

# Cytokines

## Human Recombinant IL-33



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Catalog # 78043.1  
78043

10 µg  
100 µg

## Product Description

Interleukin 33 (IL-33) is a pro-inflammatory cytokine from the IL-1 family. It binds to ST2 receptor and activates NF-κB and MAPK pathways. IL-33 is expressed by epithelial cells, smooth muscle cells, and fibroblasts in various tissues and organs, as well as resting basophils, mast cells, eosinophils, natural helper cells, group 2 innate lymphoid cells, dendritic cells, and activated macrophages (Schmitz et al.; Yasuda et al.). It contributes to allergic inflammation by stimulating production of the cytokines IL-4, IL-5, and IL-13, and stimulates host defense against microbial and viral infections (Liew; Yasuda et al.). In the central nervous system, IL-33 is produced by endothelial cells and astrocytes. It induces proliferation of microglia and mediates production of pro-inflammatory cytokines (Yasuoka et al.).

## Product Information

**Alternative Names:** IL-1F11, Interleukin-33, NP-HEV

**Accession Number:** O95760

**Amino Acid Sequence:** MSITGISPIT EYLA SLSTYN DQSITFALED ESYEIYVEDL KKDEKKDKVL LSYYESQHPS NESGDGVDGK MLMVTLSP TK DFWLHANNKE HVELHKCEK PLPDQAFFVL HNMHSNCVSF ECKTDPGVFI GVKDNHLALI KVDSS ENLCT ENILFKLSET

**Predicted Molecular Mass:** 18.1 kDa

**Species:** Human

**Cross Reactivity:** Mouse

**Formulation:** Lyophilized from a sterile-filtered aqueous solution containing sodium phosphate, pH 7.5.

**Source:** E. coli

## Specifications

**Activity:** The specific activity is  $\geq 2 \times 10^6$  units/mg ( $EC_{50} \leq 0.5$  ng/mL) as determined by a cell proliferation assay using D10S cells co-stimulated with anti-CD3.

**Purity:**  $\geq 95\%$

**Endotoxin Level:** Measured by kinetic Limulus amoebocyte lysate (LAL) analysis and is  $\leq 1$  EU/µg protein.

## Preparation and Storage

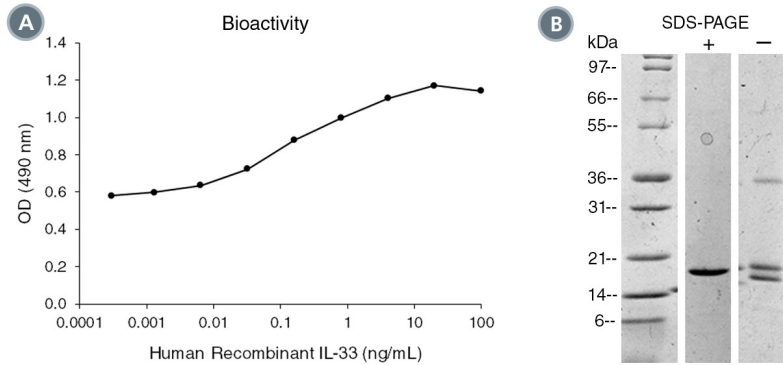
**Storage:** Store at -20°C to -80°C.

**Stability:** Stable as supplied for 12 months from date of receipt.

**Preparation:** Centrifuge vial before opening. Reconstitute the product in sterile water to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex.

OPTIONAL: After reconstitution, if product will not be used immediately, dilute with concentrated bovine serum albumin (BSA) to a final BSA concentration of 0.1%. The effect of storage of stock solution on product performance should be tested for each application. As a general guide, do not store at 2 - 8°C for more than 1 month or at -80°C for more than 3 months. Avoid repeated freeze-thaw cycles.

## Data



(A) The biological activity of Human Recombinant IL-33 was tested by its ability to promote the proliferation of D10S cells in low serum medium containing no other cytokines. Cell proliferation was measured after 67 hours of culture using a fluorometric assay method. The EC50 is defined as the effective concentration of the growth factor at which cell proliferation is at 50% of maximum. The EC50 in the above example is 0.1 - 0.15 ng/mL.

(B) 1  $\mu$ g of Human Recombinant IL-33 was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant IL-33 has a predicted molecular mass of 18.1 kDa.

## Related Products

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## References

- Liew FY. (2012) IL-33: a Janus cytokine. *Ann Rheum Dis* 71 Suppl 2(Suppl\_2): i101-4.
- Schmitz J et al. (2005) IL-33, an interleukin-1-like cytokine that signals via the IL-1 receptor-related protein ST2 and induces T helper type 2-associated cytokines. *Immunity* 23(5): 479-90.
- Yasuda K et al. (2012) Contribution of IL-33-activated type II innate lymphoid cells to pulmonary eosinophilia in intestinal nematode-infected mice. *Proc Natl Acad Sci USA* 109(9): 3451-6.
- Yasuoka S et al. (2011) Production and functions of IL-33 in the central nervous system. *Brain Res* 1385: 8-17.

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