Tyrosine Kinase 2 (TYK2) Immune Pathway

TYK2 and Immune Function

TYK2 activates a series of transcription factors called signal transducer and activator of transcription (STAT). Activated STATs promote expression of cytokines and cellular processes such as cellular division, differentiation, and death.

By binding to specific receptors, cytokines signal through TYK2 to regulate the immune system. These cytokines include IL-12, IL-23 and Type I IFNs, which are critical in driving the function of Th1 cells, Th17 cells and the innate immune response.

TYK2 and Disease

Immune cells are correlated with the pathogenesis of immune-mediated diseases such as psoriasis, lupus, multiple sclerosis and inflammatory bowel disease.

The critical role of TYK2 in driving these pathways is evident in the observation that deactivating mutations in the TYK2 gene provides protection from multiple common immune-mediated disorders.

Research Implications and Interactions

Advancements in the understanding of TYK2 signaling and activation have resulted in the investigation of novel therapeutic interventions.

Through the regulation of overproduction of immune-inflammatory components, it may be possible to suppress difficult-to-treat immune-mediated diseases.

The TYK2 pathway is one of many pathways under investigation at Bristol Myers Squibb.

Learn more about our work in Immunology by visiting: www.bms.com/researchers-and-partners/areas-of-focus.html

References: