

I. Measurement of antigen specific T-cell response

After vaccination, a major issue in vaccine efficacy studies is the quantitative measurement of the humoral immune response, i.e. T-cell immunity in addition to antibody production. T cells are capable of killing virus-infected cells and develop a long-term T cell memory that leads to the accumulation of reactive clones in the event of a subsequent viral infection. In immunosuppressed, i.e. immune-compromised patients (elderly, cancer patients, autoimmune patients) this is a particularly important parameter to monitor.

Our approach:

Our group developed a flow cytometric method to measure SARS-CoV-2 specific T cell activity in the context of the COVID-19 pandemic. We isolate white blood cells from blood samples isolated from patients and measure reactive CD4⁺ helper and CD8⁺ cytotoxic T cells at the single cell level after ex vivo restimulation with viral recombinant peptides. The method can also be used to measure other antiviral T cell immunity.

Target group:

Pharmaceutical companies, biotech companies, retail customers who want to see the development of T-cell immunity specific to a particular virus after administration of a vaccine, clinical centres where immunocompromised patients are vaccinated.

Our related publications:

<https://www.frontiersin.org/articles/10.3389/fimmu.2022.846248/full>

<https://www.mdpi.com/1422-0067/23/19/11411>

<https://www.frontiersin.org/articles/10.3389/fmed.2023.1176168/full>