

**DESCRIPTION**

<b>Source</b>	Chinese Hamster Ovary cell line, CHO-derived human IL-31RA protein		
	Human IL-31RA (Ala20-Ser516) Accession # AAS86444.1	Avi-tag	6-His tag
	N-terminus		C-terminus
<b>N-terminal Sequence</b>	Ala20		
<b>Analysis</b>			
<b>Structure / Form</b>	Biotinylated via Avi-tag		
<b>Predicted Molecular Mass</b>	61 kDa		

**SPECIFICATIONS**

<b>SDS-PAGE</b>	90-105 kDa, under reducing conditions.
<b>Activity</b>	Measured by its binding ability in a functional ELISA. Recombinant Human IL-31RA Avi-tag His-tag (Catalog # AVI2769) binds Human Recombinant Human IL-31 (Catalog # 2824-IL/CF) with an ED <sub>50</sub> of 0.100-1.20 µg/mL.
<b>Endotoxin Level</b>	<0.50 EU per 1 µg of the protein by the LAL method.
<b>Purity</b>	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

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

**DATA**

<p><b>Binding Activity</b></p> <p><b>Recombinant Human IL-31RA Avi-tag His-tag Protein Binding Activity.</b> Recombinant Human IL-31RA Avi-tag His-tag Protein (Catalog # AVI2769) binds Human Recombinant Human IL-31 (Catalog # 2824-IL/CF) with an ED<sub>50</sub> of 0.100-1.20 µg/mL.</p>	<p><b>SDS-PAGE</b></p> <p><b>Recombinant Human IL-31RA Avi-tag His-tag Protein SDS-PAGE.</b> 2 µg/lane of Recombinant Human IL-31RA Avi-tag His-tag Protein (Catalog # AVI2769) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 90-105 kDa, under reducing conditions. .</p>
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**BACKGROUND**

The interleukin-31 receptor A subunit (IL-31 RA), also known as gp130-Like Monocyte Receptor (GLM-R or GPL), is a ~100 kDa type I transmembrane glycoprotein that is classified as being a type I cytokine receptor (1, 2). A heterodimeric complex of IL-31 RA and the oncostatin M receptor (OSM-R) functions as the signaling receptor for IL-31 (3). Both subunits are inducibly expressed throughout the myelomonocytic lineage and are upregulated by interferon- $\gamma$  and bacterial lipopolysaccharides (1-3). IL-31 RA is also expressed on keratinocytes, dorsal root ganglia neurons, and variably on lung epithelial cells (3-6). The 732 amino acid (aa) IL-31 RA contains a 19 aa signal sequence, a 500 aa extracellular domain (ECD), a 21 aa transmembrane domain and a 192 aa cytoplasmic domain. The ECD shares 60%, 58%, 73% and 70% aa identity with mouse, rat, canine and bovine IL-31 RA ECD, respectively. Human IL-31 receptors do not respond to mouse IL-31 (7). The ECD contains five fibronectin type III domains; the first two contain four conserved cysteine residues and a WSXWS motif common to type I cytokine receptors (2). Twelve alternately spliced human IL-31 RA isoforms are known and range in size from 356-745 amino acids. A long (745 aa) and a short (560 aa) transmembrane form are the predominant forms, and many cell lines express both forms (8). The long form, like the 732 aa form, signals by recruiting STAT3, 5 or 1, while the short form does not recruit STATs and inhibits IL-31 signaling. The ratio of these forms and their co-expression with OSM-R determines a cell's response to IL-31 (8). In both humans and transgenic mice, IL-31 from skin-homing Th2 cells may contribute to the pruritis (itching) associated with nonatopic dermatitis, especially in infected skin (3, 9, 10). Our Avi-tag Biotinylated human IL-31RA His-tag 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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