Recombinant Human IL-36γ/IL-1F9

Catalog Number: 2320-IL

DESCRIPTION

Source	*E. coli*-derived Met1-Asp169 Accession # Q9NZH8
N-terminal Sequence Analysis	Met1
Predicted Molecular Mass	18.7 kDa

SPECIFICATIONS

Activity	Measured by its binding ability in a functional ELISA. Immobilized recombinant human IL-36γ at 1 µg/mL (100 µL/well) can bind recombinant human IL-1 Rrp2 Fc Chimera (Catalog # 872-RP) with a linear range of 0.15 - 5 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	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

Human interleukin 36 gamma (IL-36γ; formerly known as IL-1F9, IL-1ε (epsilon) and IL-1H1) is a secreted member of the IL-1 family of proteins (1 - 5). It currently is one of at least four IL-1 family members that have been renamed, the others being IL-36α (formerly IL-1F6), IL-36β (formerly IL-1F8) IL-37 (formerly IL-1F7) and IL-36ra (formerly IL-1F5) (1). All family members show a 12 β-strand, β-trefoil configuration, and all family members are believed to have arisen from a common ancestral gene that has undergone multiple duplications (6). IL-36γ is synthesized as a 19 kDa, 169 amino acid (aa) protein that contains no signal sequence, no prosegment and no potential N-linked glycosylation site(s) (3, 4, 7). The molecule is secreted via a nonclassical pathway and likely requires the presence of extracellular ATP (7, 8). Human to mouse, IL-36γ shares 53% aa identity. Within the family, IL-36γ shares 30% aa identity with IL-1ra, and 23%, 33%, 57%, 35%, 45% and 32% aa identity with IL-1β, IL-36ra, IL-36α, IL-37, IL-36β and IL-1F10, respectively. Cells reported to express IL-36γ include Langerhans cells, keratinocytes, monocytes, bronchial epithelium plus Chief cells and Parietal cells of the stomach (6 - 10). The receptor for IL-36α is reported to be a combination of IL-1Rrp2 and IL-1 RAcP (9). Recombinant IL-136γ, along with IL-36α and IL-36β, has been shown to act as an agonist by activating the pathway involving NF-κB and MAPK in an IL-1Rrp2 dependent manner. This suggests that IL-36γ may signal in similar fashion to IL-1 and IL-18 by having a binding receptor which, upon ligation, recruits a second receptor as a signaling component, forming an active heterodimeric receptor complex. Activities attributed to IL-36γ include a down-regulation of betacellulin, an up-regulation of MMP-9 and -10, and the activation of both macrophages and fibroblasts, resulting in the release of multiple chemokines such as CXCL1, 2, 3 and 8, plus CCL2, 3 and 20 (9 - 11).

References:

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