

<<过敏性疾病的多学科解决途径>>

图书基本信息

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内容概要

Allergy is an immunological disease caused by multiple factors and characterized by variability, specificity and complexity. Multidisciplinary Approaches to Allergies covers diverse aspects ranging from basic molecular mechanisms to societal issues within the framework of multidisciplinary approaches to allergies. It contains 29 chapters in 6 parts: General Allergy; Allergenic Sources and Allergens; Diagnosis; Therapies and Pharmacy; Hypoallergenic Products; Environment, Hygiene and Societal Issues. It can be used in education and research as introductory and supplementary material. It is also an indispensable tool for scientists and doctors who are searching for an integrated way for allergy prevention, treatment and management.

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书籍目录

Part General Allergy 1 Prevalence of Allergic Diseases in China 1.1 Introduction 1.2 Common Allergic Diseases in China 1.2.1 Allergic Rhinitis 1.2.2 Allergic Lung Disorders 1.2.3 Allergic Dermatitis 1.3 Current Research on the Allergens in China 1.3.1 Pollen Allergy (Hay Fever) 1.3.2 Fungal Allergens 1.3.3 Dust Mite 1.3.4 Environment Pollution 1.3.5 Food Allergens 1.3.6 Drug 1.3.7 Specific Allergens in China 1.3.8 Other Allergens 1.4 Socioeconomic Burden of the Inexorable Rise in Allergies 1.5 Conclusion References 2 Mechanism of Type I Hypersensitivity 2.1 Introduction 2.2 IgE and IgE Receptors 2.3 Mast Cells 2.4 Eosinophils 2.5 Basophils 2.6 T Lymphocytes 2.7 B Lymphocytes 2.8 Conclusion References Multidisciplinary Approaches to Allergy Prevention 3.1 Introduction 3.2 Genetic and Genomic Approaches 3.2.1 Food Allergy 3.2.2 Allergic Asthma 3.2.3 Skin Allergy 3.3 The Potential of Epigenetic Approaches 3.4 The Application of Traditional Medicine 3.5 Allergen - Free Foods 3.5.1 “ May Contain ” Labeling 3.5.2 Gluten 3.5.3 Oats 3.6 Allergen - Free Environment 3.7 The Allergy Knowledge Framework 3.8 Conclusion References Part Allergenic Sources and Allergens 4 Overview of Allergen Sources in China 4.1 Introduction 4.2 Aeroallergens 4.2.1 Pollen 4.2.2 Molds 4.2.3 Other Outside Aeroallergenic Sources 4.3 Indoor Allergens 4.4 Ingestible Allergenic Sources 4.5 Contactants 4.6 Injected Allergenic Sources 4.7 Future Perspective Acknowledgements References 5 Allergen Protein Families and Cross - Reactivity 5.1 Introduction 5.2 Structural , Functional and Evolutionary Characteristics of Allergens 5.3 Cross - Reactivity 5.4 Amino Acids and IgE Recognition 5.5 The Birch - Apple Syndrome Model References 6 Seafood Allergens in China and Anti - allergenic Property of Seaweeds 6.1 A Brief Introduction to Seafood Allergy 6.2 Seafood Allergens 6.2.1 Fish Allergens 6.2.2 Shellfish Allergens 6.2.3 Shrimp Allergens 6.2.4 Lobster Allergens 6.2.5 Crab Allergens 6.2.6 Mollusca Allergens 6.2.7 Cephalopod Allergens 6.2.8 Gastropod and Bivalve Allergens 6.3 Effect of Food Processing on Allergenicity 6.3.1 Thermal Processing 6.3.2 High Intensity Ultrasound 6.3.3 Irradiation 6.4 Analytical Methods for Seafood Allergens Detection in Food Matrices 6.5 Anti - allergenic Compounds from Seaweeds Acknowledgements References Fond Allergen Epitopes 7.1 Introduction 7.1.1 Linear Epitopes of Food Allergens 7.1.2 Conformational Epitopes of Food Allergen 7.2 The Role of Epitopes in Food Allergy 7.2.1 Allergenicity Prediction of Food Allergens 7.2.2 Cross - Reactivity of Food Allergen 7.2.3 Epitopes and Diagnosis of Food Allergy 7.2.4 Epitopes and Immunotherapy 7.3 T - Cell Epitope Mapping Approaches 7.3.1 T - Cell Epitopes Mapping by a Proliferation Assay 7.3.2 T - Cell Epitope Mapping by Flow Cytometry 7.3.3 T - Cell Epitope Mapping Using the ELISPOT Approach 7.3.4 Other Assays 7.4 B - Cells Epitope Mapping 7.4.1 B - Cell Linear Epitope Mapping 7.4.2 Proteolytic and Chemical Fragmentation for Epitope Mapping 7.4.3 Epitope Mapping Using SPOTTM Peptide Arrays 7.4.4 Epitope Mapping by the Phage Display Approach 7.4.5 Epitope Mapping with Peptides Microarray - Based Immunoassay 7.4.6 B - Cell Conformational Epitope Mapping 7.4.7 Conformational Epitope Mapping by Phage Display Technology 7.5 Conformational Epitope Mapping by Nuclear Magnetic Resonance Spectroscopy Technique 7.6 Epitope Mapping by X - ray Crystallography 7.7 Conclusion Acknowledgements References Recombinant Allergens and Applications 8.1 Introduction 8.2 Advantages of Recombinant Allergens 8.3 Strategies for Recombinant Allergen Production 8.3.1 Heterologous Expression Systems 8.3.2 Isolation and Purification of Recombinant Allergens 8.4 Application of Recombinant Allergens 8.4.1 Determination of Three - Dimensional Structures 8.4.2 B - Cell and T - Cell Epitope Mapping 8.4.3 Cross - Reactive Structures 8.4.4 Diagnostic and Therapeutic Applications of Recombinant Allergens 8.5 Conclusion Acknowledgements References Part Diagnosis The CREATE Project : Development of Certified Reference Materials for Allergenic Products and Validation of Methods for Their Quantification 9.1 WHO / IUIS Allergen Standardization Initiatives 9.2 Partnership and Aims of CREATE 9.3 Allergen Production and Purification 9.3.1 Physico - chemical Characterization 9.3.2 Immune Reactivity 9.3.3 The CREATE Serum Bank 9.3.4 Stability 9.3.5 ELISA Evaluation 9.4 Future Perspectives of CREATE 9.4.1 Summary of Achievements of CREATE 9.4.2 How to Proceed Acknowledgements References Part Therapies and Pharmacy Part Hypoallergenic Products Part Environment , Hygiene and Societal Issues. Index

