Recombinant Human IFN-alpha-1b

Catalog Number: 11015-IF

DESCRIPTION

Source	Human embryonic kidney cell, HEK293-derived human IFN-alpha 1 protein Cys24-Glu189 Accession # CAA23799.1
N-terminal Sequence Analysis	Cys24
Predicted Molecular Mass	19 kDa

SPECIFICATIONS

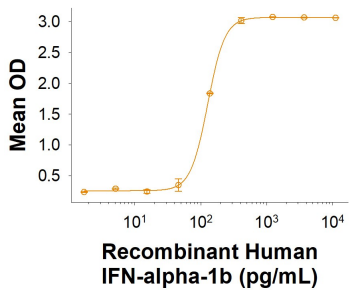
SDS-PAGE	17-21 kDa, under reducing conditions.
Activity	Measured in anti-viral assays using HeLa human cervical epithelial carcinoma cells infected with encephalomyocarditis (EMC) virus. Meager, A. (1987) in Lymphokines and Interferons, a Practical Approach. Clemens, M.J. *et al.* (eds): IRL Press. 129. The ED_{50} for this effect is 30.0-300 pg/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 with Trehalose. 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.

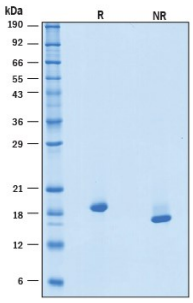
DATA

Bioactivity



Recombinant Human IFN-alpha-1b Protein Bioactivity. Recombinant Human IFN-alpha-1b Protein (Catalog # 11015-IF) demonstrates anti-viral activity in HeLa human cervical epithelial carcinoma cells infected with encephalomyocarditis (EMC) virus. The ED_{50} for this effect is 30.0-300 pg/mL.

SDS-PAGE



Recombinant Human IFN-alpha-1b Protein SDS-PAGE. 2 µg/lane of Recombinant Human IFN-alpha-1b Protein (Catalog # 11015-IF) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 17-21 kDa.

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Catalog Number: 11015-IF

BACKGROUND

Interferons (IFN) are a family of cytokines with potent antiviral, antiproliferative and immunomodulatory properties, classified based on their binding specificity to cell surface receptors (1). Human IFNA2 was originally cloned in the early '80s and now more than a dozen closely related IFN alpha subtypes have been identified in both the human and mouse genome, each sharing about 80% amino acid (aa) sequence homology (2-4). Structurally, type I IFNs belong to the class of five helical-bundle cytokines, with the IFNA subtypes containing 2 conserved disulfide bonds (5). The extracellular domain (ECD) of mature human IFNA1, also known as IFNA13, shares 63% aa sequence identity with mouse IFNA1. Two variants of human IFNA1 are known to exist, IFNA1a and IFNA1b, which only differ by a single residue at position 137 (6). The type I IFNs bind to the interferon alpha receptor (IFNAR), which consists of two subunits: IFNAR1 (alpha -subunit) and IFNAR2 (beta -subunit) (7, 8). IFNA1 is the most expressed IFNA subtype and primarily expressed by plasmacytoid dendritic cells (pDC), which are the earliest cells recruited to the sites of virus entry (9). Individual IFNA subtypes are known to display unique efficacies to viral protection, and IFNA1 exhibits low potency, determined by both antiviral and antiproliferative activities (10). Human IFNA1 was the first IFNA to be purified and has been tested as a treatment for various diseases (11-13).

References:

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