Computer-Aided Vaccine Design. Woodhead Publishing Series in Biomedicine

Description: Computational pre-screening of antigens is now routinely applied to the discovery of vaccine candidates.

Computer-aided vaccine design is a comprehensive introduction to this exciting field of study. The book is intended to be a textbook for researchers and for courses in bioinformatics, as well as a laboratory reference guide. It is written mainly for biologists who want to understand the current methods of computer-aided vaccine design. The contents are designed to help biologists appreciate the underlying concepts and algorithms used, as well as limitations of the methods and strategies for their use. Chapters include: MHC and T cell responses; Immunoglobulins and B cell responses; Scientific publications and databases; Database design; Computational T cell vaccine design; Computational B cell vaccine design; infectious disease informatics; Vaccine safety and quality assessments; and Vaccine adjuvant informatics.

- Essential reading for any biologist who wants to understand methods of computer-aided vaccine design
- Description of available data sources and publicly available software, with detailed analysis of strengths and weaknesses
- Theoretical concepts and practical examples of database design and development for a virtual screening campaign

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