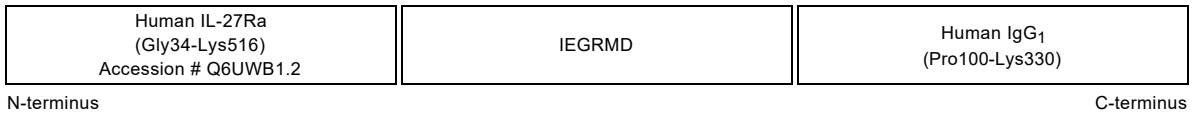
Biotinylated Recombinant Human IL-27 Rα/WSX-1/TCCR Fc Chimera

Catalog Number: BT1479

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived human IL-27 R alpha/WSX-1/TCCR protein



N-terminal Sequence Analysis	Gly34
Structure / Form	Disulfide-linked homodimer Biotinylated via amines
Predicted Molecular Mass	79

SPECIFICATIONS

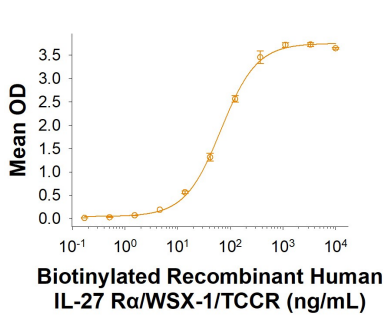
SDS-PAGE	95-110 kDa, under reducing conditions
Activity	Measured by its binding ability in a functional ELISA. Biotinylated Recombinant Human IL-27 Rα/WSX-1/TCCR Fc Chimera (Catalog # BT1479) binds Recombinant Human IL-27 (Catalog # 2526-IL/CF) with an ED_{50} of 12.0-160 ng/mL.
Endotoxin Level	<0.10 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	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	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 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.

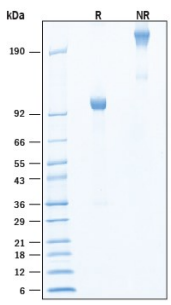
DATA

Binding Activity



Biotinylated Recombinant Human IL-27 Rα/WSX-1/TCCR Fc Chimera Protein Binding Activity. Biotinylated Recombinant Human IL-27 Rα/WSX-1/TCCR Fc Chimera Protein (Catalog # BT1479) binds Recombinant Human IL-27 (Catalog # 2526-IL/CF) with an ED_{50} of 12.0-160 ng/mL.

SDS-PAGE



Biotinylated Recombinant Human IL-27 Rα/WSX-1/TCCR Fc Chimera Protein SDS-PAGE. 2 µg/lane of Biotinylated Recombinant Human IL-27 Rα/WSX-1/TCCR Fc Chimera Protein (Catalog # BT1479) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 95-110 kDa and 190-220 kDa, respectively.

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BACKGROUND

IL-27 Rα (also known as WSX-1 and TCCR) is a 96 - 100 kDa member of the type I, group 2 cytokine receptor family (1, 2, 3, 4, 5, 6). Mature IL-27 Rα is a type I transmembrane glycoprotein that contains a 484 amino acid (aa) extracellular region, a 21 aa transmembrane segment and a 99 aa cytoplasmic domain. Consistent with type I cytokine receptors, the extracellular region contains four positionally conserved cysteine residues, a WSxWS motif (for receptor folding and ligand binding), and three fibronectin type III repeats. The intracellular domain contains a "box-1" motif that may be involved with Janus kinases (3). One potential alternate splice form has been hypothesized that involves a 58 aa addition to the cytoplasmic domain and, based on mouse, a soluble 33 kDa splice form that shows a 20 aa substitution for aa 257 - 636 may also occur in human (3, 7). The human IL-27 Rα extracellular region shares 63% amino acid identity with the mouse IL-27 Rα extracellular domain (2, 3). IL-27 Rα is expressed in mast cells, endothelial cells, NK cells, macrophages, monocytes, B cells, dendritic cells, and naïve T cells (1, 2, 4, 8). Typical of other class I cytokine receptor chains, the ligand binding IL-27 Rα molecule is known to heterodimerize with a signal-transducing subunit (gp130) to form a functional IL-27 receptor (9, 10). In addition, IL-27 Rα is reported to complex with CNTFRα and gp130 form a humanin receptor on neurons (7, 11), and to complex with gp130 and IL-6 R to form a receptor for a p28:CLF heterodimeric cytokine on lymphocytes (12). Studies using IL-27 Rα/WSX-1$^{-/-}$ mice reveal that IL-27 has the ability to suppress T cell activity during infection, and to mediate an inhibition of both type 1 and type 2 T cell immunity (4, 13, 14). In particular, IL-27 is known to act on naïve T cells, blocking their differentiation into a Th17 phenotype. Notably, cells committed to a Th17 phenotype, although they express a functional IL-27 receptor, are unresponsive to the effects of IL-27 (15). Activated T cells that are CD4^{+} and CD8^{+}, and which express the IL-27 receptor, can be induced by IL-27 to form a double-positive CD25^{+} FoxP3^{-} IFN-γ plus IL-10 secreting phenotype that both promotes and suppresses the inflammatory response (16).

References:

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