Hla Typing Epitopes

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Immunological Responses to Fungal Epitope Peptides - Parita Sheth-Ughade 2012
Introduction: Fungi are common aeroallergens responsible for at least 3% - 10% of allergic diseases worldwide, with the proportion hugely variable in different populations. Treatment is complicated by viable nature and disease causing ability of the allergen and is often only palliative. Thus, this study aimed to serve as a pilot investigation to design novel anti-allergy therapeutics to cure allergy at the molecular level. It investigates the effect of wild type fungal peptides and corresponding variant peptides on allergy associated immunological responses - cellular and cytokine based - to use such variant peptides to cause the delicate shift from an allergic to a normal immune response. Further, the study explores the role of bioinformatics in investigating allergy and designing novel therapeutics. Methods: This study used ProPred, a bioinformatics software, to predict wild type peptides from selected allergens of Aspergillus fumigatus and Alternata alternaria for a target population. These were then modified to generate single amino acid variants. Both these peptide sets were tested to compare the cellular and cytokine patterns they generated in sensitised (n = 3) and healthy volunteers (n = 3) to check for anti-allergy responses that may be exerted by certain variants. The recruited population was also subjected to skin prick testing (SPT, n = 46) to check for co-sensitisations patterns and HLA typing (n = 40) to evaluate ProPred accuracy for peptide prediction. This study also attempted an in silico search for unknown Penicillium chrysogenum allergens by comparing known Penicillium and A. fumigatus allergens to identify probable agents of co-sensitization. Results: Of the wild type and variant peptides tested in this study, one variant peptide - peptide 1.1v from Asp f 2 - was successfully identified to change the cellular and cytokine profile to promote an anti-allergic response when compared to its corresponding wild type form (1.1o). This candidate is a good target for further investigation for use in peptide immunotherapy. Further, 8 shared allergens between A. fumigatus and P. chrysogenum were identified that may possibly be agents of co-sensitization between these species. SPT results indicated maximum subject co-sensitization between A. fumigatus and Candida albicans and P. chrysogenum. HLA typing results demonstrated the efficiency of ProPred to be 96.29%, thus implying that bioinformatics can effectively be used to study allergy in this novel manner. Conclusion: This study has demonstrated that variant peptides with a single amino acid change can cause the delicate shift from an allergic to a healthy immune response in sensitised subjects. This approach - in combination with other allergy associated factors such as epitope specificity for HLA types and inherent co-sensitization patterns in a population - can effectively be used to design peptide candidates for immunotherapy to target allergy at the molecular level. With promising results obtained in this pilot study, this approach guarantees further investigation in immunotherapy. This study has also demonstrated that bioinformatics can be effectively used to design and execute allergy studies in a targeted and inexpensive manner.
HLA and Disease, An Issue of the Clinics in Laboratory Medicine - Julio Delgado 2018-11-16
This issue of Clinics in Laboratory Medicine,

edited by Drs. Julio Delgado and Eszter Lazar-Molnar, will focus on HLA and Disease. Topics include, but are not limited to, The potential impact of NGS in HLA and disease association studies, HLA typing by NGS, HLA Antibody Testing: Evolution and Challenges, Diversity of killer cell immunoglobulin-like receptors and disease, Technical Aspects of Crossmatching in Transplantation, HLA Markers in Celiac Disease, HLA Associations in Drug Hypersensitivity Reactions, HLA in BMT, Post-transplant monitoring, HLA epitope matching in transplantation, and Molecular Testing in Post-Transplant Monitoring.

Immune Regulation - Marc Feldmann 2012-12-06

Leukocyte culture conferences have a long pedigree. This volume records some of the scientific highlights of the 16th such annual con ference, and is a witness to the continuing evolution and popularity of leukocyte culture and of immunology. There is strong evidence of the widening horizons of immunology, both technically, with the obviously major impact of molecular biology into our understanding of cellular processes, and also conceptually. Traditionally, the 'proceedings' of these conferences have been published. But have the books produced really recorded the major part of the conference, the informal, friendly, but intense and some times heated exchanges that take place between workers in tackling very similar problems and systems and which are at the heart of every successful conference? Unfortunately this essence cannot be incorpo rated by soliciting manuscripts. For this reason, we have changed the format of publication, retaining published versions of the symposium papers, but requesting the workshop chairmen to produce a summary of the major new observations and areas of controversy highlighted in their sessions, as a vehicle for defining current areas of interest and debate. Not an easy task, as the workshop topics were culled from the abstracts submitted by the participants, rather than being on predefined topics. The unseasonal warmth in Cambridge was reflected in the atmos phere of the conference, the organization of which benefited from the administrative skills of Jean Bacon, Philippa Wells, Mr. Peter Irving, and Mrs.

