1. Record Nr. UNINA9910144557103321

Titolo Antigen presenting cells : from mechanisms to drug development / /

edited by Harald Kropshofer and Anne B. Vogt

Pubbl/distr/stampa Weinheim, : Wiley-VCH, c2005

ISBN 1-280-85407-3

9786610854073 3-527-60702-1 3-527-60698-X

Descrizione fisica 1 online resource (653 p.)

Classificazione 42.15

Altri autori (Persone) KropshoferHarald

VogtAnne B

Disciplina 571.9/677

Soggetti Antigen presenting cells

Antigenen Celbiologie Farmacologie

Lingua di pubblicazione Inglese

Formato Materiale a stampa

Livello bibliografico Monografia

Note generali Description based upon print version of record.

Nota di bibliografia Includes bibliographical references and index.

Nota di contenuto Antigen Presenting Cells; Contents; Preface; Acknowledgments; List of

Contributors; List of Abbreviations; Color Plates; Part I Antigen Presentation in the Immune System; 1 Some Old and Some New Findings on Antigen Processing and Presentation; 1.1 Introduction; 1.2 HEL Processing; 1.3 Selection of Peptide Segments of HEL; 1.4 HEL: Conformational Isomers; 1.4.1 Biology of Type B T Cells; 1.5 Negative Selection and Peripheral Activation to HEL Peptides; 1.6 Response to HEL Immunization in the Draining Lymph Node; Part II Molecular

Mechanisms of Antigen Processing

2 Antigen Entry Routes - Where Foreign Invaders Meet Antigen

Presenting Cells2.1 Introduction; 2.2 Antigen Entry via the Gastrointestinal Tract: 2.2.1 Pever's Patches: 2.2.2 Mesenteric Lymph

Node; 2.2.3 Dendritic Cells of the Lamina Propria; 2.2.4 Pathogens
Target Intestinal Antigen Presenting Cells; 2.3 Antigen Entry via the

Skin; 2.4 Systemic Dissemination of Antigens/Infectious

Microorganisms; 2.5 Antigen Presenting Cells in the Liver; 2.5.1

Dendritic Cells; 2.5.2 Kupffer Cells; 2.5.3 Liver Sinusoidal Endothelial Cells; 2.6 Conclusion

3 Antigen Processing in the Context of MHC Class I Molecules3.1 Tracing the Needle in the Haystack: The Efficiency of Antigen Processing and Presentation by MHC Class I Molecules; 3.2 The "Classical" Route: Loading of MHC Class I Molecules With Peptides Generated in the Cytoplasm; 3.2.1 Cytosolic Peptide Processing by Proteasomes and other Proteases; 3.2.1.1 Structure and Function of the Proteasomal Core and Interferon-induced Subunits; 3.2.1.2 Targeting Proteins for ATP-dependent Degradation by 26S Proteasomes; 3.2.1.3 Cleavage Properties of (Immuno)Proteasomes

3.2.1.4 Peptide Processing by Nonproteasomal Cytosolic Peptidases3.3 Crossing the Border - Peptide Translocation into the ER by TAP; 3.3.1 Structure and Function of TAP; 3.3.2 Substrate Specificity of TAP; 3.3.3 TAP-independent Peptide Entry into the ER; 3.4 Fitting in the Best: TAP-associated Peptide Loading Complex Optimizes MHC-I Peptide Binding; 3.4.1 Structure of MHC-I Molecules; 3.4.2 Early Steps in the Maturation of MHC-I Molecules; 3.4.3 Structure and Molecular Interactions of Tapasin; 3.4.4 Optimization of Peptide Loading in the TAP-associated Loading Complex

3.5 On the Way Out: MHC-I Antigen Processing along the Secretory Route3.6 Closing the Circle - Cross-presentation of Endocytosed Antigens by MHC-I Molecules; 3.6.1 Phagosome-to-cytosol Pathway of MHC-I Peptide Loading; 3.6.2 Endolysosomal Pathway of MHC-I Peptide Loading; 4 Antigen Processing for MHC Class II; 4.1 Introduction; 4.2 Types of Antigen Presenting Cells; 4.2.1 Macrophages, B Lymphocytes and DCs; 4.2.2 Tissue-resident APCs; 4.2.3 Maturation State of APCs; 4.2.3.1 Immature APCs; 4.2.3.2 Mature APCs; 4.3 Antigen Uptake by APCs; 4.3.1 Macropinocytosis; 4.3.2 Phagocytosis 4.3.3 Receptors for Endocytosis

## Sommario/riassunto

This novel, multidisciplinary handbook highlights recent evidence that antigen presenting cells (APCs) are not only key players in the initiation or prevention of an antigen-specific T lymphocyte-mediated adaptive immune response, but also critical regulators and integrators in the interplay between our innate and adaptive immune system. Structured in a clear way to allow access to a very broad readership, the book is written from the viewpoint of a biochemist, immunologist, and scientist with experience in drug development. It covers all cell types involved in antigen presentation, providi