

DESCRIPTION

Source	Chinese Hamster Ovary cell line, CHO-derived human IL-27 R alpha/WSX-1/TCCR protein		
	Human IL-27 R α /WSX-1/TCCR (Gln33-Lys516) Accession # Q6UWB1.2	Avi-tag	6-His tag
	N-terminus		C-terminus
N-terminal Sequence Analysis	Gln33; deduced from Gly34 after deblocking		
Structure / Form	Biotinylated via Avi-tag		
Predicted Molecular Mass	57 kDa		

SPECIFICATIONS

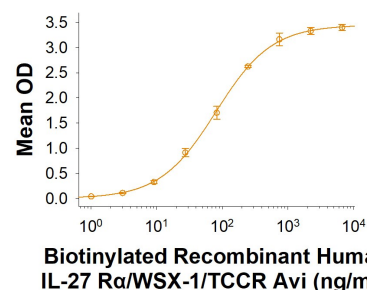
SDS-PAGE	81-92 kDa, under reducing conditions.
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Human IL-27 (Catalog # 2526-IL/CF) is immobilized at 4 μ g/mL (100 μ L/well), Biotinylated Recombinant Human IL-27 R α /WSX-1/TCCR Avi-tag His-tag (Catalog # AV111270) binds with an ED ₅₀ of 30.0-360 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.

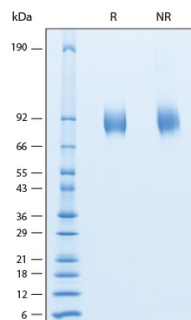
DATA

Binding Activity



Recombinant Human IL-27 R α /WSX-1/TCCR Avi-tag His-tag Protein Binding Activity.
When Recombinant Human IL-27 Protein (Catalog # [2526-IL/CF](#)) is immobilized at 4 μ g/mL (100 μ L/well), Biotinylated Recombinant Human IL-27 R α /WSX-1/TCCR Avi-tag His-tag Protein (Catalog # AV111270) binds with an ED₅₀ of 30.0-360 ng/mL.

SDS-PAGE



Recombinant Human IL-27 R α /WSX-1/TCCR Avi-tag His-tag Protein SDS-PAGE. 2 μ g/lane of Recombinant Human IL-27 R α /WSX-1/TCCR Avi-tag His-tag Protein (Catalog # AV111270) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 81-92 kDa.

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). Our Avi-tag Biotinylated human IL-27 Rα 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:

1. Villarino, A.V. *et al.* (2004) *J. Immunol.* **173**:715.
2. Chen, Q. *et al.* (2000) *Nature* **407**:916.
3. Sprecher, C.A. *et al.* (1998) *Biochem. Biophys. Res. Commun.* **246**:82.
4. Artis, D. *et al.* (2004) *J. Immunol.* **173**:5626.
5. Yoshida, H. & Y. Miyazaki (2008) *Int. J. Biochem. Cell Biol.* **40**:2379.
6. Yoshida, H. & M. Yoshiyuki (2008) *Immunol. Rev.* **226**:234.
7. Hashimoto, Y. *et al.* (2009) *Biochem. Biophys. Res. Commun.* **389**:95.
8. Holscher, C. *et al.* (2005) *J. Immunol.* **174**:3534.
9. Pflanz, S. *et al.* (2004) *J. Immunol.* **172**:2225.
10. Scheller, J. *et al.* (2005) *Biochem. Biophys. Res. Commun.* **326**:724.
11. Hashimoto, Y. *et al.* (2009) *Mol. Biol. Cell* **20**:2864.
12. Crabe, S. *et al.* (2009) *J. Immunol.* **183**:7692.
13. Villarino, A. *et al.* (2003) *J. Immunol.* **170**:645.
14. Hamano, S. *et al.* (2003) *Immunity* **19**:657.
15. El-behi, M. *et al.* (2009) *J. Immunol.* **183**:4957.
16. Fitzgerald, D.C. *et al.* (2007) *Nat. Immunol.* **8**:1372.