Immunohematology: Principles and Practice - Eva D Quinley 2020-06-15

Immunohematology: Principles and Practice, Third Edition an ideal text for anyone who wants to master the theory and practices of today's blood banking.

Identification and Characterization of HBV Core CTL Epitopes in Indonesian Samples - Ni Ketut Dias Nursanty 2013

Hepatitis B virus (HBV) is a non-cytopathic virus that causes liver disease with variable duration and severity. During infection, host immune response is responsible for both liver damage and viral clearance. The adaptive immune response, particularly virus-specific cytotoxic T lymphocyte (CTL) response, has been shown to play a major role in HBV infection immunopathogenesis by destroying the infected hepatocytes or eliminating HBV in a non-cytolytic manner. From virus-host interaction perspective, HBV core antigen (HBcAg) has been of interest because it is a major immunological target of CTL. Many human leucocyte antigen (HLA)-restricted HBcAg T cell epitopes have been reported which might be different due to the diverse distribution ethnic-specific HLA in distinct geographical regions. Therefore, it is important to identify and characterize HBcAg CTL epitopes in area with high HBV endemic and high population diversity like Indonesia. To support HBcAg as a promising protein to develop CTL epitope-based vaccine, HBcAg sequences of samples from individuals in Indonesia were analyzed. It was found that the sequences were conserved, and amino acid substitutions observed did not reflect the influence of human leucocyte antigen (HLA) types on the HBcAg variability. To develop such a vaccine, the first thing to do is to determine the peptide(s) that must be immunogenic and can interact with HLA class I proteins of Indonesian populations. Using immunoinformatic approaches, 20 HBcAg CTL epitopes (14 nonamers and 6 decamers) against HLA alleles in Javanese, Sundanese-Javanese, and T ernatean populations were identified. These 20 CTL epitopes were also characterized for sequence variation and conservation in 125 HBcAg of Indonesian isolates. Variations of HBcAg CTL epitope were detected, but one variant was found to be predominant in each epitope. By immunoinformatic analysis, different binding affinity was observed for each variant. The difference was found to depend on the location

and type of amino acid in related epitope that affect its interaction with HLA binding grooves. The present study describes the use of immunoinformatic approaches as a pilot study to identify HBcAg-CTL epitopes of Indonesian isolates and analyze their conservation and variability. Of 20 CTL epitopes, HBcAg 18-27 was found the best CTL epitope for the Indonesian populations represented by the Javanese, Sundanese-Javanese, and Ternatean. Among the discovered epitope variants, residue FLPSDFFPSI was identified as the best candidate to develop peptide-based vaccine due to its predominance among all isolates studied. This study will be beneficial for developing an approach for successful viral control in hepatitis B patients.

HLA Typing - Sebastian Boegel 2019-06-16

This volume explores the rapidly evolving field of HLA typing and its use in both the laboratory setting and in silico methods. The chapters in this book discuss high-throughput methods for HLA typing; wet lab protocols; microarray data and its uses; in silico tools for the identification of HLA alleles from DNA and RNA next-generation-sequencing data, as well as HLA haplotype frequency estimation. Written in the highly successful Methods in Molecular Biology series format, chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and tips on troubleshooting and avoiding known pitfalls. Cutting-edge and practical, HLA Typing: Methods and Protocols is a valuable resource for any researcher interested in learning more about this developing field.

HLA and Associated Important Diseases - Yongzhi Xi 2014-03-19

This year marks the 60th anniversary of HLA discovery by the French Nobel laureate physician Jean Dausset, as well as the 55th anniversary of the identification and naming of the first HLA. Under such circumstances, both basic HLA research and its clinical applications need a new book that comprehensively reflects the latest achievements in the field. Thus, Professor Xi as Editor has contributed to organize international experts in the areas of HLA-related basic research and clinical applications, to unite their knowledge in chapters covering various related topics, and finally to finish the book "HLA and Associated Important Diseases". The book consists of three sections which mainly include basic theoretical and technological developments, several important HLA-associated autoimmune diseases and HLA-associated infectious diseases.

