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Recombinant human IL-11 Protein

Catalog Number:	632501, 632502
Size:	20 μg, 100 μg
Target Name:	IL-11, interleukin-11, Adipogenesis Inhibitory Factor
Regulatory Status:	RUO

PRODUCT DETAILS

Application:	Bioassay
Format:	Lyophilized from sterile PBS, pH 7.4.
Expression Host:	E.coli
Species:	Human
accession number:	P20809-1
Sources:	A DNA sequence encoding the mature form of human IL11 (P20809-1) (Pro22-Leu199) was expressed.
Molecular Weight:	The recombinant human IL11 consists of 178 amino acids and predicts a molecular mass of 19.12 KDa.
Affinity Tag:	None
Purity:	≥ 90 % as determined by SDS-PAGE.
Endotoxin level:	< 1.0 EU per μg protein
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-11 (IL-11) is a pleiotropic cytokine belonging to the IL-6 family. It participates in hematopoiesis, platelet production, cell survival, tissue repair, and regulation of stromal-cell functions. IL-11 signaling occurs when IL-11 binds its specific cell-surface receptor, IL-11 receptor alpha (IL-11Rα), which then associates with the shared signal-transducing receptor gp130. This complex activates intracellular pathways including JAK/STAT3, ERK/MAPK, and PI3K/AKT, with effects that depend on the cell type and biological context.

Human IL-11 is a relatively small, secreted, non-glycosylated protein of approximately 19 kDa and 178 amino acids. Structurally, it adopts the characteristic four-α-helical bundle fold of IL-6-family cytokines. IL-11 first forms a 1:1 complex with IL-11Rα and subsequently recruits gp130. Two such complexes can assemble into a higher-order signaling complex that brings the intracellular regions of gp130 together and initiates signal transduction.

IL-11 has important physiological functions, but abnormal or sustained signaling has been implicated in disease. Elevated IL-11

activity is associated with fibrosis and fibroinflammatory disorders affecting the lung, heart, liver, kidney, and other tissues. It can promote fibroblast activation, extracellular-matrix production, tissue remodeling, and chronic inflammation. IL-11 signaling has also been implicated in several cancers, where it may support tumor-cell survival, proliferation, invasion, and progression.

These findings have made the IL-11 pathway an attractive therapeutic target. Experimental approaches include neutralizing antibodies against IL-11 or IL-11Rα, receptor antagonists, and engineered IL-11 variants that prevent productive receptor-complex formation. Recent studies have reported encouraging activity from IL-11Rα blockade in fibroinflammatory disease, including thyroid eye disease. Thus, inhibiting excessive IL-11 signaling may provide a strategy for treating fibrosis and selected inflammatory or cancer-related disorders while preserving the normal physiological functions of the cytokine.

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