

Contents

Part I Neuroimmune Interactions	1
Cytokines and the Blood–Brain Barrier	3
William A. Banks, Jessica L. Lynch, and Tulin O. Price	
Neurochemical and Endocrine Responses to Immune Activation: the Role of Cytokines	19
Adrian J. Dunn	
Neural Pathways Mediating Behavioral Changes Associated with Immunological Challenge	35
Lisa E. Goehler and Ron P.A. Gaykema	
Molecular Basis of Cytokine Function	59
Pranela Rameshwar and Arlene Bardaguez	
Interferon-α, Molecular Signaling Pathways and Behavior	71
Jianping Wang	
Exercise and Stress Resistance: Neural-Immune Mechanisms	87
Monika Fleshner, Sarah L. Kennedy, John D. Johnson, Heidi E. W. Day, and Benjamin N. Greenwood	
Part II Neuroimmunological Basis of Behavior	109
Alteration of Neurodevelopment and Behavior by Maternal Immune Activation	111
Stephen E.P. Smith and Paul H. Patterson	

Interleukin-2 and Septohippocampal Neurons: Neurodevelopment and Autoimmunity	131
John M. Petitto, Zhi Huang, Grace K. Ha, and Daniel Dauer	
Cytokine-Induced Sickness Behavior and Depression	145
Q. Chang, S.S. Szegedi, J.C. O'Connor, R. Dantzer, and K.W. Kelley	
Effect of Systemic Challenge with Bacterial Toxins on Behaviors Relevant to Mood, Anxiety and Cognition	183
Rachel A. Kohman, Joanne M. Hash-Converse, and Alexander W. Kusnecov	
Cytokines, Immunity and Sleep	209
Francesca Baracchi and Mark R. Opp	
Cytokines and Aggressive Behavior	235
Allan Siegel, Suresh Bhatt, Rekha Bhatt, and Steven S. Zalcman	
Neurochemical and Behavioral Changes Induced by Interleukin-2 and Soluble Interleukin-2 Receptors	261
Steven S. Zalcman, Randall T. Woodruff, Ruchika Mohla, and Allan Siegel	
Part III Neuroimmunological Basis of Mental Disorders	285
Immunity and Depression: A Clinical Perspective	287
Steven J. Schleifer	
Cytokines, Immunity and Schizophrenia with Emphasis on Underlying Neurochemical Mechanisms	307
Norbert Müller and Markus J. Schwarz	
Immunobiological and Neural Substrates of Cancer-Related Neurocognitive Deficits	327
Martin Klein	
Autoimmunity and Brain Dysfunction	341
Steven A. Hoffman and Boris Sakic	
Viruses and Psychiatric Disorders	383
Bradley D. Pearce	
Microglial Cells and Inflammatory Cytokines in the Aged Brain	411
Amy F. Richwine and Rodney W. Johnson	
Index	425