Immunobiology of HLA - Bo Dupont 2012-12-06

The Tenth International Histocompatibility Workshop of this work, and Fran Berman for her help in preparing component concerning T-cell recognition of HLA class the report. MaryAnn Barletta, Sally Krell, and Halina II molecules drew its strength from the hard work, Korsun provided invaluable help with a multitude of diligence, and selfless spirit of the 23 participating organizational and operational issues. Bo Dupont and laboratories. The enthusiasm and camaraderie exhib Bob Knowles provided sound advice, helpful discus ited by the participants in Princeton during November sions, and continued support. John Hansen, Jean Marc 1987 bear testimony to the caliber of the individuals Lalouel, and the other members ofthe Organizing Com involved. mittee made valuable contributions. Rosemarie Pliitke's Numerous individuals, both inside and outside of the enthusiasm, diligence, and statistical expertise were Organizing Committee, contributed significantly to the vital ingredients in this undertaking. John Klein was success of this component of the Workshop. We thank always ready to step in and assume whatever responsibil David Eckels, Adrianna Zeevi, Nancy Reinsmoen, and ity was necessary to keep the work going. Above all, I Eric Mickelson for their continued advice, encourage owe special and personal thanks to my family, whose ment, and hard work throughout this endeavor. We thank patience, support, and understanding helped to sustain Deborah Richardson for her help during the early stages me over the last 2 years."

Defining The Fitness Landscape of HIV-1 Escape from CD8+ Cytotoxic T-Lymphocytes - Aleksandr Gorin 2017

CD8+ Cytotoxic T-Lymphocytes (CTLs) are critical for control of viremia during Human Immunodeficiency Virus-1 (HIV-1) infection. While CTLs ultimately fail to fully suppress viral replication in most individuals, a small subset of infected persons can effectively control viremia for several decades. Understanding the factors

that allow CTLs to mediate this control of viremia can provide a mechanistic basis for the failure of the CTL response in most individuals and help in the development of future HIV-1 vaccines. Certain Major Histocompatibility-I (MHC-I) types are associated with better containment of viremia, but the mechanisms mediating control have been difficult to elucidate. In this dissertation, I construct HIV-1 libraries with saturation mutagenesis at several commonly targeted epitopes and utilize these libraries to demonstrate that epitopes presented by protective MHC-I types are highly constrained in their fitness landscapes and abilities to escape CTL clones targeting the epitope. I then demonstrate that an epitope presented by a non-protective HLA type has multiple fit variants, allowing for mutational escape from CTL recognition with little or no loss in replicative capacity. Next, I examine the CTL response induced by the Mrk/Ad5 HIV vaccine to understand how mutational escape may have contributed to the vaccine's failure. I demonstrate that the vaccine may have generated CTLs that were less efficient at cross recognizing fit epitope variants, and thus allowed for rapid mutational escape from CTL recognition, likely contributing to the failure of this vaccine trial. In the final chapter of this dissertation, I focus on the HIV-1 Nef protein. Nef downregulates the expression of MHC-I on the surface of infected cells and represents another mechanism through which the virus can escape CTL recognition. I conduct a high throughput screen of an HIV-1 library containing thousands of point mutations throughout nef to identify amino acid residues essential for Nef's ability to downregulate MHC-I and demonstrate that these residues are highly conserved in circulating virus isolates. These the results support a mechanism wherein protective MHC-I types elicit superior CTL responses through immunodominance of highly fitness-constrained epitopes and underscore the importance of escape pathways for successful vaccines and immunotherapies based on CTLs.

Advancing Immunopeptidomics - Michael Ghosh 2020

HLA in Health and Disease - Robert Lechler 2000-05-09

This comprehensive and definitive work succeeds and expands on the highly successful HLA and Disease published in 1994. This new edition has been updated, redesigned and reorganised into three sections making it an invaluable reference. The introductory section summarises current knowledge on the structure, function, genetics and evolution of the HLA system. It clarifies its complex and ever changing nomenclature and discusses the mechanisms underlying disease associations with HLA alleles. The second section deals with the importance of HLA in the context of different clinical specialities. Individual chapters describe the association between HLA polymorphism and each disease. The final section features chapters on current laboratory practice in histocompatibility and tissue typing. HLA in Health and Disease is essential reading for basic and clinical researchers working in immunology and immunogenetics, transplantation medicine and autoimmunity. It will also be of interest to anyone in the fields of rheumatology, diabetology, nephrology, allergy, dermatology, neurology, endocrinology, cancer biology, respiratory medicine, haematology, molecular biology and biochemistry. Key Features Structure, function and genetics of HLA HLA nomenclature Evolution of HLA polymorphisms HLA associations in arthritis and rheumatology, renal disease, neurology, diabetes and endocrinology, gastroenterology, respiratory disease, ophthalmology, infections, dermatology and psychiatry HLA and organ transplantation Serological and PCR-based methods in HLA typing Cellular techniques in testing histocompatibility Edited and written by an international panel of experts in the field

HIV Immunology and HIV/SIV Vaccine Databases - 2005

Immunoinformatics - Christian Schönbach 2007-11-21

In contrast to existing books on immunoinformatics, this volume presents a cross-section of immunoinformatics research. The contributions highlight the interdisciplinary nature of the field and how collaborative efforts among bioinformaticians and bench scientists result in innovative strategies for understanding the immune system. Immunoinformatics is ideal for scientists and students in immunology,

bioinformatics, microbiology, and many other disciplines.

