

# Contents

---

Foreword .....	vii
Preface .....	xv
Contributors .....	xxv

## PART I: IMMUNOSUPPRESSANTS, NEUROLOGIC DISORDERS, AND NEUROPROTECTION

- 1 • Introduction: Immunosuppressants as Neuroprotective Agents ..... 3  
*Marcus F. Keep, Hiroyuki Uchino, and Eskil Elmér*

## PART II: IMMUNOSUPPRESSANTS AND PARKINSON'S DISEASE

- 2 • Cyclosporin-Mediated Amelioration of Degeneration of Dopaminergic Neurons in Experimental Models of Parkinsonism ..... 35  
*Norio Ogawa and Ken-ichi Tanaka*
- 3 • Immunophilin Ligands and Dopamine Neurons: *Specific Effects in Culture and In Vivo* ..... 49  
*Lauren C. Costantini and Ole Isacson*
- 4 • Effects of Neuroimmunophilin Ligands on Parkinson's Disease and Cognition ..... 67  
*Joseph P. Steiner, Douglas T. Ross, Hansjorg Sauer, Theresa Morrow, and Gregory S. Hamilton*
- 5 • Improved Survival of Grafted Dopamine Neurons by Calcineurin Inhibitors ..... 93  
*Roger F. Castilho, Oskar Hansson, and Patrik Brundin*
- 6 • Possible Mechanisms Underlying the Protective Action of Immunosuppressants Against Parkinson's Disease: *The Mitochondrial Permeability Transition Pore Hypothesis* ..... 105  
*L. V. P. Korlipara and A. H. V. Schapira*

## PART III: IMMUNOSUPPRESSANTS AND OTHER AGE-RELATED DISORDERS

- 7 • Immunosuppressants and Alzheimer's Disease ..... 141  
*Mark P. Mattson*
- 8 • Cyclosporin A Protects Striatal Neurons from Mitochondrial  
Dysfunction: *Implications for Huntington's Disease* ..... 159  
*Liza Leventhal and Jeffrey H. Kordower*

## PART IV: IMMUNOSUPPRESSANTS, STROKE, AND TRAUMATIC BRAIN INJURY

- 9 • Cyclosporin A Protects Mitochondria in an In Vitro Model  
of Hypoxia/Reperfusion Injury ..... 177  
*Vladimir Gogvadze and Christoph Richter*
- 10 • Protective Effect of Cyclosporin A on Glial Activation and  
White Matter Alterations Induced by Chronic Cerebral  
Hypoperfusion ..... 193  
*Hideaki Wakita, Hidekazu Tomimoto, and Ichiro Akiguchi*
- 11 • Blockade of Late-Onset Reduction of Muscarinic  
Acetylcholine Receptors by Immunosuppressants  
in Forebrain Ischemia ..... 215  
*Ken-ichi Tanaka, M. Asanuma, and Norio Ogawa*
- 12 • The Role of Immunophilins in Focal Cerebral Ischemia:  
*Evidence of Neuroprotection by FK506* ..... 231  
*A. L. McGregor, P. A. Jones, J. F. McCarter, T. E. Allsopp,  
and J. Sharkey*
- 13 • Immunosuppressants in Traumatic Brain Injury ..... 263  
*David O. Okonkwo and John T. Povlishock*

## PART V: IMMUNOSUPPRESSANTS AND SPINAL CORD INJURY

- 14 • Inhibition of Lipid Peroxidation by Cyclosporin After Spinal  
Cord Injury in Rats ..... 283  
*Antonio Ibarra and Araceli Diaz-Ruiz*
- 15 • Axonal Regeneration in Cyclosporin A-Treated Rats  
Submitted to Transverse Section of the Spinal Cord ..... 299  
*Guido Palladini and Brunella Caronti*

## PART VI: IMMUNOSUPPRESSANTS AND SCIATIC NERVE INJURY

- 16 • Neuroimmunophilin Ligands Accelerate and Promote Nerve  
Regeneration in the Rat Peripheral Nerve and Spinal Cord:  
*Role of the Steroid Receptor–FKBP52 Complex* ..... 317  
*Bruce G. Gold*
- 17 • Neuroimmunophilin Ligands Stimulate Recovery  
of Injured Sciatic Nerves ..... 329  
*Joseph P. Steiner, Heather Valentine, Theresa Morrow,  
and Gregory Hamilton*

PART VII: IMMUNOSUPPRESSANTS AND OTHER DISORDERS OF THE CENTRAL  
NERVOUS SYSTEM

- 18 • Cyclosporin A Prolongs Survival of SOD1 Mutant Mice  
and Implicates Mitochondrial Permeability Transition  
in Amyotrophic Lateral Sclerosis ..... 343  
*Marcus F. Keep, Keith S. K. Fong, Katalin Csiszar,  
and Eskil Elmér*
- 19 • Psychological Effects of Cyclosporin A ..... 361  
*Shigeru Watanabe*
- Index ..... 375



<http://www.springer.com/978-0-89603-944-5>

Immunosuppressant Analogs in Neuroprotection

Borlongan, C.V.; Isacson, O.; Sanberg, P.R. (Eds.)

2003, XXVII, 378 p., Hardcover

ISBN: 978-0-89603-944-5

A product of Humana Press