

## Recombinant Human IL-23 (carrier-free)

<b>Catalog# / Size</b>	574106 / 100 µg 574102 / 10 µg 574104 / 25 µg
<b>Regulatory Status</b>	RUO
<b>Other Names</b>	alpha subunit p19 and Interleukin-12 subunit beta p40
<b>Description</b>	Interleukin 23 (IL-23) is a member of the IL-6 family of cytokines, and it is comprised of two subunits, p19 and p40. The p19/p40 heterodimer is stabilized by a disulfide bond. The p40 subunit is shared by IL-23 and IL-12 cytokines. p19 mRNA is expressed in endothelial cells and polarized T cells; p40 is not expressed by these cells. Therefore, the availability of functional IL-23 is limited by the expression of p40 and not p19. IL-23 exerts its biological activities through the interaction with a heterodimeric receptor complex composed of IL-12Rb1 and IL-23R. IL-23 activates Janus kinase (JAK)/signal transducer and activator of transcription (STAT) signaling molecules. JAK2 is constitutively associated with the IL-23R chain, and binding of IL-23 to its receptor leads to phosphorylation of STAT1, STAT3, STAT4, and STAT5.

### Product Details

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<b>Source</b>	Human IL-23 consists of two subunits linked via a disulfide bond: P19 (Accession# NP_057668: Ala21- Pro189) and P40 (Accession# NP_002178.2: Ile 23-Ser 328). Human IL-23 was expressed in insect cells.
<b>Molecular Mass</b>	The total predicted molecular weight is 53.3 Da. The non-reduced protein migrates at approximately 60 kD and the DTT-reduced protein produces two bands at approximately 19 kD and 40 kD by SDS-PAGE.
<b>Purity</b>	>95%, as determined by Coomassie stained SDS-PAGE.
<b>Formulation</b>	0.22 µm filtered protein solution is in PBS.
<b>Endotoxin Level</b>	Less than 0.01 ng per µg cytokine as determined by the LAL method.
<b>Concentration</b>	10 and 25 µg sizes are bottled at 100 µg/mL. 100 µg size is lot-specific and bottled at the concentration indicated on the vial. To obtain lot-specific concentration, please enter the lot number in our <a href="#">Concentration and Expiration Lookup</a> or <a href="#">Certificate</a>
<b>Storage &amp; Handling</b>	Unopened vial can be stored between 2°C and 8°C for up to 2 weeks, at -20°C for up to six months, or at -70°C or colder until the expiration date. For maximum results, quick spin vial prior to opening. The protein can be aliquoted and stored at -20°C or colder. Stock solutions can also be prepared at 50 - 100 µg/mL in appropriate sterile buffer, carrier protein such as 0.2 - 1% BSA or HSA can be added when preparing the stock solution. Aliquots can be stored between 2°C and 8°C for up to one week and stored at -20°C or colder for up to 3 months. <b>Avoid repeated freeze/thaw cycles.</b>
<b>Activity</b>	ED <sub>50</sub> =0.4 - 2.0 ng/ml, corresponding to a specific activity of 0.5 - 2.5 x 10 <sup>6</sup> units/mg as determined by mouse splenocyte IL-17A secretion, which is induced by hIL-23 in a dose dependent manner.
<b>Application</b>	<a href="#">Bioassay</a>
<b>Application Notes</b>	Have you considered our mammalian-expressed human IL-23? It has >twofold higher potency and is offered at a better value. See our recommended products: <a href="#">Recombinant Human IL-23 (mammalian expressed, carrier-free)</a> or discuss with our <a href="#">technical experts</a> .  BioLegend carrier-free recombinant proteins provided in liquid format are shipped on blue-ice. Our comparison testing data indicates that when handled and stored as recommended, the liquid format has equal or better stability and shelf-life compared to commercially available lyophilized proteins after reconstitution. Our liquid proteins are verified in-house to maintain activity after shipping on blue ice and are backed by our <a href="#">100% satisfaction guarantee</a> . If you have any concerns, contact us at <a href="mailto:tech@biolegend.com">tech@biolegend.com</a> .