Immunogenetics: Advances and Education - J.A. Madrigal 2012-12-06

M. BENcovA Slovak Foundation Education in Immunogenetics Kopanice 25, 821 04 Bratislava Slovak Republic Short History of Slovakia After the end of the 5th century, the major part of Central Europe was dominated by Slavs (Slovaks). They had already in the 7th century settle ments in the vicinity of towns Bratislava, Devin, Nitra to create the Slovak's state formation with the name "The Empire of Sam", territory of which corresponded to that of Slovakia of present. The Empire of Sam was also the first state formation in the Central Europe (as present states Czech Republic, Poland, Hungary, Slovakia etc.) Very important town of this state was Nitra, with the biggest Castle in the Central Europe with his Duke Pribina. The first Church of the Central Europe was built here in the year 830, and it is now considered to be the "Slovak Bethlehem". In the year 880, Nitra also became the first Office of Bishops. Later, the Slovak Duke Pribina and Moravian Duke Mojmir (Moravia corresponded to eastern part of the present Czech Republic) joined their formations to common state "Greate Moravian Empire". The strongest King of the Great Moravian Empire was Svatopluk (864 A. D.), who spread his empire over Czech Republic, Hungary and part of Poland, Ukraine and eastern Germany of present, which at that time still did not exist as state formations.

Immune Escape Pathways from the HBV Core18-27 CD8 T Cell Response are Driven by Individual HLA Class I Alleles - Andreas Walker 2022

Abstract: Background and aims: There is growing interest in T cell-based immune therapies for a functional cure of chronic HBV infection including check-point inhibition, T cell-targeted vaccines or TCR-grafted effector cells. All these approaches depend on recognition of HLA class I-presented viral peptides. The HBV core region 18-27 is an immunodominant target of CD8+ T cells and represents the prime target for T cell-based therapies. Here, a high-resolution analysis of the core18-27 specific CD8+ T cell and the selected escape pathways was performed. Methods: HLA class I typing and viral sequence analyses were performed for 464 patients with chronic HBV infection. HBV-specific CD8+ T-cell responses against the prototype and epitope variants were characterized by flow cytometry. Results: Consistent with promiscuous presentation of the core18-27 epitope, antigen-specific T cells were detected in patients carrying HLA-A*02:01, HLA-B*35:01, HLA-B*35:03 or HLA-B*51:01. Sequence analysis confirmed reproducible selection pressure on the core18-27 epitope in the context of these alleles. Interestingly, the selected immune escape pathways depend on the presenting HLA-class I-molecule. Although cross-reactive T cells were observed, some epitope variants achieved functional escape by impaired TCR-interaction or disturbed antigen processing. Of note, selection of epitope variants was exclusively observed in HBeAg negative HBV infection and here, detection of variants associated with significantly greater magnitude of the CD8 T cell response compared to absence of variants. Conclusion: The core18-27 epitope is highly variable and under heavy selection pressure in the context of different HLA class I-molecules. Some epitope variants showed evidence for impaired antigen processing and reduced presentation. Viruses carrying such escape substitutions will be less susceptible to CD8+ T cell responses and should be considered for T cell-based therapy strategies

The HLA FactsBook - Steven G.E. Marsh 1999-12-13

The HLA FactsBook presents up-to-date and comprehensive information on the HLA genes in a manner that is accessible to both beginner and expert alike. The focus of the book is on the polymorphic HLA genes (HLA-A, B, C, DP, DQ, and DR) that are typed for in clinical HLA laboratories. Each gene has a dedicated section in which individual entries describe the structure, functions, and population distribution of groups of related allotypes. Fourteen introductory chapters provide a beginner's guide to the basic structure, function, and genetics of the HLA genes, as well as to the nomenclature and methods used for HLA typing. This book will be an invaluable reference for researchers studying the human immune response, for clinicians and laboratory personnel involved in clinical and forensic HLA typing, and for human geneticists, population biologists, and evolutionary biologists interested in HLA genes as markers of human

diversity. Introductory chapters provide good general overview of HLA field for novice immunologists and geneticists Up-to-date, complete listing of HLA alleles Invaluable reference resource for immunologists, geneticists, and cell biologists Combines both structural and functional information, which has never been compiled in a single reference book previously Serological specificity of allotypes Identity of material sequenced including ethnic origin Database accession numbers Population distribution Peptide binding specificities T cell epitopes Amino acid sequences of allotypes Key references

