1. Record Nr. UNINA9910820979003321

Titolo	Advanced vaccine research : methods for the decade of vaccines / / edited by Fabio Bagnoli and Rino Rappuoli
Pubbl/distr/stampa	Norfolk, England : , : Caister Academic Press, , [2015] ©2015
ISBN	1-910190-04-7
Descrizione fisica	1 online resource (474 p.)
Disciplina	615.372
Soggetti	Vaccines - Research Drug development
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	Contents; Contributors; Current Books of Interest; Preface; Part I: Innovative Technologies and Approaches in Vaccine Research; 1: Deep Sequencing in Vaccine Research, Development and Surveillance ; Impact of DNA sequencing on vaccines research and development; Deep sequencing potential to transform vaccinology; 2: New Bioinformatics Algorithms Applied to Deep Sequencing Projects ; Introduction; Better understating of host and pathogen genomes; Computational approaches to study adaptive immune responses; Better understanding of transcriptome Epigenomics: understanding of inheritable chemical changesMetagenomics: finding new pathogens and strains; Bioinformatics challenges; 3: Comparative Genomics Approaches for Tracking the Emergence and Spread of Disease-associated Bacteria; Background; Comparative genomics of disease-associated bacteria; Assays for identification of disease-associated bacteria based on insights from comparative genomics; Conclusions; 4: Quantitative Proteomics in Vaccine Research; Introduction; Quantitative proteomics based on gel electrophoresis; Quantitative proteomics based on differential mass tag Label-free technologies and targeted proteomicsMass spectrometry for viral vaccinology; Proteomic technology for vaccine development ; Combining proteomics and system biology to improve vaccines;

Concluding remarks; 5: Structural Biology in Vaccine Research; Introduction; Experimental mapping and computational prediction of epitopes; Examples of structural vaccinology for bacterial and viral pathogens; Concluding remarks and future directions; 6: Cellular Screens to Interrogate the Human T- and B-cell Repertoires and Design Better Vaccines ; Introduction
Generation of naive B- and T-cell repertoires7: Novel Strategies of Vaccine Administration: The Science Behind Epidermal and Dermal Immunization; Introduction; The skin layers; Skin antigen-presenting cells and other players in vaccination; Principles and methods in skin immunization; Vaccine formulation and immunity; Immunological advantage of epidermal and dermal immunization; 8: Toll-like Receptors as Targets to Develop Novel Adjuvants; Introduction; Innate immunity; TLR-based adjuvants in high-priority vaccines; Lessons learned from studies of TLR agonists as adjuvants
Safety considerations of TLR agonistsChallenges for the next decade; 9: The Importance of Cell-mediated Immunity for Bacterial Vaccines ; Introduction; T-cell responses to bacterial infection; Targeting cellular immunity for novel anti-bacterial vaccine design; 10: T-cell-inducing Vaccines; Introduction; How can we measure T-cell responses?; Technologies for inducing T-cell responses by vaccination; Heterologous prime-boost immunization; Successful clinical development of T-cell vaccines; 11: Exploiting the Mutanome for Personalized Cancer Immunotherapy
Cancer mutations as therapeutic targets

Sommario/riassunto

Since the publication of our first book book ""Vaccine Design: Innovative Approaches and Novel Strategies"" in 2011, the field of vaccinology has advanced significantly. The application of new sophisticated 'omics' technologies and the use of pioneering approaches have yielded a wealth of new data. This new book aims to distill the most important new findings to provide a timely overview of the field. Written by leading experts in the field, each chapter affords a critical insight to a particular topic, reviews current research, discusses future direction and aims to stimulate discussion. The