

**DESCRIPTION**

Source	Mouse myeloma cell line, NS0-derived			
	Human IL-11 Ra (Cys26 - Val363) Accession # Q5VZ80	IEGRMD	Human IgG <sub>1</sub> (Pro100 - Lys330)	6-His tag
N-terminus				C-terminus

**N-terminal Sequence Cys26**
**Analysis**
**Structure / Form** Disulfide-linked homodimer

**Predicted Molecular Mass** 64.2 kDa (monomer)

**SPECIFICATIONS**

<b>SDS-PAGE</b>	75-80 kDa, reducing conditions
<b>Activity</b>	Measured by its ability to bind rhIL-11 in a functional ELISA with an estimated $K_D < 5$ nM.
<b>Endotoxin Level</b>	<0.10 EU per 1 $\mu$ g of the protein by the LAL method.
<b>Purity</b>	>80%, by SDS-PAGE under reducing conditions and visualized by silver stain.
<b>Formulation</b>	Lyophilized from a 0.2 $\mu$ m filtered solution in PBS. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

<b>Reconstitution</b>	Reconstitute at 100 $\mu$ g/mL in sterile 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>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <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>

**BACKGROUND**

Interleukin-11 receptor alpha (IL-11 Ra, IL-11 Ra1) is a 49 kDa type I transmembrane protein that is a member of the gp130 subfamily of the hematopoietic cytokine receptor family (1-4). Human IL-11 Ra cDNA encodes 422 amino acids (aa) including a 23 aa signal peptide, a 347 aa extracellular domain (ECD) that contains a C2 type Ig-like domain, two fibronectin type III domains, two potential glycosylation sites and a WSXWS motif, a 21 aa transmembrane region and a short (31 aa) cytoplasmic domain (4). Human IL-11 Ra shares 84%, 82%, 90% and 86% aa sequence identity with mouse, rat, equine and bovine IL-11 Ra, respectively. In humans, a 390 aa isoform that lacks the cytoplasmic domain has been described (4). IL-11 Ra first binds IL-11 with low affinity, then forms a high affinity receptor when complexed with gp130 homodimers (1, 3). IL-11 Ra is widely expressed in adults, embryos and embryonic stem cells (4-6). Deletion in female mice causes faulty decidualization and lack of decidual NK cells and results in infertility (7-9). IL-11 is anti-apoptotic for oligodendrocytes, and lack of IL-11 Ra increases the severity of experimental autoimmune encephalitis (10, 11). IL-11 Ra is also anti-apoptotic for colonic epithelia, and increased IL-11 signaling may be a factor in inflammation-associated gastrointestinal cancer development (3, 12). IL-11 Ra enhances osteoclast differentiation and bone remodeling, but inhibits adipocyte differentiation (1, 2). Recombinant soluble IL-11 Ra confers IL-11 responsiveness to cells expressing gp130, while in cells expressing transmembrane IL-11 Ra and gp130, soluble IL-11 Ra acts as an IL-11 antagonist (13-15).

**References:**

1. Sims, N.A. and N.C. Walsh (2010) BMB Reports **43**:513.
2. White, U.A. and J.M. Stephens (2011) Curr. Pharm. Des. **17**:340.
3. Kiessling, S. *et al.* (2004) J. Biol. Chem. **279**:10304.
4. Cherel, M. *et al.* (1995) Blood **86**:2534.
5. Hilton, D.J. *et al.* (1994) EMBO J. **13**:4765.
6. Davidson, A.J. *et al.* (1997) Stem Cells **15**:119.
7. Paiva, P. *et al.* (2009) Cytokine Growth Factor Rev. **20**:319.
8. Robb, L. *et al.* (1998) Nat. Med. **4**:303.
9. Ain, R. *et al.* (2004) Dev. Dyn. **231**:700.
10. Gurfein, B.T. *et al.* (2009) J. Immunol. **183**:4229.
11. Zhang, J. *et al.* (2011) J. Immunol. **187**:1129.
12. Putoczki, T. and M. Ernst (2010) J. Leukoc. Biol. **88**:1109.
13. Curtis, D.J. *et al.* (1997) Blood **90**:4403.
14. Baumann, H. *et al.* (1996) J. Immunol. **157**:284.
15. Karow, J. *et al.* (1996) Biochem. J. **318**:489.