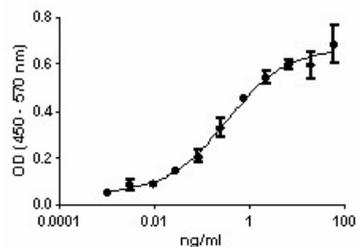
### Product Citations

1. Liu Y, *et al.* 2018. JCI Insight. 3:. [PubMed](#)

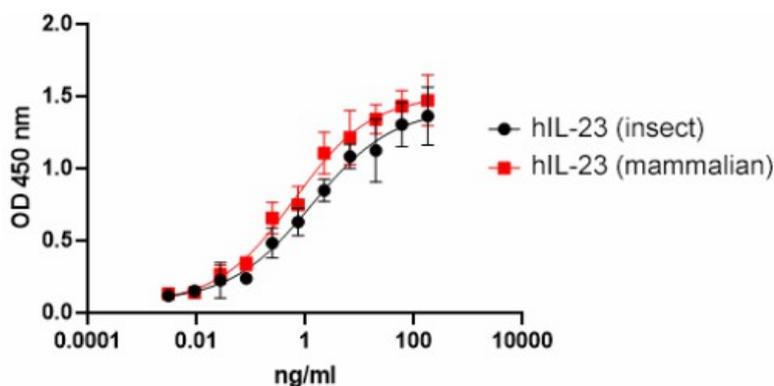
## Antigen Details

<b>Structure</b>	Heterodimer
<b>Distribution</b>	IL-23 is highly expressed by activated dendritic cells, macrophages, and epidermal Langerhans cells.
<b>Function</b>	IL-23 promotes Th17 responses in vivo, and it is important for the survival and population expansion of Th17 cells. IL-23 induces proliferation of memory T cells and the induction of IL-17A and IL-17F in these cells. In conjunction with IL-1, IL-23 is sufficient to induce naïve human T cells to produce IL-17A, IL-17F, IL-22, IL-26, IFN- $\gamma$ , CCL20/MIP-3 $\alpha$ , and the transcription factor ROR $\gamma$ t. PGE2 favors the production of IL-23 and inhibit IL-12 in dendritic cells. PGE2 synergizes with IL-23 in expanding Th17 cells from purified memory CD4+ T cells activated in the absence of accessory cells. IL-23 induces IFN-gamma production from T cells treated with PHA. In addition, IL-23 plays a key role in the pathogenesis of autoimmune and chronic inflammatory disorders. This role is supported by the identification of IL-23 receptor (IL-23R) susceptibility alleles associated with inflammatory bowel disease, psoriasis, and ankylosing spondylitis.
<b>Interaction</b>	Memory T cells, Inflammatory macrophages, NK cells, dendritic cells, and monocytes.
<b>Ligand/Receptor</b>	IL-23 binds to L-12Rb1 and IL-23R
<b>Biology Area</b>	Immunology, Stem Cells
<b>Molecular Family</b>	Cytokines/Chemokines
<b>Antigen References</b>	<ol style="list-style-type: none"> <li>1. Oppmann B, <i>et al.</i> 2000. <i>Immunity</i> 13:715.</li> <li>2. Aggarwal S, <i>et al.</i> 2003. <i>J. Biol. Chem.</i> 278:1910.</li> <li>3. Piskin G, <i>et al.</i> 2006. <i>J. Immunol.</i> 176:1908.</li> <li>4. McGeachy MJ, <i>et al.</i> 2007. <i>Nat. Immunol.</i> 8:1390.</li> <li>5. Wilson NJ, <i>et al.</i> 2007. <i>Nat. Immunol.</i> 8:950.</li> <li>6. Bonifac B, <i>et al.</i> 2008. <i>Immunol. Rev.</i> 226:132.</li> <li>7. Chizzolini C, <i>et al.</i> 2008. <i>Blood</i> 112:3696.</li> <li>8. Buonocore S, <i>et al.</i> 2010. <i>Nature</i> 464:1371.</li> </ol>
<b>Gene ID</b>	<a href="#">3593</a> <a href="#">51561</a>

## Product Data



Human IL-23 induces IL-17A in mouse splenocytes.



Comparison of mammalian-expressed (cat. no. 787904) and insect-expressed human IL-23 (cat. no. 574104) demonstrates a greater than twofold higher potency for the mammalian-expressed protein as measured by induction of IL-17A production in mouse splenocytes.

	hIL-23 (insect)	hIL-23 (mammalian)
ED <sub>50</sub>	1.310	0.6282

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