Recombinant Mouse IL-36β/IL-1F8 (aa 31-183)

Catalog Number: 7060-ML/CF

DESCRIPTION

Source	*E. coli*-derived Ser31-Lys183 Accession # Q9D6Z6
N-terminal Sequence Analysis	Ser31
Predicted Molecular Mass	17.4 kDa

SPECIFICATIONS

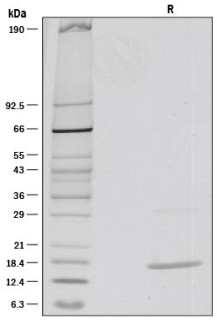
SDS-PAGE	16 kDa, reducing conditions
Activity	Measured by its ability to induce IL-6 secretion by NIH-3T3 mouse embryonic fibroblast cells. Towne, J.E. *et al.* (2004) J. Biol. Chem. **279**:13677. The ED_{50} for this effect is typically 1-6 ng/mL.
Endotoxin Level	<0.01 EU per 1 µg of the protein by 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 MES, NaCl, TCEP, EDTA, CHAPS and PEG 8000 with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in 10 mM Tris-HCl, pH 8.0.
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.

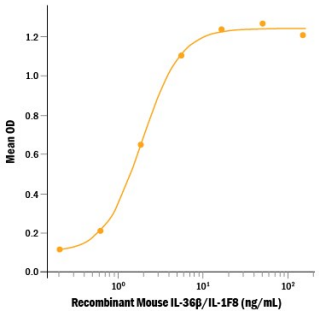
DATA

SDS-PAGE



1 µg/lane of Recombinant Mouse IL-36β/IL-1F8 (aa 31-183) was resolved with SDS-PAGE under reducing (R) conditions and visualized by silver staining, showing a single band at 16 kDa.

Bioactivity



Recombinant Mouse IL-36β/IL-1F8 (aa 31-183) (Catalog # 7060-ML/CF) induces IL-6 secretion in the NIH-3T3 mouse embryonic fibroblast cell line. The ED_{50} for this effect is typically 1-6 ng/mL.

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Catalog Number: 7060-ML/CF

BACKGROUND

Mouse interleukin-36 beta [IL-36β; previously IL-1F8, FIL-1η (eta) and IL-1H2] is a member of the IL-1 family of proteins that includes IL-1β, IL-1α, IL-1ra, IL-18, IL-36Ra/IL-1F5, IL-36α/IL-1F6, IL-37/IL-1F7, IL-36γ/IL-1F9 and IL-1F10 (1 - 6). All family members show a 12 β-stranded β-trefoil configuration, share up to 50% amino acid (aa) sequence identity, and are believed to have arisen from a common ancestral gene (3, 4). Although two alternatively spliced transcript variants for human IL-36β/IL-1F8 have been described, to date, only one mouse IL-36β/IL-1F8 isoform is known (3). Mouse IL-36β/IL-1F8 is synthesized as a 183 amino acid (aa) protein that contains no signal sequence, no prosegment and no potential N-linked glycosylation site(s) (1, 2). Mouse IL-36β/IL-1F8 shares 61% and 74% aa identity with human IL-36β isoform 2 and rat IL-36β, respectively. IL-36β is agonistic, stimulating release of inflammatory mediators such as IL-6 and IL-8, and cytotoxic peptides such as beta-defensins 2 and 3 that aid in defense against microbial pathogens (7-10). The receptor for IL-36 proteins is IL-1 Rrp2, with IL-1 RAcP as a coreceptor (7, 9). Antagonism of IL-36 proteins by IL-36Ra, which also binds IL-1 Rrp2, has been shown by some investigators (5, 6). Skin keratinocytes express highest levels of IL-36 proteins and their receptors, followed by epithelia in the esophagus, trachea and bronchae (7 - 9). IL-36β expression is increased in psoriatic skin and may play a role in pathogenesis of psoriasis (7, 8). IL-36β is also expressed in resting and activated monocytes and B cells, synovial fibroblasts, neurons and glia, and is detectable in plasma and body fluids (1, 7, 9, 11). IL-36β, along with IL-36α and IL-36γ, is up-regulated by IL-1α and TNF-α in keratinocytes, and has been shown to activate NF-κB and MAPK signaling pathways in an IL-1 Rrp2-dependent manner (7-9). Full-length recombinant IL-36 proteins appear less active than their endogenous counterparts, but trimming of the N-termini enhances their activity (9, 12).

References:

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