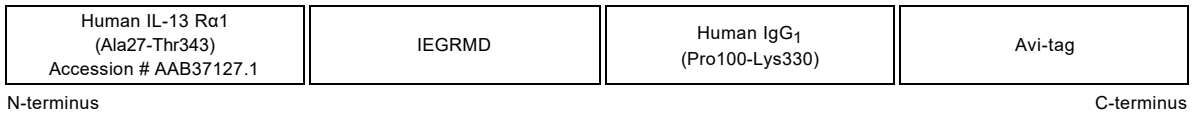
Biotinylated Recombinant Human IL-13 Rα1 Fc Chimera Avi-tag

Catalog Number: AVI10436

DESCRIPTION

Source

Chinese Hamster Ovary cell line, CHO-derived human IL-13 R alpha 1 protein



N-terminal Sequence Analysis	Ala27
Structure / Form	Biotinylated via Avi-tag
Predicted Molecular Mass	65 kDa

SPECIFICATIONS

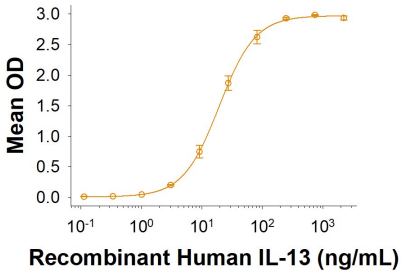
SDS-PAGE	93-103 kDa, under reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Biotinylated Recombinant Human IL-13 Rα1 Fc Chimera Avi-tag (Catalog # AVI10436) is immobilized at 1 µg/mL (100 µL/well), Recombinant Human IL-13 (Catalog # 213-ILB) binds with an ED_{50} of 10-80 ng/mL.
Endotoxin Level	<0.10 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	Supplied as a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Shipping	The product is shipped with dry ice or equivalent. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 6 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after opening. • 3 months, -20 to -70 °C under sterile conditions after opening.

DATA

Binding Activity



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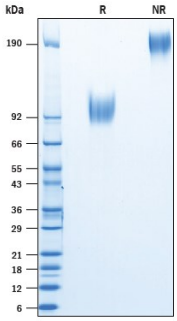
Binding Activity



2 µg/lane of Biotinylated Recombinant Human IL-13 Rα1 Fc Chimera Avi-tag (Catalog # AVI10436) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 93-103 kDa and 186-206 kDa, respectively.

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BACKGROUND

IL-13 RA1, also known as IL-13R and IL-13 RA, is a type I transmembrane protein. Its cDNA encodes a 427 aa precursor protein, with 322 aa extracellular domain, 24 aa transmembrane domain and 60 aa intracellular domain. Within the extracellular domain, human IL-13 RA1 shares 75% and 74% homology with mouse and rat IL-13 RA1, respectively. IL-13 RA1 expresses ubiquitously in all tissues with the highest level in heart, liver, skeletal muscle and ovary (1). As a receptor, IL-13 RA1 can function alone or as a heterodimer with IL-4R. Although both IL-4 and IL-13 signal through IL-4R/IL-13 RA1 heterodimer, there are distinct differences. IL-4 binds IL-4R with high affinity then binds IL-13 RA1 with low affinity. In contrast, IL-13 binds IL-13 RA1 with decent affinity, then binds IL-4R with high affinity (2). In addition, the N-terminal Fibronectin type III domain (D1) of IL-13 RA1 is only required for the binding of IL-13 not IL-4 (3,4). After binding to IL-4 or IL-13, the Tyr residues in the cytoplasmic domain of IL-13 RA get phosphorylated and then activate signaling proteins including Jak1, Tyk1, Tyk2, IRS-1, and STAT6 (5, 6). Alternative splicing generates soluble iL-13 RA1 missing the transmembrane domain (7). It not only functions as a decoy receptor for IL-13, but also is able to reduce fasting blood glucose, mediated by IL-4 (8). Higher expression of IL-13 RA1 are found in several cancers, often associated with poor prognosis in patients (9-11). Our Avi-tag Biotinylated human IL-13 RA1 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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