Immunobiology of HLA - Bo Dupont 2013-12-20

This set reports the results of the 10th International Histocompatibility Workshop, in which 362 laboratories collaborated over a three year period in research projects on the classification of HLA genes and their products. Volume 1 describes the experimental design of the workshop studies and their results. Volume 2 is a collection of papers on the latest developments in the molecular biology of HLA systems. Immunobiology of HLA is a valuable reference for tissue typing laboratories, blood banks, and general research programs on HLA and related diseases because it identifies common sources of HLA genes and gene products to be used as reference reagents, and because it is the only complete compilation of the latest research and results in the field.

Human T Cell Epitopes and HLA Class II Restriction Elements of Chlamydia Trachomatis Major Outer Membrane Protein - Linette Ortiz 1998

In Silico Discovery of Novel Cytotoxic T-lymphocyte Epitopes in the HIV-1 Pol Region in Response to Antiretroviral Resistance Mutations - Werner Smidt 2014

The Acquired Immunodeciency Syndrome pandemic continues to have a large social impact. Many advances in the treatment of infection by the causative agent, Human Immunode ciency Virus, have been made in the last three decades. However, this treatment often means a life-long rigorous adherence to treatment and acquisition of resistance mutations to antiretrovirals. Thus far, the e cacy of promising vaccines has been disappointing. In the last decade, interest has grown concerning the interaction between mutations conferring resistance to antiretrovirals and the e ect this has on epitopes recognized by cytotoxic-T-lymphocytes (CTL). Investigating this is a di cult task, owing to both the extreme polymorphism of HIV and the polymorphism of the Human Leukocyte Antigen (HLA) molecules that present peptides to the CTLs. A large amount of HLA-associated CTL escape mutations have been discovered. Together with this, computational approaches in CTL epitope discovery is becoming increasingly accurate. Here, a method of imputing HLA type from patients together with predicting the in uence of anitretroviral mutations was used to discover potential epitopes for the HLA B*15 and B*48 types in the HIV-1 Subtype B pol region.

HIV Immunology and HIV SIV Vaccine Databases 2003 -

HLA Class II Antigens - Bjarte G. Solheim 2012-12-06

This volume deals with the structure and function of molecules that have, during the last decade, turned out to have a central role in immune responses. Trans plantation antigens were discovered and characterized by Gorer about 50 years ago, and the biological basis for the unequalled complexity of their variability between individuals within a species, in spite of extreme conservation between species, was the subject of intense research and discussion for many years. During the days of belief in "immune surveillance" against spontaneously developing tumors, it was suggested that histoincompatibility between members of one species would prevent cancer from being a contagious disease and thus a threat to the species. Immunologists involved in human transplantation had to learn and care about the complexity, especially after 1967, when it was found that HLA antigens were the products of the human MHC. Rejection of HLA-identical sib kidney grafts was so rare, even in those days, that cases of rejection were described in scientific papers.

HIV Molecular Immunology Database - 1999

The HLA System - John Lee 2012-12-06

This volume documents our growing understanding of the human major

histocompatibility complex. The application of this information is ever more important as the limits of transplantation continue to be reduced, including the recent success of bone marrow transplantation between unrelated but closely matched individuals. In addition, the need to transfuse platelets in the face of immunologic barriers continues to challenge transfusion services. Thus, the serologic information summarized in this volume is essential for optimal patient care. At the same time, recombinant DNA technology has led to a revolution in our understanding of many aspects of basic biology. Among the advances has been the initial characterization of the structure of some HLA loci. While this will ultimately improve clinical services, constant reference to serologic data is essential so that the powerful new techniques can be applied in the most effective ways. The timing of the First Red Cross International Histocompatibility Workshop is fortunate as it brings together experts from around the world to address the state of the art. We are all grateful to Dr. John Lee and his colleagues for organizing the workshop, and for bringing together in this volume the material to be presented in Beijing during October 17-23, 1990. Leon W. Hoyer, M.D.