章节摘录

版权页：插图：7.3.3 T - Cell Epitope Mapping Using the ELISPOT Approach
The ELISPOT assay is widely used to detect antigen - specific immune responses to target antigens. This method is especially useful to measure both clonal size and effector function of low - frequency antigen - specific T - cell populations directly ex vivo (Wulf et al. , 2009) and is based on the principle that memory CD4+ T - cells secrete effector cytokines upon contact with the antigen. PBMCs are treated with the peptide , followed by cytokine assessment after stimulation during 24 h (Anthony and Lehmann , 2003) . This assay is a kind of intracellular cytokine staining assay , which is categorized into a fast and high resolution approach at single cell level. Compared with other assays , it is one or two orders of magnitude more sensitive than the flow cytometry - based techniques , and it is one of the few immune monitoring assays that can be performed with cryopreserved PBMC samples without significant loss of activity. The disadvantages of this technique are the subjectivity due to manual reading of the plates , and the need for cell separation to discriminate between antigen - specific responses derived from CD4+ T - cells and CD8+ T - cells. Now , several additional reasons also have contributed to the main - stream use of the ELISPOT assay. The IFN - γ ELISPOT assay and IL - 4 ELISPOT have successfully been used to map T - cell epitopes. For example , by using this technique , antagonists and non - toxic variants of wheat gliadin T - cell epitopes were investigated (Anderson et al. , 2006) .

7.3.4 Other Assays
Due to biotechnological applications in immunology , several new approaches have been developed for T - cell mapping. T - cell epitope mapping using transgenic mice expressing HLA is a good example of such application. In this assay , the draining lymph nodes of immunized HLA transgenic mice provide a more abundant source of allergen - specific CD4+ T - cell to map T - cell epitopes , than the PBMCs of atopic patients (Malherbe , 2009) . Other novel techniques involve (1) T - cell mapping by cytokine gene expression (Provenzano and Spagnoli , 2009) , and (2) T - cell mapping by TAD (antigen and epitope discovery) , which is on the basis of taking the advantage of paramagnetic beads to augment an antigen presentation (Valentino and Frelinger , 2009) . Although these new methods have not been found in food allergen epitope mapping yet , their potential for applications are promising.

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编辑推荐

《过敏性疾病的多学科解决途径(英文版)》由浙江大学出版社出版。

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