

DESCRIPTION

Source	Chinese Hamster Ovary cell line, CHO-derived human IL-12 R beta 1 protein Cys24-Glu540, with a C-terminal 6-His tag Accession # P42701.1
N-terminal Sequence Analysis	Cys24
Predicted Molecular Mass	58 kDa

SPECIFICATIONS

SDS-PAGE	62-79 kDa, under reducing conditions.
Activity	Measured by its binding ability in a functional ELISA. Recombinant Human IL-12 R β 1 His-tag binds to Recombinant Human IL-12 (Catalog # 219-IL) with an ED ₅₀ of 3.00-30.0 ng/mL.
Endotoxin Level	<0.10 EU per 1 μ g 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 μ m filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 250 μ g/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <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

Recombinant Human IL-12 R β 1 His-tag Protein Binding Activity. Measured by its binding ability in a functional ELISA. Recombinant Human IL-12 R β 1 His-tag (Catalog # 11310-B1) binds to Recombinant Human IL-12 (Catalog # 219-IL) with an ED₅₀ of 3.00-30.0 ng/mL.

SDS-PAGE

Recombinant Human IL-12 R β 1 His-tag Protein SDS-PAGE. 2 μ g/lane of Recombinant Human IL-12 R β 1 His-tag Protein (Catalog # 11310-B1) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 62-79 kDa.

BACKGROUND

IL12RB1 (Interleukin-12 receptor subunit beta-1; IL-12 R β 1), also known as CD212, is a type I transmembrane protein with similarities with the gp130/G-CSF R subgroup in the cytokine receptor superfamily. IL12RB1, along with IL12RB2, are two receptor subunits for IL12. Individually, the two subunits bind IL12 with low affinity, but when combined they form a high-affinity receptor complex (1). Human IL12RB1 contains 5 fibronectin domains in the extracellular domain (ECD), a single transmembrane domain and a box 1 motif in the cytoplasmic region. The mature ECD of human IL12RB1 shares 51% amino acid identity with mouse and rat IL12RB1. Interleukin 12 (IL12) is a pro-inflammatory cytokine and key mediator of cellular-immunity and induces the differentiation of Th1 cells from precursor T helper cells (2). Binding of IL12RB1, along with IL12RB2, is required for IL12 signal transduction and subsequent activity (1,2). Expression of IL12RB1 been detected in activated T cells, NK cells and B cells (1). The expression of IL12RB2 is more restricted and appears to be limited to Th2 cells. IL12RB1 has been reported to interact with IL23R to form the functional receptor complex for IL23 and probably activation of the Jak-Stat signaling cascade (3).

References:

1. Robinson R.T. (2015) Cytokine. **71**:348.
2. Rosenzweig S.D. and Holland S.M. (2005) Immunol. Rev. **203**:38.
3. Zou J. *et al.* (1997) J. Biol Chem, **272**:6073.