The HLA System in Clinical Transplantation - Bjarte G. Solheim 2012-12-06

With this book we· want to address young graduate students, clini cians involved in transplantation, and technicians in transplantation immunology laboratories. The volume should give a comprehensive but basic, up to date introduction to the structure, function, and clinical importance of the HLA system. We believe that there is a need for such a survey, and think that the present level of our knowledge is an optimal occasion for publication. A significant number of ques tions have now been resolved, and our knowledge has reached a level of sophistication that provides the basis for additional questions and answers. Although the emphasis of this book is on the role of HLA anti gens in clinical transplantation, their involvement in other clinical contexts is also discussed. The main focus is on the human MHC an tigenic system, but MHC systems in other species are described as they contribute to our understanding of the structural and functional characteristics of HLA antigens. Some important issues related to laboratory techniques are also covered. The contributors have a close affiliation to the field of transplan tation immunology. A majority have even been playing important roles in unraveling the HLA system and its functions. We believe this has contributed significantly to the quality and clinical and practical relevance of the book. As editors, we drew up the principal guidelines and took care that the chapters can be read as separate entities, although this invariably results in some overlapping.

Immunologic Concepts in Transfusion Medicine - Robert W Maitta 2019-08-27

Immunological Concepts in Transfusion Medicine provides a thorough discussion of the immune aspects of blood component transfusion, with in-depth information on the intricacies of immune responses to blood components and the immune processes that may be initiated in response to blood exposure. Written to increase knowledge and awareness of immune challenges such as alloimmunization and transfusion-related acute lung injury, this title bridges current basic scientific discoveries and the potential effects seen in blood recipients. Complies the knowledge and expertise of Dr. Robert Maitta, an expert in immune responses and antibody function/structure studies. Helps clinicians in the daily practice of caring for patients in need of transfusion support, as well as physicians in training when considering utilizing blood transfusions in a limited scope or in the setting of massive transfusion. Includes an immunology primer as an introduction to in-depth chapters covering allergic immune reactions to blood components, transfusion-related immunomodulation, fetal and neonatal alloimmune thrombocytopenia and neonatal neuthropenia, complications of haploidentical and mismatched HSC transplantation, chimeric antibody receptor therapies, and much more. Consolidates today’s available information on this timely topic into a single, convenient resource.

MLC-typing in Man- - Fritz Jørgensen 1978

Significance of antigen and epitope specificity in tuberculosis - Juraj Ivanyi 2014-12-04

Dissection of the specificity of host immune responses following infection with Mycobacterium tuberculosis is essential for designing effective

vaccination and diagnostic biomarkers as well as for better understanding of immunopathogenesis of active tuberculosis. The articles in this volume of the Topics in Microbial Immunology review the significance of this area of research from both experimental models and clinical surveys. This includes T cell recognition of MHC permissive epitopes, use of algorithms for genome-based prediction of immunodominant epitopes, evaluation of candidate antigens/epitopes and adjuvants for vaccination and immunodiagnosis. Future research strategies indicate the need for better understanding of the relationship between epitope specificity and the phenotype of responding T cells and search for biomarkers with a capacity to discriminate and predict the change from latent infection to active disease. These research avenues have important potentials for improving the prevention and control of tuberculosis.

Epitope Discovery and Synthetic Vaccine Design - Clarisa Beatriz Palatnik-de-Sousa 2018-07-12

HLA and MHC - Michael J. Browning 1996

This is a review of the major histocompatibility complex (MHC), and the role it plays in the immune response and in disease. The emphasis throughout is on the human MHC, but relevant animal studies are inclded to give a comprehensive review of the subject.

HIV Molecular Immunology 2001 - 2001

HLA from Benchtop to Bedside - A. Bradley Eisenbrey 2021-01-05

HLA from Benchtop to Bedside provides the reader with a comprehensive, concise and thoroughly up-to-date book on all aspects of the HLA system, including new techniques and methodologies. Each chapter begins with bullet point lists of principle learning points, including comprehensive references and validated links to international resources. Written by a diverse range of international academics for professionals, researchers, undergraduate and graduate students, this book is ideal for organ and stem cell transplant professionals, histocompatibility laboratory professionals and staff, medical residents and fellows on transplant services, medical students, and students in clinical laboratory science. The book's author, Dr. Arthur Bradley Eisenbrey, is an experienced transplant pathologist who has held significant academic and leadership positions in the field. Reviews current knowledge surrounding the HLA system Covers current methodologies and utilization of histocompatibility testing Authored by a leader in the field of histocompatibility and transfusion medicine

The HLA Complex in Biology and Medicine - Narinder K Mehra 2010-11-26

A comprehensive guide to the HLA (Human Leukocyte Antigen) system for immunologists and clinicians, this book contains up-to-date information on the MHC (Major Histocompatibility Complex) and its role in the immune response and in various diseases. The book explores the biological significance and role of the HLA system in organ and haematopoietic stem cell transplantation management. This volume is an invaluable guide to the full spectrum of HLA-related science while also serving as a conceptual and technical resource for those involved in HLA-related research and in clinical or surgical practice. In addition, it will be a primary point of contact for individuals working in other areas who suddenly find that their research is drawing them into the complexities of HLA genetics.

