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InnoCyto Inc.

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Recombinant Human IL-3 Protein

Catalog Number:	631101, 631102
Size:	20 µg, 100 µg
Target Name:	IL-3, Interleukin-3, Burst promoting activity, Eosinophil colony stimulating factor (Eo-CSF)
Regulatory Status:	RUO

PRODUCT DETAILS

Application:	Bioassay
Format:	Lyophilized from sterile PBS, pH 7.4.
Expression Host:	E.coli
Species:	Human
accession number:	NP_000579.2
Sources:	A DNA sequence encoding the human IL3 (NP_000579.2) (Ala20-Phe152) was expressed with an initial Met.
Molecular Weight:	The recombinant human IL3 consists of 134 amino acids and predicts a molecular mass of 15.2 kDa.
Affinity Tag:	None
Purity:	≥ 95 % as determined by SDS-PAGE. ≥ 95 % as determined by SEC-HPLC.
Endotoxin level:	
Protein Concentration:	Lyophilized
Storage and Handling:	Proteins 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-3 (IL-3) is a hematopoietic growth factor that regulates the survival, proliferation, and differentiation of early myeloid progenitor cells. It is primarily produced by activated T cells, mast cells, and natural killer (NK) cells in response to immune stimulation. IL-3 plays a supportive role in hematopoiesis by promoting the expansion of multipotent progenitors and contributing to the development of granulocytes, monocytes, eosinophils, basophils, and mast cells, thereby influencing both innate and adaptive immune responses.

Structurally, IL-3 is a single-chain α-helical cytokine belonging to the common β-chain (βc) cytokine family. It functions through binding to the interleukin-3 receptor, which consists of a unique α subunit (IL-3Rα, CD123) and a shared β common chain (βc, CD131) that is also used by GM-CSF and IL-5 receptors. Ligand binding induces receptor dimerization and activates intracellular signaling cascades, including JAK2/STAT5, MAPK, and PI3K/AKT pathways, which promote cell survival and proliferation. IL-3 itself acts as the primary ligand for this receptor system and has no major alternative ligands.

Dysregulated IL-3 signaling has been implicated in hematologic malignancies, particularly myeloproliferative disorders and acute leukemias, where it may contribute to abnormal expansion of myeloid cells. Elevated IL-3 activity can also exacerbate inflammatory responses by increasing the production of effector immune cells. Therapeutically, IL-3 has been explored experimentally to enhance hematopoietic recovery after chemotherapy or bone marrow transplantation, although its clinical use is limited due to toxicity and pleiotropic effects. Targeting IL-3Rα (CD123) is also being investigated in leukemia immunotherapy strategies.

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