

ADVANCES IN **Immunology**

EDITED BY

FRANK J. DIXON

*Research Institute of Scripps Clinic
La Jolla, California*

ASSOCIATE EDITORS

Frederick Alt
K. Frank Austen
Tadamitsu Kishimoto
Fritz Melchers
Jonathan W. Uhr

VOLUME 64



ACADEMIC PRESS

San Diego London Boston
New York Sydney Tokyo Toronto

CONTENTS

CONTRIBUTORS

ix

Proteasomes and Antigen Processing

KEIJI TANAKA, NOBUYUKI TANAHASHI, CHIZUKO TSURUMI, KIN-YA YOKOTA,
AND NAOKI SHIMBARA

I. Introduction	1
II. The TAP System	4
III. The Ubiquitin System	5
IV. The Proteasome System	8
V. Model for Generation of MHC Class I-Associated Peptides	26
VI. Perspectives	31
References	32

Recent Advances in Understanding V(D)J Recombination

MARTIN GELLERT

I. Introduction	39
II. Basic Properties	39
III. Broken DNA Molecules in V(D)J Recombination	42
IV. Factors Involved in V(D)J Recombination	44
V. Biochemistry of the First Steps of V(D)J Recombination	51
VI. Biological Consequences	59
References	61

The Role of Ets Transcription Factors in the Development and Function of the Mammalian Immune System

ALEXANDER G. BASSUK AND JEFFREY M. LEIDEN

I. Introduction	65
II. Structure of the Ets DNA-Binding Domain	66
III. Ets Binding Sites in Immune/Immune-Related Genes	68
IV. Individual Ets Proteins and Immune Function	74

V. Conclusions and Future Directions	94
References	96

Mechanism of Class I Assembly with β^2 Microglobin and Loading with Peptide

TED H. HANSEN AND DAVID R. LEE

I. Background	105
II. Proteasome	105
III. Calnexin	107
IV. TAP	112
V. Proposed Function of Tap Versus Calnexin: Might TAP Be the Predominant Class I Chaperone?	119
VI. ER versus Cytosolic Processing	121
VII. Peptide Anchoring	124
VIII. Final Remarks	128
IX. Note Added in Proof	128
References	129

How Do Lymphocytes Know Where to Go: Current Concepts and Enigmas of Lymphocyte Homing

MARKO SALMI AND SIRPA JALKANEN

I. Introduction	139
II. Lymphocyte-Endothelial Cell Interactions: Historical Aspects and the Conceptual Framework	140
III. Molecules and Signals Mediating Lymphocyte-Endothelial Cell Interactions	143
IV. Regulation of Adhesion Molecule Expression and Function	163
V. Regulation of Tissue-Selective Homing	174
VI. Lymphocyte Homing and Inflammation	188
VII. Adhesion Deficiencies	193
VIII. Antidhesion and Proadhesion Therapy	196
IX. Concluding Remarks	197
References	199

Plasma Cell Dyscrasias

NORIHIRO NISHIMOTO, SACHIKO SUEMATSU, AND TADAMITSU KISHIMOTO

I. Introduction	219
II. Plasmacytoma in Mouse	221
III. Human Plasma Cell Dyscrasias	242
IV. Conclusion	263
References	263

Anti-Tumor Necrosis Factor- α

MARC FELDMANN, MICHAEL J. ELLIOTT, JAMES N. WOODY, AND
RAVINDER N. MAINI

I. Introduction	283
II. Rationale for Anti-TNF α Antibody Therapy	290
III. Clinical Studies with Anti-TNF α	299
IV. Mechanisms of Action of Anti-TNF α	311
V. Potential Problems	323
VI. Prospects for the Future	330
VII. Concluding Remarks	334
References	335

INDEX

351

CONTENTS OF RECENT VOLUMES

363