

Gene name: **IL6**.

Previous HGNC Symbols for IL6 Gene: **IFNB2**

External Ids for IL6 Gene

HGNC: [6018](#) NCBI Gene: [3569](#) Ensembl: [ENSG00000136244](#) OMIM®: [147620](#) UniProtKB/Swiss-Prot: [P05231](#)

NCBI Gene Summary : This gene encodes a cytokine that functions in inflammation and the maturation of B cells. In addition, the encoded protein has been shown to be an endogenous pyrogen capable of inducing fever in people with autoimmune diseases or infections. The protein is primarily produced at sites of acute and chronic inflammation, where it is secreted into the serum and induces a transcriptional inflammatory response through interleukin 6 receptor, alpha. The functioning of this gene is implicated in a wide variety of inflammation-associated disease states, including susceptibility to diabetes mellitus and systemic juvenile rheumatoid arthritis.

GeneCards Summary : IL6 (Interleukin 6) is a Protein Coding gene. Diseases associated with IL6 include [Kaposi Sarcoma](#) and [Rheumatoid Arthritis, Systemic Juvenile](#). Among its related pathways are [Apoptotic Pathways in Synovial Fibroblasts](#) and [MIF Mediated Glucocorticoid Regulation](#). Gene Ontology (GO) annotations related to this gene include *signaling receptor binding* and *growth factor activity*.

UniProtKB/Swiss-Prot Summary: IL6 is a potent inducer of the acute phase response. Rapid production of IL6 contributes to host defense during infection and tissue injury, but excessive IL6 synthesis is involved in disease pathology. In the innate immune response, is synthesized by myeloid cells, such as macrophages and dendritic cells, upon recognition of pathogens through toll-like receptors (TLRs) at the site of infection or tissue injury (Probable). In the adaptive immune response, it is required for the differentiation of B cells into immunoglobulin-secreting cells. Plays a major role in the differentiation of CD4(+) T cell subsets. Essential factor for the development of T follicular helper (Tfh) cells that are required for the induction of germinal-center formation. Required to drive naive CD4(+) T cells to the Th17 lineage. Also required for proliferation of myeloma cells and the survival of plasmablast cells (By similarity).

Cellular location: plasma membrane, extracellular, endoplasmic reticulum.

Interleukin-6 (IL-6) is a cytokine encoded by the IL6 gene, playing a pivotal role in immune response, inflammation, and hematopoiesis. It is produced by various cells, including macrophages, T cells, and fibroblasts, in response to infections and tissue injuries. IL-6 functions by binding to its receptor (IL-6R), initiating signaling pathways that lead to the production of acute-phase proteins and the differentiation of B and T cells.

In sepsis—a severe systemic inflammatory response to infection—IL-6 is a key mediator. Its levels rise significantly during the early stages of sepsis, correlating with the severity of the condition. Elevated IL-6 concentrations contribute to the acute-phase response, promoting the release of proteins like C-reactive protein (CRP) and fibrinogen, which are involved in inflammation and coagulation. However, excessive IL-6 production can lead to detrimental effects, including tissue damage and organ dysfunction, characteristic of severe sepsis and septic shock.

The diagnostic and prognostic utility of IL-6 in sepsis has been extensively studied:

