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Recombinant Human IL-6 Protein

Catalog Number:	631701
Size:	20 μg
Target Name:	IL-6, Interleukin-6, B cell stimulating factor-2 (BSF-2), Cytotoxic T cell differentiation factor (CDF), Hybrido
Regulatory Status:	RUO

PRODUCT DETAILS

Application:	Bioassay
Format:	Lyophilized from sterile PBS, pH 7.4.
Expression Host:	E.coli
Species:	Human
accession number:	NP_000591.1
Sources:	A DNA sequence encoding the mature form of human IL6 (NP_000591.1) (Val30-Met212) was expressed with an initial Met at the N-terminus.
Molecular Weight:	The recombinant human IL6 consists of 184 amino acids and predicts a molecular mass of 20.95 kDa. It migrates as an approximately 19.7 kDa band in SDS-PAGE under reducing conditions.
Affinity Tag:	None
Purity:	≥ 95 % as determined by SDS-PAGE
Endotoxin level:	
Protein Concentration:	Lyophilized
Storage and Handling:	Samples are stable for up to twelve months from date of receipt at -20℃ to -80℃. Store it under sterile conditions at -20℃ to -80℃. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.

BACKGROUND INFORMATION

Human interleukin-6 (IL-6) is a multifunctional cytokine produced by a wide range of cells, including macrophages, T cells, fibroblasts, and endothelial cells in response to infection or tissue injury. It plays a central role in immune regulation, inflammation, and hematopoiesis. IL-6 promotes differentiation of B cells into antibody-secreting plasma cells, supports T cell proliferation, and drives the acute phase response in the liver, leading to production of proteins such as C-reactive protein. It also influences metabolic and regenerative processes.

Structurally, IL-6 is a ~26 kDa glycoprotein composed of a four α-helix bundle typical of the cytokine family. IL-6 exerts its biological activity by binding to the IL-6 receptor (IL-6Rα), which exists in both membrane-bound and soluble forms. The IL-6/IL-6R complex then associates with the signal-transducing co-receptor gp130, triggering intracellular signaling cascades such as the JAK/STAT3, MAPK, and PI3K pathways. This dual signaling mechanism—classic signaling via membrane IL-6R and trans-signaling via soluble IL-6R—expands the range of IL-6-responsive cells.

Dysregulated IL-6 production is implicated in numerous diseases, including chronic inflammatory disorders (e.g., rheumatoid arthritis), autoimmune diseases, cytokine release syndrome, and cancer, where it can promote tumor growth and survival. Elevated IL-6 levels are also associated with severe infections and systemic inflammation. Therapeutically, targeting the IL-6 pathway has proven highly effective; monoclonal antibodies against IL-6 or IL-6R are widely used to treat inflammatory diseases and are also employed to manage cytokine storm syndromes. Conversely, IL-6 has been explored as a biomarker and, in some contexts, as a target to modulate immune and regenerative responses.

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