Antibody Fc: Linking Adaptive and Innate Immunity

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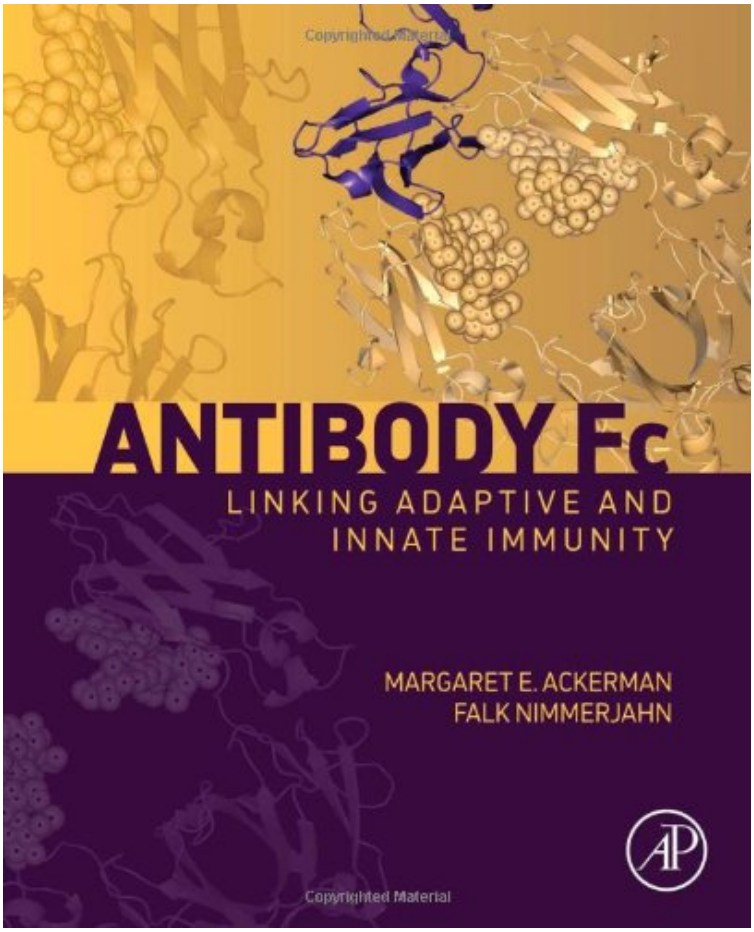

#3679835 in Books 2013-10-04Original language:EnglishPDF # 1 9.50 x .80 x 7.50l, 2.00 #File Name: 0123948029358 pages | File size: 47.Mb

From Academic Press : Antibody Fc: Linking Adaptive and Innate Immunity before purchasing it in order to gage whether or not it would be worth my time, and all praised Antibody Fc: Linking Adaptive and Innate Immunity:

Antibody Fc is the first single text to synthesize the literature on the mechanisms underlying the dramatic variability of antibodies to influence the immune response. The book demonstrates the importance of the Fc domain, including protective mechanisms, effector cell types, genetic data, and variability in Fc domain function. This volume is a critical single-source reference for researchers in vaccine discovery, immunologists, microbiologists, oncologists and protein engineers as well as graduate students in immunology and vaccinology. Antibodies represent the correlate of protection for numerous vaccines and are the most rapidly growing class of drugs, with applications ranging from cancer and infectious disease to autoimmunity. Researchers have long understood the variable domain of antibodies, which are responsible for antigen recognition, and can provide protection by blocking the function of their target

antigen. However, recent developments in our understanding of the protection mediated by antibodies have highlighted the critical nature of the antibody constant, or Fc domain, in the biological activity of antibodies. The Fc domain allows antibodies to link the adaptive and innate immune systems, providing specificity to a wide range of innate effector cells. In addition, they provide a feedback loop to regulate the character of the immune response via interactions with B cells and antigen-presenting cells.Clarifies the different mechanisms of IgG activity at the level of the different model systems used, including human genetic, mouse, and in vitroCovers the role of antibodies in cancer, infectious disease, and autoimmunity and in the setting of monoclonal antibody therapy as well as naturally raised antibodiesColor illustrations enhance explanations of the immune system

"highly recommended reading for all students of immunology and scientists involved in the research and development of therapeutic antibodies and vaccines because of its comprehensive coverage of relevant topicsalso recommended as an excellent resource for academic, government and company libraries."--mAbs, May/June 2014 "Antibody Fc: Linking Adaptive and Innate Immunity is highly recommended reading for all students of immunology and scientists involved in the research and development of therapeutic antibodies and vaccines because of its comprehensive coverage of relevant topicsThe book is also recommended as an excellent resource for academic, government and company libraries."--mAbs, March 21, 2014 "Ackerman and Nimmerjahn offer this volume on the immunological functions of the Fc antibody region. The first two parts discuss effector mechanisms and their mediating cells including antibody-dependent cytotoxicity, the complement system, phagocytosis, natural killer and B cells. Parts III-IV cover general properties of Fc immune receptors, receptor variation amongst species, and the structural variations and glycoside modifications of the Fc domain."--ProtoView.com, February 2014From the Back CoverAntibodies represent the correlate of protection for numerous vaccines, and are the most rapidly growing class of drugs, representing a tremendous economic and therapeutic sector ranging from cancer and infectious disease to autoimmunity. Researchers have long understood the variable domain of antibodies, which are responsible for antigen recognition, and can provide protection by blocking the function of their target antigen. However, recent developments in our understanding of the protection mediated by antibodies have highlighted the critical nature of the antibody constant, or Fc domain in the biological activity of antibodies. The Fc domain allows antibodies to link the adaptive and innate immune systems, providing specificity to a wide range of innate effector cells, as well as providing a feedback loop to regulate the character of the immune response via interactions with B cells and antigen-presenting cells. Despite its nomenclature, a number of factors influence the ability of the constant domain to recruit effector mechanisms. There is a vast literature regarding antibody effector function, indicating that it is a high impact and dynamic area. This is the first comprehensive text to synthesize the literature, describing these functions and presenting the variety of human genetic, mouse model, in vitro and providing clinical evidence of the importance and the dramatic variability of antibodies to influence the immune response.About the AuthorMargaret E. Ackerman studied molecular engineering at the Massachusetts Institute of Technology under K. Dane Wittrup, followed by postdoctoral studies at the Ragon Institute of Massachusetts General Hospital, Massachusetts Institute of Technology, and Harvard University under Galit Alter. She was appointed an Assistant Professor of Engineering at Dartmouth Colleges Thayer School of Engineering in 2011, and an Assistant Professor in the Department of Microbiology and Immunology at Dartmouths Geisel School of Medicine in 2012. Her research group applies protein engineering, molecular biology, and mathematical modelling tools to design enhanced antibody therapeutics and and vaccines.Falk Nimmerjahn studied Biology at the Universities of Bayreuth, Erlangen-Nuernberg and Munich in Germany. After his postdoctoral studies in the laboratory of Jeffrey Ravetch at the Rockefeller University in New York from 2004-2007, he was appointed as an Associate Professor at the University Hospital of Erlangen in 2007. Since 2010 he has been a full Professor of genetics and chairman of the Institute of Genetics at the University of Erlangen-Nuernberg in the Department of Biology. His research focuses on understanding the molecular and cellular mechanisms of mouse and human IgG activity. He authored more than 80 peer reviewed papers and several chapters in text books. For his work on immunoglobulin activity he was awarded several prizes, among them the Paul-Ehrlich and Ludwig Darmstdter Award for young scientists.