Special Issue

Memory T Cells in Vaccine-Induced Immunity for Infectious Diseases

Message from the Guest Editor

Memory T cells are essential for vaccine-induced immunity, providing long-lasting protection against infectious diseases such as tuberculosis, malaria, smallpox, COVID-19, and influenza. They are classified into three main types: Central Memory T Cells, Effector Memory T Cells, and Tissue-Resident Memory T Cells. Vaccines activate the adaptive immune system to generate memory T cells specific to the target pathogen. Upon re-exposure, these cells respond faster and more effectively than naïve T cells, limiting pathogen replication and reducing disease severity. Understanding the mechanisms that maintain memory T cells over time is vital for developing long-lasting vaccines. Advances in vaccine technologies, such as mRNA platforms and adjuvant design, are enhancing our ability to generate robust and durable memory T cell responses. Leveraging the biology of memory T cells and investigating the factors affecting the development of immune memory following vaccination will be critical for combating infectious diseases and improving global health outcomes.

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.

Editor-in-Chief

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