

# Contents

<b>A Brief Overview of Techniques for Modulating Neuroendocrine and Other Neural Systems . . . . .</b>	<b>1</b>
Maryem Manzoor and Donald Pfaff	
<b>Basics of Stem Cell Biology as Applied to the Brain . . . . .</b>	<b>11</b>
Inna Tabansky and Joel N.H. Stern	
<b>Human Pluripotent-Derived Lineages for Repairing Hypopituitarism . .</b>	<b>25</b>
Lorenz Studer and Viviane Tabar	
<b>Recapitulating Hypothalamus and Pituitary Development Using Embryonic Stem/Induced Pluripotent Stem Cells . . . . .</b>	<b>35</b>
Hidetaka Suga	
<b>Regulation of Body Weight and Metabolism by Tanycyte-Derived Neurogenesis in Young Adult Mice . . . . .</b>	<b>51</b>
Seth Blackshaw, Daniel A. Lee, Thomas Pak, and Sooyeon Yoo	
<b>Genetic Dissection of the Neuroendocrine and Behavioral Responses to Stressful Challenges . . . . .</b>	<b>69</b>
Alon Chen	
<b>Pituitary Stem Cells: Quest for Hidden Functions . . . . .</b>	<b>81</b>
Hugo Vankelecom	
<b>Pituitary Stem Cells During Normal Physiology and Disease . . . . .</b>	<b>103</b>
Cynthia L. Andoniadou	
<b>Epigenetic Mechanisms of Pituitary Cell Fate Specification . . . . .</b>	<b>113</b>
Jacques Drouin	

**Advances in Stem Cells Biology: New Approaches to Understand Depression** . . . . . 123  
A. Borsini and P.A. Zunszain

**Perspective on Stem Cells in Developmental Biology, with Special Reference to Neuroendocrine Systems** . . . . . 135  
Karine Rizzoti, Carlotta Pires, and Robin Lovell-Badge