

**DESCRIPTION**

<b>Source</b>	<i>Spodoptera frugiperda</i> , Sf 21 (baculovirus)-derived		
	Rat IL-23 p40 (Met23 - Ser335) Accession # NP_072133	IGSGSSRGGSGGGSGGGGSK	Rat IL-23 p19 (Leu20 - Ala196) Accession # NP_569094
	N-terminus		C-terminus

**N-terminal Sequence** Met23

**Analysis**

**Predicted Molecular Mass** 58.3 kDa

**SPECIFICATIONS**

<b>SDS-PAGE</b>	66 kDa, reducing conditions
<b>Activity</b>	Measured by its ability to induce IL-17 secretion by mouse splenocytes. Aggarwal, S. <i>et al.</i> (2003) J. Biol. Chem. <b>278</b> :1910. The ED <sub>50</sub> for this effect is typically 0.1-0.5 ng/mL.
<b>Endotoxin Level</b>	<1.0 EU per 1 µg of the protein by the LAL method.
<b>Purity</b>	>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in Tris-Citrate and NaCl with BSA as a carrier protein. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

<b>Reconstitution</b>	Reconstitute at 10 µg/mL in sterile PBS containing at least 0.1% human or bovine serum albumin.
<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>	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <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 23 (IL-23) is a heterodimeric cytokine composed of two disulfide-linked subunits, a p19 subunit that is unique to IL-23, and a p40 subunit that is shared with IL-12 (1 - 5). The p19 subunit has homology to the p35 subunit of IL-12, as well as to other single chain cytokines such as IL-6 and IL-11. The p40 subunit is homologous to the extracellular domains of the hematopoietic cytokine receptors. The rat p19 cDNA encodes a 196 amino acid (aa) residue precursor protein with a putative 19 aa signal peptide and 177 aa mature protein. The mature rat p19 protein shares 88%, 78%, 76%, 75%, 71%, and 70% aa sequence identity with mouse, human, canine, equine, guinea pig, and bovine, respectively. Activated macrophages and dendritic cells express p19 and p40 concurrently to produce IL-23 (1, 4). The functional IL-23 receptor complex consists of two receptor subunits, the IL-12 receptor beta 1 subunit (IL-12Rβ1) and the IL-23-specific receptor subunit (IL-23R) (3). IL-23 and IL-12 have overlapping but distinct biological activities. IL-12 drives development of Th1 cells and induces production of IFN-γ by NK cells; IL-23 induces proliferation of Th17 cells and CD4<sup>+</sup> memory T cells distinct from Th1 which produce IL-17, a potent proinflammatory cytokine (2). IL-23 also drives IL-17 production by NK cells and neutrophils (6). While both IL-12 and IL-23 pathways respond to infectious agents, the IL-23 - IL-17 immune pathway induces the earliest recruitment of neutrophils to the site of infection while the more classic host defense and cytotoxic response is stimulated by IL-12 (5). Dysregulation of the IL-23 - IL-17 immune pathway has a key role in organ-specific autoimmune inflammatory tissue destruction (2, 7).

**References:**

1. Oppmann, B. *et al.* (2000) Immunity **13**:715.
2. McKenzie, B.S. *et al.* (2006) Trends Immunol. **27**:17.
3. Parham, C. *et al.* (2002) J. Immunol. **168**:5699.
4. Cua, D.J. *et al.* (2003) Nature **421**:744.
5. Aggarwal, S. *et al.* (2003) J. Biol. Chem. **278**:1910.
6. Langrish, C.L. *et al.* (2004) Immunol. Rev. **202**:96.
7. Murphy, C.A. *et al.* (2003) J. Exp. Med. **198**:1951.