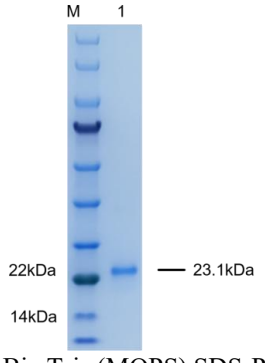
Mouse Interleukin 2 (IL2) Protein, Recombinant

1. For Sale

Product Name	Catalog #	Size
Mouse Interleukin 2 (IL2) Protein, Recombinant	P03I0308P-T3	10ug
		50ug
		500ug
		1mg

2. Product Description

Other Names	IL-2; TCGF; lymphokine
Protein & NCBI Number	P04351
Host	E.coli
Express Region	Met1-Gln169
Protein Sequence	MYSMQLASCVTLTLVLLVNSAPTSSSTSSSTAEAQQQQQQQQQQQHLEQLLMD LQELLSRMENYRNLKLPRMLTFKFYLPKQATELKDLQCLEDELGPLRHVLDLTQ SKSFQLEDAENFISNIRVTVVKLKGSDNTFECQFDDESATVVDFLRRWIAFCQSIIS TSPQ
Molecular Weight	The protein consists of 205 amino acids (including the fusion tag), with a predicted molecular weight of 23.1kDa, which matches the actual molecular weight.
Fusion Tag	6×His (C-terminus)
Purity	≥90% SDS-PAGE
Physical Property	Liquid
Components	0.01M PBS+20% glycerol, sterile solution
Storage & Stability	After aliquoting, the stability of the samples can be maintained for up to 6 months at -20°C to -80°C, avoiding repeated freeze-thaw cycles.
Applications	Antibody preparation, immunoassay (ELISA, WB), subcellular localization and interaction protein identification, etc.
Lead Time	5 to 10 business days; 2 to 3 days for stock products
Figure. SDS-PAGE	 Bis-Tris (MOPS) SDS-PAGE

3. Storage and Transportation

Transport at 2-8℃, product is stable for up to twelve months from date of receipt under sterile conditions at -20℃ to -80℃.

4. Notes

This product is for research use only. Please wear laboratory attire and disposable gloves when handling.

5. Background

Interleukin-2 (IL-2) exerts both immunosuppressive and immunostimulatory effects on cytotoxic effector cells by activating regulatory T cells (Tregs). These IL-2-mediated effects depend on distinct expression patterns of IL-2 receptors (IL-2R): CD8+T cells and natural killer (NK) cells express high levels of the dimeric IL-2Rβ(CD122) and IL-2Rγ(γc) chains, while Treg cells express high levels of IL-2Rα(CD25) along with intermediate levels of CD122 and γc.

IL-2 was the first cytokine to be molecularly cloned and is an essential T cell growth factor, required for T cell proliferation, effector cell generation, and memory cell development. IL-2 supports the development, survival, and functional activity of Treg cells, thereby exerting dual and opposing roles: maintain Treg cells to suppress immune responses while activating conventional T cells to promote immune responses..

Studies have demonstrated that certain IL-2 conformations preferentially target Treg cells by increasing dependency on CD25 binding while reducing interaction with CD122. Recent therapeutic strategies have emerged that utilize IL-2, IL-2 monoclonal antibodies, or IL-2 variants to enhance the number and function of Treg cell for the treatment of autoimmune diseases, while simultaneously addressing the ongoing challenge of minimizing the activation of effector T cells, memory T cells, NK cells, and other innate lymphoid cell populations.

6. References

1) Zhu J, Cote-Sierra J, Guo L, Paul WE. Stat5 activation plays a critical role in Th2 differentiation. Immunity. 2003 Nov;19(5):739-48.

2) Smith GA, Uchida K, Weiss A, Taunton J. Essential biphasic role for JAK3 catalytic activity in IL-2 receptor signaling. Nat Chem Biol. 2016 May;12(5):373-9. doi: 10.1038

3) Zhu J, Cote-Sierra J, Guo L, Paul WE. Stat5 activation plays a critical role in Th2 differentiation. Immunity. 2003 Nov;19(5):739-48.

4) Reya T, Bassiri H, Biancaniello R, Carding SR. Thymic stromal-cell abnormalities and dysregulated T-cell development in IL-2-deficient mice. Dev Immunol. 1998;5(4):287-302.