Special Issue

Therapeutic and Diagnostic Applications of Structural Vaccinology

Message from the Guest Editor

Structural vaccinology (SV) methods that combine high-resolution structural biology techniques with computational biology and immunological validation, can drive the design of better, protein-based vaccine components, endowed with improved biochemical and/or immunological properties.
Vaccine components can have secondary uses as serological diagnostic markers that detect their cognate antibodies, induced in subjects with prior exposure to the related pathogen. Presentation of diagnostic epitopes or whole antigens belonging to different infection stages and diseases can spur the design of Multiplex diagnostic tests, capable of rapidly detecting multiple diseases and infection progress. Recent advances in single particle cryo-electron microscopy and the ability to solve the structures of larger, more complex antigen structures will inevitably provide an increased repertoire of available antigen (and antigen-antibody) structures; therefore, examples of SV are likely to increase in the near future. In this context, this Special Issue summarizes the current applications of Structural Vaccinology to both the design of novel therapeutics (vaccines) and diagnostics.

Guest Editor

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About the Journal

Message from the Editor-in-Chief

Vaccines (ISSN 2076-393X), founded in 2013, now has a firm history of publishing peer-reviewed, state-of-the-art research papers on vaccines and vaccination in the broadest sense. Areas covered include, but are not limited to, novel and emerging vaccine technologies, building on in-depth knowledge of what constitutes a protective immune response. These can be new vaccines for old diseases, or old vaccines for new diseases. Vaccines against cancer and autoimmune diseases explicitly are also within the scope of the journal. Because public opinion and even government policies towards vaccines and vaccination have changed, vaccine policy and public health issues are major concerns. Climate change will also have an impact on the spread of infectious diseases, and thus also on vaccine and vaccination policies worldwide.

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