full spectrum cell analysis
eBioscience

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Product Information

Contents: Carrier-Free Recombinant Mouse IL-27 (Interleukin-27; EBI3/p28)
Catalog Number: 34-8271
Sizes: 100 ug, 500 ug
Formulation: Sterile liquid; 20 mM NaH_2PO_4, pH 6.0, 0.6M NaCl, with no carrier or stabilizer. 0.22 uM filtered.
Storage Conditions: For greatest stability, keep concentration of primary stock at or above 10 µg/ml. For long term storage, aliquot into polypropylene vials (volumes of 20 µl or greater) and store at or below -80°C. Avoid repeated freeze/thaw cycles.
Handling Conditions: For best recovery, always quick-spin vial prior to opening. For dilution of current stock, always include carrier protein (1% BSA or 10% FBS) in the buffered saline diluent.
Source: Mouse EBI3 (met 1-pro 228; accession # BC008209) linked through a (gly-gly-gly-gly-ser)3 to mature P28/IL-30 (phe 29-ser 234; accession # NM_145636) tagged at the C-terminal with thr-gly-his10 was expressed in human 293 cells.
Molecular Mass: After removal of the secretion signal the mature EBI3-linker-mature P28-His10 protein has a predicted molecular mass of approximately 49,000. On non-reducing and reducing SDS-PAGE the linked protein migrates as a 55 kDa protein due to glycosylation.
Purity: Greater than 98%, as determined by SDS-PAGE
Endotoxin Level: Less than 0.01 ng/ug cytokine, as determined by the LAL assay.
Bioactivity: Measured in a bioassay of IL-27-mediated inhibition of IL-2 production by mouse splenocytes activated with immobilized anti-CD3 and soluble anti-CD28 antibodies (Villarino, A.V., et al. 2006. J. Immunol. 176: 237). The ED_{50} for this is typically 50 ng/ml, corresponding to a specific activity of 2.0×10^4 U/mg.

Available Formats of This Product

Cat. No.	Format	Excite (nm)	Emit (nm)	Reported Applications
14-8271	Mouse IL-27 Recombinant Protein	N/A	N/A	BA
34-8271	Mouse IL-27 Recombinant Protein Carrier-Free	N/A	N/A	BA

Flow Cytometry Product Notes:
Test Sizes: To accommodate multicolor flow cytometry, eBioscience is in the process of reducing test size volumes from 20 µl to 5 µl. Please check your antibody vial for the recommended test size.
Fluorochrome Replacements: eBioscience is in the process of replacing all Pacific Blue® and APC-Alexa Fluor® 750 conjugated products with eFluor™ 450 and APC-eFluor™ 780 conjugated products, respectively.

Custom Product Requests

Need a custom product? Download the Custom Product Request Form and submit completed form to customs@ebioscience.com.

Questions? Please consult our answers to frequently asked questions at http://www.ebioscience.com/faq.

Description

IL-27, a member of the IL-12 family, is a heterodimeric protein consisting of the p40-related protein Epstein-Barr virus-induced gene 3 (EBI3) non-covalently linked to an IL-12p35-related protein, p28 (also known as IL-30). IL-27 is produced by activated APCs and mature dendritic cells. IL-27 exerts its activities on NK cells and naïve CD4+ T cells; mRNA expression analysis of IL-27 receptor components (WSX-1/TCCR and gp130) suggests that IL-27 may also target other cells, including mast cells and monocytes. Binding of IL-27 to WSX-1/gp130 activates JAK1, STAT1, and STAT3 and STAT1/3 phosphorylation. WSX-1/TCCR-deficient mice develop impaired Th1 responses and are more susceptible to infection with L. monocytogenes suggesting that Th1 responses require IL-27. Although activation of WSX-1 is required for the initiation of Th1 responses, it is not necessary for maintaining Th1 responses. IL-27 alone is not able to induce the differentiation of CD4+ T cells into IFN-γ-producing cells, suggesting a role for IL-27 as an initial activator of Th1 responses. An important effect of IL-27 in initiating Th1 responses is the induction of the Th1-specific transcription factor T-bet as well as the suppression of the Th2-specific transcription factor GATA-3. T-bet plays a critical role in Th1 differentiation by its ability to maintain IL-12Rβ2 expression following CD4+ T cell activation.

Recent studies indicate that IL-27 has a potent antitumor activity. In vitro, IL-27 has been found to act directly on naïve CD8 cells, generating CTL with enhanced granzyme B expression. In vivo, IL-27 has been reported to augment CTL activity, inhibit tumor growth, and induce complete regression of primary and metastatic neuroblastoma tumors.

Applications Reported

For research use only, not for diagnostic or therapeutic use. The recombinant mouse IL-27 (EBI3/p28) has been reported useful for bioassay.

Applications Tested

This recombinant mouse IL-27 (EBI3/p28) has been tested in bioassay for inhibition of IL-2 production by mouse splenocytes activated with immobilized anti-CD3 and soluble anti-CD28 antibodies (Villarino, A.V., et al. 2006. J. Immunol. 176: 237). The ED_{50} for this is typically 50 ng/ml, corresponding to a specific activity of 2.0×10^4 U/mg.

References

Stumhofer, J.S., et al. 2006. IL-27 negatively regulates the development of IL-17-producing T helper cells during chronic inflammation of the central nervous system. Nature Immunol. 7: 937-45.
Villarino, A., et al. 2006. IL-27 Limits IL-2 Production during Th1 Differentiation. J. Immunol. 176: 237 - 247.
Salcedo, R., et al. 2004. IL-27 mediates complete regression of orthotopic primary and metastatic murine neuroblastoma tumors: role for CD8+ T cells. J. Immunol. 173: 7170-7182.
Morishima, N., et al. 2005. Augmentation of effector CD8+ T cell generation with enhanced granzyme B expression by IL-27. J. Immunol. 175: 1686-1693.
Owaki, T., et al. 2005. A role for IL-27 in early regulation of Th1 Differentiation. J. Immunol. 175: 2191-2200.

Related Products

Cat. 88-7231 Mouse IL-23 (Interleukin-23, IL23) ELISA Ready-SET-Go! Kit (with Pre-Coated Plates)
Cat. 14-7271 Affinity Purified anti-mouse IL-27 (Interleukin-27, EBI3)) (clone eBioSonic)
Cat. 14-8231 Recombinant Mouse IL-23 (Interleukin-23, IL23)