Recombinant Feline IL-12/IL-23 p40

Catalog Number: 2117-FL

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived Ile23-Ser329 (Glu167Gly), with a C-terminal 10-His tag Accession # O02744
N-terminal Sequence Analysis	Ile23
Predicted Molecular Mass	36 kDa

SPECIFICATIONS

SDS-PAGE	42 kDa and 45 kDa, reducing conditions
Activity	Measured by its ability to compete with biotinylated feline IL-12/IL-23 p40 for binding with immobilized rhIL-12 Rβ1/Fc Chimera in a functional ELISA assay.
Endotoxin Level	<0.10 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	Lyophilized from a 0.2 µm filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in sterile PBS 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

Interleukin 12 (IL-12) and IL-23 are secreted heterodimeric glycoproteins belonging to the IL-12 cytokine family. The two cytokines share a common p40 (40 kDa) subunit, which is disulfide-linked with the p35 (35 kDa) subunit in IL-12, and with the p19 (19 kDa) subunit in IL-23. Feline p40 is synthesized as a 329 amino acid (aa) precursor with a 22 aa signal sequence and a 307 aa mature region. It contains a 90 aa fibronectin type III domain and a 75 aa Ig C2-like region. The expression of p40 is induced by substances such as LPS and CpG that activate antigen-presenting cells. Besides being found as a component of IL-12 or IL-23, free p40 monomers and homodimers are also secreted by cells expressing p40. Feline p40 shares 94%, 85%, 84%, 65%, and 65% aa sequence identity with canine, human, porcine, rat and mouse p40, respectively. Cells known to express p40 include macrophages, dendritic cells, monocytes, Langerhans cells, neutrophils, keratinocytes, plasmacytoid dendritic cells, and microglia. From cells that express both the p35 and p40 subunits (dendritic cells, monocytes, and CHO cells), the amount of free p40 secreted is 10 - 1000 fold more than the heterodimeric IL-12. The high-affinity IL-12 receptor complex that transduces IL-12 signals is composed of a 100 kDa ligand-binding subunit (IL-12 Rβ1) and a 130-kDa signal transducing subunit (IL-12 Rβ2). Similarly, the high-affinity IL-23 signaling receptor complex is composed of the shared IL-12 Rβ1 and the unique IL-23 R, a novel gp130-like protein. Both the monomeric and the dimeric free p40 can bind to the IL-12 Rβ1 and function as antagonists of IL-12 or IL-23. However, the monomeric p40 binds IL-12 Rβ1 with lower affinity and is less potent as an IL-12 antagonist. Homodimeric mouse p40 has also been shown to have agonistic functions similar to IL-12, inducing nitric oxide expression and NFκB activation in mouse primary microglia and peritoneal macrophages. The molecular mechanism for the agonistic effects of homodimeric p40 has not been determined (1 - 6).

References:

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