Histocompatibility Testing 1984 - E.D. Albert 2012-12-06

MHC Ligands and Peptide Motifs - Hans-Georg Rammensee 2013-11-11

This book is centered on a comprehensive list of MHC peptide motifs and ligands as known to date, together with selected T cell epitopes, arranged in an easy-to-read fashion. This information is put into context by chapters on MHC gene organization, MHC structure, T cell epitope prediction, antigen processing and T cell responses. In addition, the book provides a great deal of complementary information: amino acid sequences of MHC class I alpha1 and alpha2 domains and of class II alpha1 and beta1 domains, the established or predicted composition and specificity of MHC pockets, notes on MHC nomenclature including old assignments and reference to useful internet addresses. A handy reference manual that should be helpful for all those dealing with MHC-associated peptides.

Antibody Repertoire and Graft Outcome

Following Solid Organ Transplantation - Narinder K. Mehra 2017-07-25

The first real major breakthrough that laid the basis of HLA antibody detection in the field of solid organ transplantation, came with the introduction of the complement dependent cytotoxicity (CDC) test in 1964 by Terasaki and McClelland. Since then, methods for antibody detection have evolved remarkably from conventional cell-based assays to the current advanced solid phase systems on the Luminex platform, with increasing degree of sensitivity and specificity. The latter have been indispensable for more accurate identification of donor specific HLA antibodies in broadly reactive allo antisera, and to guide donor selection and kidney paired exchange programs through virtual crossmatching, in addition to serving as excellent tools for initiating pre-transplant desensitization and post- transplant antibody monitoring. Consensus is evolving on the optimal routine employment of these methods in donor selection strategies along with an understanding of the clinical relevance of antibodies detected by each of them. The immunoassays based on the Luminex platform and flow cytometric beads are however unable to discriminate complement fixing from non-complement fixing HLA antibodies. This is important because the former are considered clinically more pertinent in the peri-transplant period. The C1q assay which is a modification of the solid phase assay based on Luminex single antigen beads, which can be used effectively to monitor high dose IVIG desensitization is essentially a surrogate complement fixing assay, retaining the exquisite sensitivity and specificity of the Luminex platform. Currently, information obtained from these assays is preliminary and much needs to be done to standardize technologies and set a consensus 'MFI cut off' for antibody positivity. Besides the overriding influence of anti-HLA antibodies on overall solid organ graft survival, immune response to non-HLA antigens has become a topic of substantial interest in recent years. An ever expanding list of non-HLA antigens has been implicated in graft rejection for various organs, of which the most noted are the Major Histocompatibility Complex class I chain-related molecule A (MICA), Vimentin, Myosin, Angiotensin II type 1 receptor (AT1R), Tubulin and Collagen. MICA is one of the most polymorphic and extensively studied non-HLA antigenic targets especially in renal transplantation. Although there are clear indications of MICA antibodies being associated with adverse graft outcome, to date a definitive consensus on this relationship has not been agreed. Because MICA molecules are not expressed constitutively on immunocompetent cells such as T and B lymphocytes, it is of utmost importance to address the impact of MICA donor specific antibodies (DSA) as compared to those that are non- donor specific (NDSA) on graft outcome. The soluble isoform of MICA molecule (sMICA) that is derived from the proteolytic shedding of membrane bound molecules has the potential to engage the NK-cell activating receptor NKG2D and down-regulate its expression. Consequent to the interaction of NKG2D by sMICA, the receptor ligand complex is endocytosed and degraded and thus suppresses NKG2D mediated lysis of the target by NK cells. Thus interaction between NKG2D and sMICA leads to expansion of immunosuppressive/anergic T cells thereby resulting in suppression of NKG2D mediated host innate immunity. These concept support the possible involvement of an immunosuppressive role for sMICA during allotransplantation as shown recently for heart transplantation. This research topic focusses on the clinical utility of investigating the complete antibody repertoire in solid organ transplantation.

Current Issues and Future Direction in Kidney Transplantation - Thomas Rath 2013-02-13

The here presented book covers different areas of clinical and scientific interest, reaching from donor evaluation to newest methods in immunological diagnostics. But also aspects of daily care of transplant recipients can be found in the carefully selected chapters. Everything driven by the aim to improve the care for all of our transplanted patients.

