

Chemokines, Chemokine Receptors, and Disease

Edited by

Lisa M. Schwiebert



Current Topics in Membranes, Volume 55



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Lisa M. Schwiebert, Ph.D.


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Current Topics in Membranes, Volume 55

Chemokines, Chemokine Receptors, and Disease

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Foreword

Chemokines, Chemokine Receptors, and Disease: A comprehensive view of chemokine biology

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Chemokines are small chemotactic proteins that mediate their function via binding to seven transmembrane-spanning G-protein-coupled receptors. Originally, chemokines were implicated in leukocyte trafficking and homing; recent work, however, demonstrates a role for chemokines and their receptors in a variety of disease-related pathologies including atherosclerosis, inflammation, allergy, infectious disease, and carcinogenesis. The chemokine receptor-mediated signaling pathways that trigger these pathologies are an intense area of study. In addition, chemokine receptor antagonists that block responses to these chemotactic proteins, and thereby attenuate or lessen associated tissue damage, are being actively developed.

The volume *Chemokine, Chemokine Receptors, and Disease* attempts to present these topics in an integrated manner that provides the reader with a comprehensive and up-to-date knowledge in both chemokine biology and related pathologies. We begin with introductory chapters that review, in detail, the history and biology of chemokine subfamilies, including CXC, CC, CX3C, and C chemokines, and their respective receptors. With that foundation in place, we next address chemokine-related topics in physiology and pathophysiology. Specifically, these topics discuss the role of chemokines and their receptors in such diverse areas as hematopoiesis, intestinal physiology, neurophysiology, pulmonary inflammation, vascular disease, carcinogenesis, and infectious disease. In the last chapter, we examine the emerging field of chemokine-related therapeutics and how such modalities may improve basic research as well as provide therapy to fight

disease. Clearly, the topic of chemokine biology is a rapidly growing and changing field. As such, in every chapter, authors address the subject of future directions and unanswered questions in the area of chemokine biology in order to provide a road map for future chemokine-related research.

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