Methods in ENZYMOLOGY

Volume 460

Chemokines, Part A

Edited by

Tracy M. Handel

Damon J. Hamel

VOLUME FOUR HUNDRED AND SIXTY

METHODS IN ENZYMOLOGY

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EDITED BY

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525 B Street, Suite 1900, San Diego, CA 92101-4495, USA
30 Corporate Drive, Suite 400, Burlington, MA 01803, USA
32 Jamestown Road, London NW1 7BY, UK

First edition 2009

For information on all Academic Press publications
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ISBN: 978-0-12-374908-6
ISSN: 0076-6879

Printed and bound in United States of America
09 10 11 12 10 9 8 7 6 5 4 3 2 1

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PREFACE

Chemokines and chemokine receptors are the eyes and ears of the immune system, and under normal healthy conditions they guide the migration of leukocytes within the body to areas of assault or injury. Of course, this system can be broken, corrupted, compromised, and led astray in a variety of ways. Immune cells can attack their own tissues leading to autoimmune diseases such as rheumatoid arthritis and multiple sclerosis. Many pathogens have evolved ways to "blind" the immune system, thus allowing them to go undetected and propagate freely. Viruses such as HIV-1 have been shown to use specific transmembrane chemokine receptors as one path to cellular entry and infection. The progression of cancer can even be aided by the good intentions of immune system–mediated vascularization.

The list goes on, and hence the scientific community has long realized the importance of understanding and eventually being able to manipulate this complex system. As a result, the number of papers addressing chemokines and chemokine receptors has grown exponentially over the last decade. In 1997, Richard Horuk edited volumes 287 and 288 of the *Methods in Enzymology* series on chemokines and chemokine receptors, putting together the first comprehensive practical guide to studying these molecules.

Since then many new technologies and methodologies have been designed and implemented in the study of these proteins. Volumes 460 and 461 of *Methods in Enzymology* seek to compile and highlight these recent methods, explain their importance, and clearly describe in detail the protocols necessary for successful experimental reproduction. Volume 460 focuses on studying the roles of chemokines and chemokine receptors in disease states, atypical chemokine receptors, and chemokine signaling, as well as chemokine related proteins from pathogens. Volume 461 deals with the assays and methods used to study structure and function of these proteins and to characterize their ultimate goal of cell migration. These methods span a wide spectrum of multidisciplinary techniques, from new spectroscopic advances to *in situ* cell-selective protein expression to devices designed to mimic the conditions of flow present in blood vessels where *in situ* leukocyte migration occurs.

Many of the authors from the first volumes have returned in the present work to build upon the foundation they laid over a decade ago. In addition,

many newer researchers have pitched in and lent their expansive expertise to the cause. Compilations like this are assembled by the immense efforts of many individual researchers and we emphatically offer our thanks and gratitude to all of the authors who contributed to making these volumes a reality.

Tracy M. Handel and Damon J. Hamel

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