Recombinant Mouse IL-31 (Mammalian-expressed)

Catalog Number: 10409-ML

DESCRIPTION

Source	Human embryonic kidney cell, HEK293-derived mouse IL-31 protein Ala31-Cys163 Accession # Q6EAL8.1
N-terminal Sequence Analysis	Ala31
Predicted Molecular Mass	15 kDa

SPECIFICATIONS

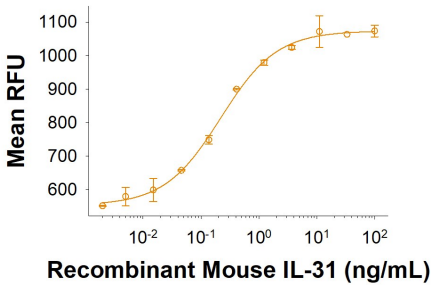
SDS-PAGE	16-25 kDa, under reducing conditions
Activity	Measured by its ability to induce STAT3 reporter activity in HEK293 human embryonic kidney cells transfected with mouse IL-31RA and OSMR beta. The ED_{50} for this effect is 0.05-0.4 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in PBS.
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.

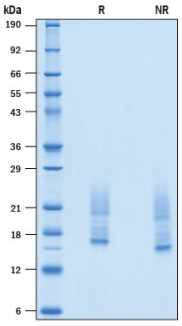
DATA

Bioactivity



Mammalian-expressed Recombinant Mouse IL-31 (Catalog # 10409-ML) induces STAT3 reporter activity in HEK293 human embryonic kidney cells transfected with mouse IL-31RA and OSMR beta. The ED_{50} for this effect is 0.05-0.4 ng/mL.

SDS-PAGE



2 µg/lane of Recombinant Mouse IL-31 (Mammalian-expressed) Protein (Catalog # 10409-ML) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 16-25 kDa.

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Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 Canada TEL 855 668 8722 China TEL +86 (21) 52380373
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BACKGROUND

Mouse Interleukin-31 (IL-31) is secreted, short-chain member of the alpha -helical IL-6 family of cytokines (1, 2). The mouse IL-31 cDNA encodes a 163 amino acid (aa) precursor that contains a signal peptide and a mature protein (3, 4). The mature region shows four alpha -helices which would be expected to generate a typical up-up-down-down topology. Mature mouse IL-31 shares 29% and 63% aa sequence identity with human and rat IL-31, respectively. Neither mouse nor human IL-31 are active on their counterparts receptors (1). IL-31 is associated with activated T cells and is preferentially expressed by Th2 rather than Th1 cells (1). IL-31 signals via a heterodimeric receptor complex composed of a gp130-related molecule termed IL-31 RA (also GPL and GLM-R) and the 180 kDa oncostatin M receptor (OSM R beta) (4-8). In the complex, IL-31 directly binds to IL-31 RA, not OSM R (4, 5). IL-31 signaling has been shown to involve the Jak/STAT pathway, the PI3 kinase/AKT cascade, and MAP kinase pathway. Although multiple isoforms of IL-31 RA are known, only a form that contains the entire length of the cytoplasmic domain is signaling-capable (4-7). The IL-31 receptor is constitutively expressed by keratinocytes and up-regulated by IFN-gamma on monocytes (1, 3). Other cells known to be responsive to IL-31 include bronchial epithelium, type II alveolar cells, goblet cells, and likely hematopoietic progenitor cells (9-11). Functionally, it has been shown that IL-31 may contribute to clinical pruritis (itching) associated with nonatopic dermatitis (1, 3, 12). This may be a consequence of IL-31's ability to induce keratinocyte secretion of multiple cytokines, including TARC, GRO- alpha, MIP-3 beta and I-309 (1). In addition, IL-31 promotes proliferation of high-density cell populations such as myeloid progenitor cells, but conversely suppresses proliferation of lung epithelial cells (1). Finally, IL-31 may actually have a modulating effect on T cell subsets, influencing the ratio between Th1 and Th2 cells (1).

References:

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