Recombinant Mouse IL-12 (p70) (carrier-free)

Catalog# / Size	577006 / 100 µg 577008 / 500 µg 577002 / 10 µg 577004 / 25 µg
Regulatory Status	RUO
Other Names	Natural killer cell stimulatory factor (NKSF), cytotoxic lymphocyte maturation factor (CLMF).
Description	IL12 (p70) is a disulfide-linked heterodimer composed of unrelated p40 (glycosylated) and p35 subunits. IL-12 acts as a growth factor for activated human T and NK cells, enhance the lytic activity of human NK cells, and stimulate the production of IFNg, by resting human PBMC. IL-12R is formed by two chains, IL-12Rβ1 and IL-12Rβ2. IL-12Rβ1 is associated with the Janus kinase (Jak) Tyk2 and binds IL-12 p40; IL-12Rβ2 is associated with Jak2 and binds either the heterodimer or the p35 chain. Signaling through the IL-12 receptor complex induces phosphorylation, dimerization, and nuclear translocation of several signal transducer and activator of transcription (STAT) family members (STAT1, 3, 4, 5), but most of the biological responses to IL-12 have been attributed to STAT4.

Product Details

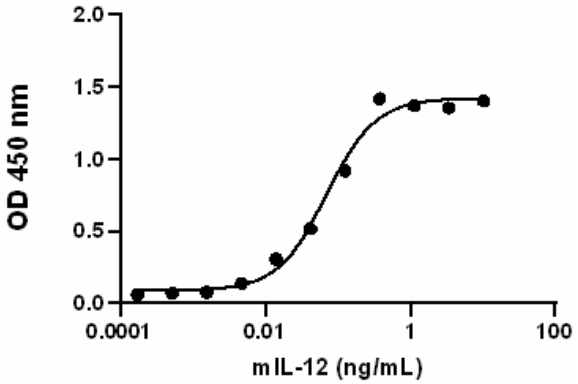
Source	Expressed in Sf9 cells as secreted protein (p40: Accession# NM_008352, p35: Accession#NM_008351).
Molecular Mass	The mIL-12 consists of two subunits linked via a disulphide bond: P40 (Accession# P43432: Met23-Ser335) and P35 (Accession# NP_032377: Arg23-Ala215). The total predicted molecular weight is 57.48 kD. The non-reduced protein migrates at approximately 55 kD and the DTT-reduced protein produces two bands at approximately 40 kD and 24 kD by SDS-PAGE.
Purity	95%, as determined by Coomassie stained SDS-PAGE.
Formulation	The protein was 0.22 µm filtered in 10 mM NaH2PO4, 150 mM NaCl, pH 7.2.
Endotoxin Level	Less than 0.01 ng per µg cytokine as determined by the LAL method.
Concentration	10 and 25 µg sizes are bottled at 200 µg/mL. 100 µg size and larger sizes are lot-specific and bottled at the concentration indicated on the vial. To obtain lot-specific concentration, please enter the lot number in our Concentration and Expiration Lookup or Certificate of Analysis online tools.
Storage & Handling	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. **Avoid repeated freeze/thaw cycles.**
Activity	Mouse IL-12 induces INFγ production in mouse splenocytes in a dose dependent manner. The ED_{50} = 0.01 to 0.1 ng/ml.
Application	Bioassay
Application Notes	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 100% satisfaction guarantee. If you have any concerns, contact us at tech@biolegend.com.
Additional Product Notes	Get a 50% discount on this product when purchased in our Activation Bundles. Restrictions apply. Learn more…
Product Citations	1. Xu Y, *et al.* 2019. JCI Insight. 4:5. PubMed 2. Huang A, *et al.* 2019. JCI Insight. 4. PubMed

3. Ramstead AG, *et al.* 2020. Cell Rep. 30:2889. PubMed
4. Gomez–Lopez N, *et al.* 2019. J Immunol. 203:1793. PubMed
5. Bremser A, *et al.* 2015. PLoS One. 10: 0137393. PubMed
6. Everts B, *et al.* 2016. J Exp Med. 213: 35 - 51. PubMed
7. Bao K, *et al.* 2016. J Immunol. 197(11):4371-4381. PubMed
8. Montes de Oca M, *et al.* 2020. PLoS Pathog. 16:e1008994. PubMed
9. Hsu TS, *et al.* 2020. Nat Commun. 3.934027778. PubMed
10. Mohammadpour H, *et al.* 2020. JCI Insight. 5:00. PubMed

Antigen Details

Structure	Heterodimer
Function	IL-12 is produced by myeloid cells and DCs in response to microbial stimuli, such as those mediated by bacteria, fungi, viruses, and intracellular parasites. IL-12 drives Th1 differentiation and IFNγ production. IL-12 acts as a bridge between innate resistance and adaptive immunity. IL-12 production by activated APC is suppressed by IL-10. In addition, IL-12 production by macrophages is regulated by TNFα and nitric oxide. TLR-4 and TLR-9 can cooperate to increase selectively IL-12 production by murine dendritic cells.
Interaction	Cells of hematopoietic origin express the IL-12R, including NK cells, activated T-cells and dendritic cells.
Ligand/Receptor	IL-12 receptor is a heterodimer containing IL-12Rβ1 and IL-12Rβ2 subunits.
Cell Sources	IL-12 is produced by monocytes, macrophages, neutrophils, dendritic cells and B cells. In the CNS, astrocytes and microglia are the main sources of IL-12.
Biology Area	Immunology, Innate Immunity
Molecular Family	Cytokines/Chemokines
Antigen References	1. Schoenhaut DS, *et al.* 1992. *J. Immunol.*. 148:3433. 2. Manetti R, *et al.* 1994. *J. Exp. Med*. 179:1273. 3. Ireland D, *et al.*2005. *Viral Immunol.* 18:397. 4. Moreno SE, *et al.* 2006. *J. Immunol.* 177:3218. 5. Lyakh L, *et al.* 2008. *Immunol. Rev.*. 226:112. 6. Theiner G, *et al.* 2008. *Mol. Immunol*. 45:244.
Gene ID	16159 16160

Product Data



Mouse IL-12 induces INFγ production in mouse splenocytes in a dose dependent manner. The ED_{50} = 0.01 to 0.1 ng/ml

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