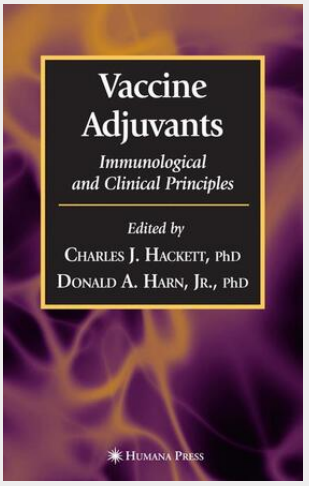
Hackett / Harn Jr

Vaccine Adjuvants

A cutting-edge review of the major research areas of adjuvant discovery, design, development, and use. The authors lay down a rational basis for vaccine adjuvant function and analyze a number of significantly distinct adjuvant-active molecules to illuminate the principles of their function and use. The focus is on specific receptor-ligand interactions, including the molecular features needed for a compound to possess adjuvant activity. The critical interface zone between the innate and adaptive immune systems is also analyzed to show how adjuvants exert their effects on T- and B-cell activation. Additional chapters address the possibility of tailoring adjuvants to yield optimally safe and effective responses.

Recent major advances in our understanding of basic immunology have led to the development of powerful new adjuvants-substances that can stimulate the innate immune system and significantly improve the effectiveness of antigen-based vaccines. In Vaccine Adjuvants: Immunological and Clinical Principles, highly respected clinical immunologists and vaccine researchers detail the major research areas in this new era of adjuvant discovery, design, development, and use. The authors lay down a rational basis for vaccine adjuvant function and analyze a number of significantly distinct adjuvant-active molecules to illuminate the principles of their function and use. The focus is on specific receptor-ligand interactions, including the molecular features needed for a compound to possess adjuvant activity. The critical interface zone between the innate and adaptive immune systems is also analyzed to show how adjuvants exert their effects on T- and B-cell activation. Additional chapters address the possibility of tailoring adjuvants to yield optimally safe and effective responses. Among the highlights are an explanation of innate immune signaling-including Toll-like receptors-in vaccination, and a preview of emerging technologies in adjuvant research, such as microparticles and novel lipid and carbohydrate adjuvants. Authoritative and eminently practical, Vaccine Adjuvants: Immunological and Clinical Principles moves from the basic principles of the innate immune system, through the characteristics of specific adjuvants, to detailed methods for developing the safer and more effective adjuvants that will trigger these powerful immune responses, and finally to the combinations of immune responses needed for successful vaccination.



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