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Recombinant Mouse IL-3 Protein

Catalog Number:	670901, 670902
Size:	10 μg, 50 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:	HEK293
Species:	Mouse
accession number:	NP_034686.2
Sources:	A DNA sequence encoding the mouse IL3 (NP_034686.2) (Met1-Cys166) was expressed.
Molecular Weight:	The recombinant mouse IL3 consists of 140 amino acids and predicts a molecular mass of 15.7 KDa. The molecular weight of this protein is around 19.5 KDa verified by SEC-MALS (Routinely tested).
Affinity Tag:	None
Purity:	> 90 % as determined by SDS-PAGE.
Endotoxin level:	< 0.1 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

Mouse interleukin-3 (IL-3) is a hematopoietic cytokine that regulates the proliferation, survival, differentiation, and activation of blood-forming cells. It is produced primarily by activated T lymphocytes and mast cells in response to immune stimulation. IL-3 supports the development of multiple hematopoietic lineages, including granulocytes, monocytes, basophils, eosinophils, and mast cells, and helps coordinate immune and inflammatory responses.

Mouse IL-3 is a secreted glycoprotein belonging to the class I hematopoietic cytokine family. Its mature form contains approximately 140 amino acids and adopts a characteristic four-helix bundle structure. The protein contains two intramolecular disulfide bonds and potential N-linked glycosylation sites, which may influence its biochemical properties. As a soluble cytokine, IL-3 binds to specific cell-surface receptors to initiate intracellular signaling rather than functioning as a membrane-bound ligand.

The mouse IL-3 receptor consists of an IL-3-specific alpha subunit (IL-3Rα, CD123) and a signaling beta subunit. Unlike humans, mice express two beta subunits: the common beta chain (βc, CD131), which is shared with the receptors for

granulocyte-macrophage colony-stimulating factor (GM-CSF) and interleukin-5 (IL-5), and an IL-3-specific beta chain (βIL-3). The latter can bind mouse IL-3 directly, although productive signaling requires the receptor alpha subunit. Receptor activation stimulates pathways such as JAK2/STAT5, PI3K/AKT, and MAPK, promoting cellular growth, survival, and functional activation.

Dysregulated IL-3 signaling contributes to allergic inflammation, asthma, immune-mediated disorders, and experimental models of inflammatory disease. IL-3 may also support the growth and survival of certain leukemic cells, making its receptor system relevant to hematologic cancer research. Therapeutically, IL-3 signaling is being investigated as a target for controlling excessive inflammation, while recombinant IL-3 has been studied for its ability to stimulate hematopoietic recovery after bone marrow suppression. In preclinical research, mouse IL-3 is valuable for studying cytokine biology, hematopoiesis, immune regulation, and potential cytokine-targeted therapies.

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