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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Vaccines (ISSN 2076-393X) has had a 6-year history of publishing peer-reviewed state of the art research that advances the knowledge of immunology in human disease protection. Immunotherapeutics, prophylactic vaccines, immunomodulators, adjuvants and the global differences in regulatory affairs are some of the highlights of the research published that have shaped global health. Our open access policy allows all researchers and interested parties to immediately scrutinize the rigorous evidence our publications have to offer. We are proud to present the work and perspectives of many to contribute to future decisions concerning human health.

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