 10 | Regulation of Striatal Neuron Activity by Cyclic Nucleotide Signaling and Phosphodiesterase Inhibition: Implications for the Treatment of Parkinson's Disease | 257 |
| | Fernando E. Padovan-Neto and Anthony R. West | |
| 11 | Role of Phosphodiesterases in Huntington's Disease. | 285 |
| | Francesca R. Fusco and Emanuela Paldino | |
| Part IV PDEs and Psychiatric Disorders | | |
| 12 | The Role of Phosphodiesterase-2 in Psychiatric and Neurodegenerative Disorders | 307 |
| | Chong Zhang, Lindsay M. Lueptow, Han-Ting Zhang, James M. O'Donnell, and Ying Xu | |
| 13 | Phosphodiesterase 1: A Unique Drug Target for Degenerative Diseases and Cognitive Dysfunction | 349 |
| | Lawrence P. Wennogle, Helen Hoxie, Youyi Peng, and Joseph P. Hendrick | |
| 14 | PDE Inhibitors for the Treatment of Schizophrenia | 385 |
| | Gretchen L. Snyder and Kimberly E. Vanover | |
| Part V PDEs and Others | | |
| 15 | Targeting Phosphodiesterases in Pharmacotherapy for Substance Dependence | 413 |
| | Rui-Ting Wen, Jian-Hui Liang, and Han-Ting Zhang | |
| 16 | Genetic Understanding of Stroke Treatment: Potential Role for Phosphodiesterase Inhibitors. | 445 |
| | Anjana Munshi and Satrupa Das | |
| 17 | A Unique Sub-Pocket for Improvement of Selectivity of Phosphodiesterase Inhibitors in CNS. | 463 |
| | Yousheng Wang and Hengming Ke | |

Phosphodiesterases: CNS Functions and Diseases

Zhang, H.; Xu, Y.; O'Donnell, J.M. (Eds.)

2017, XIX, 471 p. 44 illus., 36 illus. in color., Hardcover

ISBN: 978-3-319-58809-4