

Recombinant Human IL-12/IL-23 (p40) (ELISA Std.)

Catalog# / Size	572109 / 4 pack
Regulatory Status	RUO
Other Names	Interleukin-12 p40, Natural killer cell stimulatory factor (NKSF), T-cell stimulating factor (TSF)
Description	<p>Bioactive IL-12 is a potent regulator of cell-mediated immune responses and key mediator of Th1 cell development. Bioactive IL-12 is secreted by activated B lymphocytes, dendritic cells and macrophages as a 70 kD heterodimeric glycoprotein comprised of disulfide-bonded 35 kD and 40 kD subunits. The p40 protein is also a subunit of IL-23 (p60). The disulfide-linked p40 homodimer can bind to IL-12 receptors and antagonize the activities of bioactive IL-12. IL-12 p40 monomer is secreted in vast excess of IL-12 p70 heterodimer; IL-12 p40 monomer has no activity and is antagonistic to IL-12 p70 with only 1/10th the activity of p40 homodimer. Recombinant human IL-12 p40 monomer contains 306 amino acids.</p> <p><u>Cytokine detection</u> IL-12, IL-23 and IL-35 share common subunits, utilizing combinations of p40, p19 and p35 proteins. Caution must be used when selecting antibodies and assays when specific identification, measurement, as well as activation state discrimination, is required.</p> <ol style="list-style-type: none"> 1. Active IL-12 consists of two subunits: p40 + p35. 2. p40 can also exist as a monomer (IL-12 p40) or a homodimer (IL-12 p80). 3. Besides contributing to IL-12, p40 is also found in IL-23, a heterodimer of p40 and p19. 4. Similarly, p35 not only contributes to IL-12, but is also found in the heterodimer IL-35 (p35 and EB13). <p>Note that assays using antibodies specific for the p40 subunit will be unable to discriminate between the active IL-12, monomeric p40, dimeric p40, and IL-23; likewise, assays using p35 detection alone will pick up both IL-12 (heterodimer) and IL-35.</p>

Product Details

Source	Insect cells, approximately 40 kD
Formulation	Lyophilized in sterile-filtered PBS, pH 7.2, containing 1% BSA, 0.09% sodium azide, and protease inhibitors.
Concentration	Lot-specific (to obtain lot-specific concentration, please enter the lot number in our Concentration and Expiration Lookup or Certificate of Analysis online tools.)
Storage & Handling	Upon receipt, store unopened vials between 2°C and 8°C immediately and use within 12 months from date of receipt. Prior to use, reconstitute the lyophilized powder with 0.2 ml of PBS containing a carrier protein (e.g., 1% BSA, protease free), pH7.4. Re-cap vial, vortex. Allow the reconstituted standard to sit at room temperature for 15 minutes, vortex again to mix completely. The reconstituted standard stock solution can be aliquoted into polypropylene vials and stored at -70°C for up to one month. Do not re-use diluted standards. Use a manual defrost freezer and avoid repeated freeze thaw cycles.
Application	ELISA
Recommended Usage	Each lot of this protein is quality control tested by ELISA assay . For use as an ELISA standard, a standard curve comprised of doubling dilutions from 4000 pg/ml to 62.5 pg/ml is suggested. It is recommended that the reagent be titrated for optimal performance for each application.
Application Notes	This IL-12/IL-23 (p40) protein is useful as a standard for a human IL-12/IL-23 (p40) sandwich ELISA, using unlabelled C8.3 antibody (catalog #501702) for capture and biotinylated C8.6 antibody (catalog #508802) for detection.

Antigen Details

Structure	Cytokine; heterodimer with p35 subunit
Bioactivity	Monomeric human IL-12 p40 has little or no IL-12 antagonistic activity.

Cell Sources	Dendritic cells, monocytes/macrophages, B cells, T cells
Cell Targets	T cells, NK cells, PBL
Receptors	IL-12R β 1 binds p40; dimeric with IL-12R β 2 binds p35 (CD212)
Biology Area	Stem Cells, Immunology, Innate Immunity
Molecular Family	Cytokines/Chemokines
Antigen References	<ol style="list-style-type: none"> 1. Fitzgerald K, et al. (eds) 2001. The Cytokine Facts Book. Academic Press San Diego. 2. Quesniaux V. 1992. Research Immun. 143:385. 3. Trinchieri G, et al. 1992 Prog Growth Factor Res. 4:355. 4. Trinchieri G, et al. 1993 Immunol Today. 14:335.
Regulation	Downregulated by IL-10; homodimeric p40 antagonistic to functional p70 heterodimer; p40 monomer has no function; p40 subunit in common with IL-23
Gene ID	3593

Related Protocols

[Sandwich ELISA Protocol](#)

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