Miltenyi Biotec

Human IL-33
research grade

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1. Description

Products

Human IL-33, research grade.

Recombinant human interleukin 33.

Content in µg	Order no.
10	130-109-378
25	130-109-379

Biological activity

The ED_{50} is ≤2.5 ng/mL corresponding to an activity of ≥4×10^5 U/mg.

▲ **Note:** The ED_{50} is determined by proliferation assay using mouse D10S cells.

Primary structure

Single non-glycosylated polypeptide chain without N-terminal methionine (172 amino acid residues).

Molecular mass

19.4 kDa.

Source

Produced in *E. coli*.

Product format

Lyophilized from a filtered (0.2 µm) buffer solution.

Stabilizer

Mannitol and trehalose.

Purity

>95% as determined by SDS-PAGE analysis.

Endotoxin level

Low endotoxin (<1.0 EU/µg cytokine) as determined by Limulus Amebocyte Lysate (LAL) assay.

Storage

Lyophilized Human IL-33, research grade should be stored at –20 °C. The expiration date is indicated on the vial label. Upon reconstitution aliquots should be stored at –20 °C or below. Avoid repeated freeze-thaw cycles.

Reconstitution

It is recommended to reconstitute lyophilized Human IL-33, research grade with deionized sterile-filtered water to a final concentration of 0.1–1.0 mg/mL in a minimal volume of 100 µL. Further dilutions should be prepared with 0.1% bovine serum albumin (BSA) or human serum albumin (HSA) in phosphate-buffered saline.

1.1 Background information

Interleukin 33 (IL-33) is a cytokine belonging to the IL-1 family. Similarly to other IL-1 family members, IL-33 exists in both an un-cleaved (full-length) and a cleaved form, although the proteins responsible of IL-33 maturation are still under investigation. IL-33 is expressed by several cell types including epithelial cells, endothelial cells, and fibroblasts, and binds a specific receptor, also known as IL1RL1, which is expressed on TH2 cells and mast cells. Signaling via IL1RL1 involves receptor accessory protein (IL1RAP) and leads to the expression of type 2 cytokines, such as IL-4, IL-5, IL-13. Via enhancing the activation of TH2 cells, mast cells, and eosinophils, IL-33 sustains the humoral response and contributes to adverse TH2 reactions, such as dermatitis, asthma, and allergies. Besides its primary involvement in the immune system modulation, IL-33 is also expressed in blood epithelium and smooth muscle and plays a role in bone protection. It is unclear whether also the immature form of IL-33 could be biologically active after release, such as during necrosis. Moreover, it was suggested that the full length protein could co-localize in the nucleus and act as transcriptional factor. Recombinant Human IL-33 corresponds to the mature form of human IL-33.

1.2 Applications

Human IL-33 can be used for a variety of applications, including:

- TH2 cell activation and maintenance.
- Investigation of intracellular signaling of IL-1 family and apoptotic/necrotic pathways.
- *In vitro* inhibition of osteoclast differentiation.

Optimal concentration for a specific application should be determined by a dose-response experiment.

Refer to www.miltenyibiotec.com for all data sheets and protocols. Miltenyi Biotec provides technical support worldwide. Visit www.miltenyibiotec.com for local Miltenyi Biotec Technical Support contact information.

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