Recombinant Human IL-10

Catalogue Number: REC108

Specifications and Use

Source

- A DNA sequence encoding mature human IL-10 (Ser19 – Asn178; Accession NM_000572) with N-terminal 6X His-tag was expressed in *E.coli.*

Molecular Mass

- 19 kDa, reducing condition

Purity

- 90%, as determined by SDS-PAGE and visualized by silver stain.

Endotoxin Level

- < 1.0 EU per 1 μg of the protein as determined by LAL method.

Activity

- Measured in a cell proliferation assay using MC/92 mouse mast cells. ThompsonSnipes, L. *et al*. (1991) J. Exp. Med. **173**:507.
- The ED_{50} for this effect is typically 0.15-0.75 ng/mL.

Formulation

- Supplied as lyophilized powder.
- Reconstitute in PBS
- Centrifuge the vial before opening to prevent loss of the powder.

Storage

- Samples are stable up to 1 year from date of receipt at -20˚C.
- Upon thawing, this protein can be stored under sterile conditions at 2-8˚C for two weeks or at -70˚C in a manual defrost freezer for three months without detectable loss of activity.
- Avoid repeated freeze-thaw cycles. Samples are recommended to be aliquot in small volumes and frozen for multiple uses.

Background

Interleukin 10, also known as cytokine synthesis inhibitory factor (CSIF), is the charter member of the IL- 10 family of α-helical cytokines that also includes IL-19, IL-20, IL-22, IL-24, and IL-26/AK155 (1, 2). IL-10 is secreted by many activated hematopoietic cell types as well as hepatic stellate cells, keratinocytes, and placental cytotrophoblasts (25). Mature human IL-10 shares 72%-86% amino acid sequence identity with bovine, canine, equine, feline, mouse, ovine, porcine, and rat IL-10. Whereas human IL-10 is active on mouse cells, mouse IL-10 does not act on human cells (6, 7). IL-10 is a 178 amino acid molecule that contains two intrachain disulfide bridges and is expressed as a 36 kDa noncovalently associated homodimer (6, 8, 9). The IL-10 dimer binds to two IL-10 Rα/IL-10R1 chains, resulting in recruitment of two IL-10 Rβ/IL-10R2 chains and activation of a signaling cascade involving JAK1, TYK2, and STAT3 (10). IL-10Rβ does not bind IL-10 by itself but is required for signal transduction (1). IL-10Rβ also associates with IL-20Rα, IL-22Rα, or IL-28 Rα to form the receptor complexes for IL-22, IL-26, IL-28, and IL-29 (11-13). IL-10 is a critical molecule in the control of viral infections and allergic and autoimmune inflammation (14 16). It promotes phagocytic uptake and Th2 responses but suppresses antigen presentation and Th1 proinflammatory responses (2).

References

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