

DESCRIPTION

Source	Chinese Hamster Ovary cell line, CHO-derived human IL-3R alpha protein			
	Human IL-3RA (Thr19-Arg305) Accession # P26951.1	IEGRMD	Human IgG ₁ (Pro100-Lys330)	Avi-tag
	N-terminus		C-terminus	
N-terminal Sequence Analysis	Thr19 and Lys20			
Structure / Form	Biotinylated via Avi-tag			
Predicted Molecular Mass	61 kDa			

SPECIFICATIONS

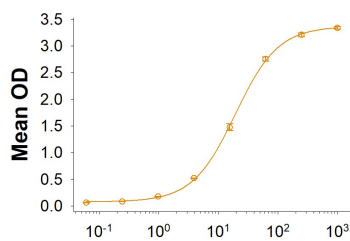
SDS-PAGE	83-93 kDa, under reducing conditions.
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Human IL-3 (Catalog # 203-IL) is immobilized at 0.5 µg/mL (100 µL/well), Biotinylated Recombinant Human IL-3R alpha/CD123 Fc Chimera Avi-tag (Catalog # AV111140) binds with an ED ₅₀ of 3.00-45.0 ng/mL.
Endotoxin Level	<0.50 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <ul style="list-style-type: none"> • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

DATA

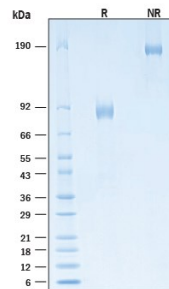
Binding Activity



Biotinylated Recombinant Human IL-3R alpha/CD123 Avi-tag (ng/mL)

Biotinylated Recombinant Human IL-3R alpha/CD123 Fc Chimera Avi-tag Protein Binding Activity. When Recombinant Human IL-3 (Catalog # 203-IL) is immobilized at 0.5 µg/mL (100 µL/well), Biotinylated Recombinant Human IL-3R alpha/CD123 Fc Chimera Avi-tag Protein (Catalog # AV111140) binds with an ED₅₀ of 3.00-45.0 ng/mL.

SDS-PAGE



Biotinylated Recombinant Human IL-3R alpha/CD123 Fc Chimera Avi-tag Protein SDS-PAGE. 2 µg/lane of Biotinylated Recombinant Human IL-3R alpha/CD123 Fc Chimera Avi-tag Protein (Catalog # AV111140) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 83-93 kDa and 170-190 kDa, respectively.

BACKGROUND

IL-3 receptor chain alpha (IL-3R alpha) also known as CD123, is a member of the type 1 cytokine receptor family of proteins expressed mainly by activated T cells or mast cells (1-3). IL-3R alpha is a 60-70 kDa receptor component that binds IL-3 with low affinity and forms one-half of the IL-3 receptor complex. IL-3R alpha associates with the 130-140 kDa non-ligand binding IL-3R beta for high-affinity binding to IL-3 to form the heterodimeric receptor complex (4). IL-3R alpha consists of an extracellular domain (ECD) with an N-terminal Ig-like C2-type domain and a cytokine-binding domain containing two fibronectin type-III domains with a WSXWS motif, a helical transmembrane segment and a cytoplasmic domain (3). Within the mature ECD, human IL-3R alpha shares 30% and 31% amino acid sequence identity with mouse and rat IL-3R alpha, respectively. An isoform lacking the N-terminal domain of ECD has been identified in mouse and human (5, 6). IL-3 stimulates the proliferation and differentiation of hemopoietic cells including the pluripotent hematopoietic stem cells as well as various lineage-committed cells (7). IL-3R alpha is expressed on multiple cell types, including endothelial cells, monocytes, eosinophils, basophils plus mast cells, and plasmacytoid CD4+ T cells (8). IL-3R alpha is over-expressed in acute myeloid leukemia and this is associated with a poor prognosis in AML (9). Our Avi-tag Biotinylated human IL-3R alpha Fc chimera features biotinylation at a single site contained within the Avi-tag, a unique 15 amino acid peptide. Protein orientation will be uniform when bound to streptavidin-coated surface due to the precise control of biotinylation and the rest of the protein is unchanged so there is no interference in the protein's bioactivity.

References:

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2. Langer, J.A. *et al.* (2004) *Cytokine Growth Factor Rev.* **15**:33.
3. Broughton, S.E. *et al.* (2014) *Acta Crystallogr F Struc Biol Commun.* **70**:358.
4. Broughton, S.E. *et al.* (2014) *Cell Reports.* **8**:410.
5. Chen, J. *et al.* (2009) *J. Biol. Chem.* **284**:5763.
6. Hamming, O.J. *et al.* (2012) *J Biol Chem.* **287**:9454.
7. Ogorochi, T. and A. Miyajima (1994) in *Guidebook to Cytokines and Their Receptors*, N.A. Nicola, ed. Oxford University, New York p. 40.
8. Michalska, A. *et al.* (2020) *Postepy Dermatol Alergol.* **37**:299.
9. Testa, U. *et al.* (2002) *Blood* **100**:2980.