Recombinant Human IL-26/AK155 Dimer

Catalog Number: 1870-IL

DESCRIPTION

Source	*E. coli*-derived Lys22-Gln171, with an N-terminal Met Accession # Q9NPH9.1
N-terminal Sequence Analysis	Met
Structure / Form	Disulfide-linked homodimer and a small amount of monomer (no more than 10%)
Predicted Molecular Mass	17.7 kDa (monomer)

SPECIFICATIONS

Activity	Measured by its ability to induce IL-10 secretion in COLO 205 human colorectal adenocarcinoma cells. Hor, S. *et al.* (2004) J. Biol. Chem. **279**:33343. The ED_{50} for this effect is typically 0.04-0.2 µg/mL.
Endotoxin Level	<1.0 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Supplied as a 0.2 µm filtered solution in NaH_2PO_4, NaCl and Glycerol with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Shipping	The product is shipped with dry ice or equivalent. 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 opening.

BACKGROUND

IL-26 was originally cloned from herpesvirus saimiri (HVS)-transformed T-cells and named AK155 (1). It is a member of the IL-10 family of class II cytokines that signal via heterodimeric receptor complexes composed of two type I transmembrane receptor subunits (2). The human IL-26 gene has been mapped to chromosome 12q15. It encodes a 171 amino acid polypeptide with a 21 amino acid signal peptide. In addition to HVS-transformed T cells, IL-26 is also expressed in other virus transformed T cell lines, fresh peripheral mononuclear cells, activated NK cells and T cells. A mouse homologue of human IL-26 has not been identified. IL-26 binds with high-affinity to the heterodimeric complex consisting of the ligand-binding IL-20 Rα and non ligand-binding IL-10 Rβ (3). Activation of the receptor complex results in rapid phosphorylation of STAT1 and STAT3. Although the IL-26 receptor complex is highly specific for IL-26 and is not activated by other class II cytokines, the individual subunits of the IL-26 receptor complex are components in receptor complexes for other class II cytokines (1). IL-20 Rα can form dimers with IL−20 Rβ to function as signaling receptors for IL-19, IL-20, and IL-24. IL-10 Rβ can complex with IL-10 Rα, IL-22 R, and IL-28 Rα to transduce signals for IL-10, IL-22, and the three novel IFNs (IL-28A, IL-28B and IL-29), respectively. The physiological functions of IL-26 remain to be determined.

IL-26 was reported to be a homodimer in solution (1). *E. coli*-derived IL-26 produced by R&D Systems contains disulfide-linked homodimers and monomers. Both the pure monomeric and dimeric IL-26 can bind directly to IL-20 Rα and induce STAT activation in COLO-205 cells (4). Besides IL-20 Rα, R&D Systems IL-26 preparations have also been shown to bind IL−20 Rβ. The significance of this receptor-ligand interaction has not been investigated.

References:

1. Knappe. A. *et al.* (2000) J. Virology **74**:3881.
2. Renauld, J.-C. (2003) Nature Reviews Immunology **3**:667.
3. Sheikh, F. *et al.* (2004) J. Immunol. **172**:2006.
4. Unpublished data (2003) R&D Systems, Inc.