Towards HLA Epitope Matching in Clinical Transplantation - 2020

Histocompatibility Testing - Jeffrey L Bidwell 2000-03-08

This invaluable book provides comprehensive coverage of contemporary serological, cellular

and molecular methodologies in histocompatibility testing, and their application to human organ transplantation and transfusion. The contributors are internationally respected authorities in histocompatibility and immunogenetics, and are closely involved in the development or application of state-of-the-art technologies. The first three sections of the book are primarily intended for use as a bench manual for histocompatibility testers, immunologists and immunogeneticists; the fourth and fifth sections, on selection of donors and statistical methods, will further assist medical practitioners involved in clinical transplantation and its outcome. The final section of the book reviews the genetics and clinical relevance of minor histocompatibility antigens. Contents: Foreword:HLA Polymorphism: Origin and Maintenance (W F Bodmer)Introduction:Immune Recognition and the MHC (P Travers)Antibody-Based Histocompatibility Testing:HLA Typing by Alloantibodies and Monoclonal Antibodies (G M Th Schreuder)Screening for HLA-Specific Antibodies (C Brown & C Navarrete)Detection of Soluble HLA (V Rebmann & H Grosse-Wilde)Crossmatching by Lymphocytotoxicity and Flow Cytometry (S Martin & A Harmer)DNA-Based Histocompatibility Testing:PCR-SSP Typing (M Bunce)PCR-SSOP Typing (D Middleton)Sequencing-Based Typing (J Ross)DNA Conformational Analysis (J R Argüello & J A Madrigal)Microsatellite Typing (A Cambon-Thomsen et al.)On-Line HLA Sequence Alignments (G J Laundy & J L Bidwell)Cell-Based Histocompatibility Testing:Cell-Based Histocompatibility Testing (E Kaminski)Donor Selection:Allocation of Solid Organs for Transplantation (P A Dyer & S Sheldon)Selection of Haemopoietic Stem Cell Donors for Transplantation (A Green)Selection of Platelet Donors and Provision of HLA-Matched Platelets (J Harrison & C Navarrete)Statistical Methods:Population Genetics of the Human Major Histocompatibility Complex (R F Schipper et al.)Survival Analysis in Solid Organ Transplantation (P A Dyer)Survival Analysis in Bone Marrow Transplantation (S Richards)HLA and Disease Association: Statistical Considerations(J H Barrett et al.)Minor Histocompatibility Antigens:Minor Histocompatibility Antigens (E Simpson) Readership: Researchers in immunology, histopathology, cell biology and genetics, surgeons and workers in blood transfusion. Keywords:Immunology;Genetics;Immunogenetics ;Transplantation;Histocompatibility;Tissue Typing;Human Leucocyte Antigens, HLA;Major Histocompatibility Complex, MHC;Laboratory Methods

Development, Evaluation and Application of a New Computer Programme Based on HLAMatchmaker Defined Epitopes to Determine the Clinical Effectiveness of HLA Epitope Matched Platelet Transfusions in Immunologically Refractory Patients - 2015

Taken together, these results indicate that selection of HLA matched platelets by epitope matching using ePlatelets represents an effective HLA matching strategy for patients IR to random platelet transfusions.

P53 Immune Response in Breast Cancer Patients: Assessment of CTL Recognizing the HLA-A2.1 Restricted, Wild-Type Sequence P53 264-272 Epitope - 2001

Approximately 30% of breast cancer patients are p53 sero-positive and have detectable anti-p53 T cell proliferative responses. Tumors expressing mutant p53 molecules have an enhanced potential to present wild- type-sequence (wt) p53 epitopes derived from mutant p53 for T-cell recognition. Vaccines targeting these epitopes would be broadly applicable. HLA-A2.l-restricted CTL-recognizing wt P53 264-272 and 149-157 peptides have been generated from PBMC obtained from healthy donors and/or oral cancer patients. A subset of these donors were found to be non-responsive to the P53 264-272 peptide, and altered peptide ligands of this epitope were identified that induced CTL from PBMC that were non-responsive to the parental peptide. Currently, precursor CTL (pCTL) for the P53 264-272 epitope present in unstimulated PBMC can be identified by 4-color flow cytometry using soluble PE-conjugated HLA-AO2Ol/p53 peptide tetrameric complexes (tetramers). An analysis of anti-p53 pCTL in the peripheral circulation and tumors of breast cancer patients was done with tetramers for the wt P53 264-272 and 149-157 peptides. An analysis of genomic p53 exons 5-8 of the patients' tumors, when available, was also performed. The results of this study provide a basis for further investigation of the anti-p53

responses of breast cancer patients and will facilitate p53-based immunotherapy of breast cancer.