Recombinant Human IL-17E/IL-25

Catalog Number: 1258-IL

DESCRIPTION

Source	*E. coli*-derived Tyr33-Gly177, with an N-terminal Met Accession # Q9H293
N-terminal Sequence Analysis	Met
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	17 kDa (monomer)

SPECIFICATIONS

Activity	Measured by its ability to induce CXCL1/GROα secretion in HT-29 human colon adenocarcinoma cells. The ED_{50} for this effect is typically 0.25-1.5 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>97%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in Acetonitrile and TFA with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in sterile 4 mM HCl containing at least 0.1% human or bovine serum albumin.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

The Interleukin-17 (IL-17) family of proteins are immunoregulatory cytokines that share a conserved cysteine-rich region. IL-17E, which is also known as IL-25, promotes Th2-biased immune responses. This is in contrast to other IL-17 family members which promote Th1- and Th17-biased inflammation. IL-25 is an important mediator of allergic reactions and protection against intestinal parasites (1, 2). Mature human IL-25 shares 80% amino acid sequence identity with mouse and rat IL-25 (3, 4). During helminth infections and allergic reactions, IL-25 is locally up-regulated in intestinal and airway epithelial cells, atopic dermatitis skin lesions, and local Th2 cells, eosinophils, and basophils (4-9). It binds to IL-17 RB but also requires IL-17 RA to exert its activity (3, 8, 10). IL-25 acts on a variety of cell types which respond with increased production of Th2 cytokines (*e.g.* IL-4, IL-5, IL-13) and reduced production of Th1 and Th17 cytokines (*e.g.* IFN-γ, IL-12, IL-23, IL-17A, IL-17F) (4-6, 8, 9, 11-15). Airway IL-25 can be activated by MMP-7, a protease that is up-regulated in airway epithelium in response to allergen exposure (16). Cleaved IL-25 shows enhanced binding to IL-17 RB and stronger induction of Th2 cytokines (16). The Th2 cytokines, in turn, trigger expansion of Th2 memory cells and anti-inflammatory M2 macrophages, increased eosinophil mobilization and activation, and dendritic cell migration (4, 6, 9, 13). These actions promote protective anti-helminth immune responses (4, 5) as well as allergic inflammation and airway hyperreactivity (11). The IL-25 induced suppression of Th1 and Th17 cytokines limits Th17 cell expansion and disease pathology in autoimmunity and colitis (12, 15). IL-25 also promotes vascular endothelial cell proliferation and assembly into tubular structures (7). It supports the integrity of the blood-brain barrier and limits $CD4^+$ T cell infiltration into the brain (17).

References:

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