

DESCRIPTION

Source Human embryonic kidney cell, HEK293-derived human IL-31 protein
Leu27-Thr164
Accession # Q6EBC2.1

N-terminal Sequence Analysis Leu27

Predicted Molecular Mass 16 kDa

SPECIFICATIONS

SDS-PAGE 19-29 kDa, under reducing conditions

Activity Recombinant Human IL-31 (HEK293-expressed) (Catalog # 10425-IL) stimulates CCL2/JE/MCP-1 secretion from the BEAS-2B Human lung bronchial epithelial cell line. The ED₅₀ for this effect is <5 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 200 µg/mL in PBS.

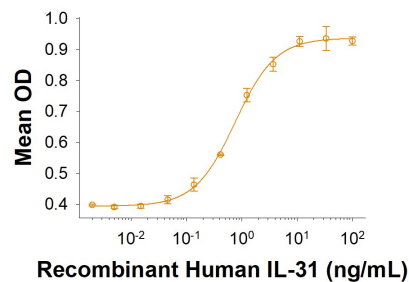
Shipping The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

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.

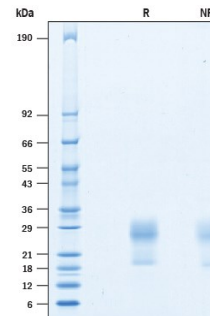
DATA

Bioactivity



Recombinant Human IL-31 (HEK293-expressed) (Catalog # 10425-IL) stimulates CCL2/JE/MCP-1 secretion from the BEAS-2B Human lung bronchial epithelial cell line. The ED₅₀ for this effect is <5 ng/mL.

SDS-PAGE



2 µg/lane of Recombinant Human IL-31 (HEK293-expressed) Protein (Catalog # 10425-IL) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 19-29 kDa.

BACKGROUND

Human Interleukin-31 (IL-31) is a short-chain member of the alpha-helical family of cytokines. The human IL-31 cDNA encodes a 164 amino acid (aa) precursor that contains a signal peptide and a mature protein (1, 2). The mature region shows four alpha-helices which would be expected to show a typical up-up-down-down topology. Human and mouse IL-31 share 24% aa sequence identity in the mature region (1). IL-31 is mainly associated with activated T cells and preferentially expressed by Th2 rather than Th1 cells. IL-31 signals via a heterodimeric receptor complex composed of a 120 kDa, gp130-related molecule termed IL-31 RA (also GPL and GLM-R) and the 180 kDa oncostatin M receptor (OSM R beta) (2-6). In the complex, IL-31 directly binds to IL-31 RA, not OSM R (2, 3). IL-31 signaling has been shown to involve the Jak/STAT pathway, the PI3 kinase/AKT cascade, and the MAP kinase pathway (2-5). STAT3 is an important factor in MCP-1 (CCL2) regulation in tumor cells, as well as in keratinocytes. Impaired IL-31-induced production of MCP-1 in MT (mutant IL-31RA-S521F) cells is, at least in part, attributed to the much-reduced STAT3 activation in IL-31 signaling (9). Although multiple isoforms of IL-31 RA are known, only a form that contains the entire length of the cytoplasmic domain is signaling-capable (2, 3). The IL-31 receptor is constitutively expressed by keratinocytes and up-regulated by IFN-gamma on monocytes (1). Studies using transgenic mice indicate that IL-31 may contribute to the pruritis (itching) associated with nonatopic dermatitis (1, 7). Eccrine sweat is secreted onto the skin's surface and is not harmful to normal skin, but can exacerbate eczematous lesions in atopic dermatitis. IL-31 seems to be a sweat stimulator that activates keratinocytes to produce inflammatory cytokine CCL2 (10). IL-31 (50 ng/ml) could significantly activate the release of EGF, VEGF, CCL2 but not IL-6 and IL-8 from BEAS-2B cells after 18 hr (8).

References:

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