



Introducing Olink® Flex: Th1/Th2/Th17 Panel

Understanding the immune response in health and disease through circulating Th1/Th2/Th17 cytokines

T helper cells (Th cells, CD4+ cells) are known as the most prolific cytokine producers and differentiate into one of the following subsets upon activation:

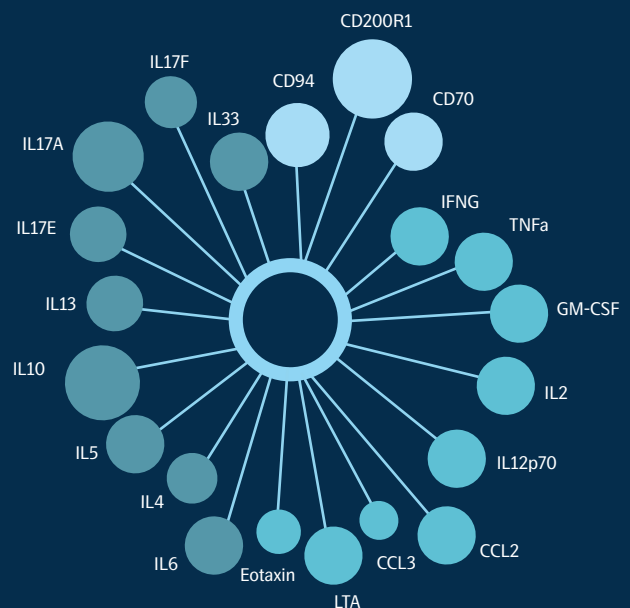
- Th1 cells, which produce proinflammatory cytokines (such as IFN γ , TNF- α , GM-CSF) responsible for eliminating intracellular parasites.
- Th2 cells, which produce cytokines involved in the antibody-mediated immune response against extracellular parasites (such as IL-4/IL-5/IL-13).

Further distinct Th subsets have been identified, including Th17 cells (secreting IL-17A/IL-17F/IL-22).

Disruption of the Th1/Th2 cytokine balance is known to be involved in the development and progression of various immunopathologies, including infectious and autoimmune diseases, as well as playing an important role in cancer immunology.

Monitoring systemic Th1/Th2 cytokine levels through blood profiling has immense value, therefore, for both basic research and clinical advancements.

The Olink Flex Th1/Th2/Th17 panel includes 21 protein biomarkers distinct for these T helper cell populations, including IFN- γ , IL2, IL4 and the IL17 cytokine family. Assessing the shifting T helper cell balance through measuring these cytokines can provide key insights for improved patient stratification, monitoring and treatment, as well as for deeper understanding of the immune system's role in health and disease.



Key publications:

- Han J. et al. Modulation of Inflammatory Proteins in Serum May Reflect Cutaneous Immune Responses in Cancer Immunotherapy. *JID Innovations* (2023)
- Del Deca E. et al. Proteomic characterization of atopic dermatitis blood from infancy to adulthood. *J. Am. Acad. Dermatol.* (2023)
- Bapat S.P. et al. Obesity alters pathology and treatment response in inflammatory disease. *Nature* (2022)
- Michaels J.R. et al. Th1, Th2 and Th17 inflammatory pathways synergistically predict cardiometabolic protein expression in serum of COVID-19 patients. *Mol. Omics* (2022)

Need more flexibility?

Olink® Flex allows you to optimize this panel with other validated assays from the Flex library or to build an entirely new panel that fits your research interests. Try the Flex panel builder on [Olink® Insight](#) now!

