Recombinant Mouse IL-31

Catalog Number: 3028-ML

DESCRIPTION

Source	*E. coli*-derived Thr24-Cys163 Accession # Q6EAL8
N-terminal Sequence Analysis	Thr24
Predicted Molecular Mass	15.6 kDa

SPECIFICATIONS

SDS-PAGE	13 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. In a 100 µL reaction mixture containing recombinant mouse (rm) IL-31 at 0.25 µg/mL and rmIL-31 R Fc Chimera dilutions at 0.02–10 µg/mL, the concentration of rmIL-31 R Fc Chimera that produces 50% of the optimal binding response is found to be approximately 0.2–0.8 µg/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 PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in 10 mM Acetic Acid.
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

Mouse Interleukin-31 (IL-31) is likely a secreted, 24–33 kDa short-chain member of the α-helical IL-6 family of cytokines (1, 2). The mouse IL–31 cDNA encodes a 163 amino acid (aa) precursor that contains a 23 aa signal peptide and a 140 aa mature protein (3, 4). The mature region shows four α–helices which would be expected to generate a typical up-up-down-down topology. There are three potential sites for N–linked glycosylation. 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 newly identified, 120 kDa, gp130-related molecule termed IL-31 RA (also GPL and GLM-R) and the 180 kDa oncostatin M receptor (OSM Rβ) (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 upregulated by IFN-γ 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–α, MIP–3β 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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