Recombinant Mouse IFN-α1

Catalog Number: 10148-IF

DESCRIPTION

Source	Human embryonic kidney cell, HEK293-derived mouse IFN-alpha 1 protein Cys24-Lys189 Accession # P01572
N-terminal Sequence Analysis	No results obtained. Cys24 inferred from enzymatic pyroglutamate treatment revealing Asp25.
Predicted Molecular Mass	19 kDa

SPECIFICATIONS

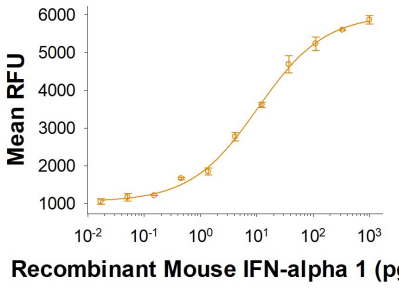
SDS-PAGE	18-22 kDa, under reducing conditions
Activity	Measured in an anti-viral assay using L-929 mouse fibroblast cells infected with encephalomyocarditis (EMC) virus. Vogel, S.N. *et al.* (1982) Infect. Immunol. **38**:681. The ED_{50} for this effect is 1.2-12 pg/mL.
Endotoxin Level	<0.10 EU per 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. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in PBS.
Shipping	The product is shipped with polar packs. 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, -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after opening. • 3 months, -20 to -70 °C under sterile conditions after opening.

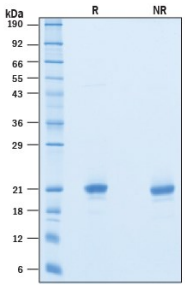
DATA

Bioactivity



Recombinant Mouse IFN-alpha 1 (Catalog # 10148-IF) suppresses viral activity on L-929 mouse fibroblast cells infected with encephalomyocarditis (EMC) virus. The ED_{50} for this effect is 1.2-12 pg/mL.

SDS-PAGE



2 µg/lane of Recombinant Mouse IFN-alpha 1 (Catalog # 10148-IF) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 18-22 kDa.

BACKGROUND

The interferons (IFN) are a family of cytokines with potent antiviral, antiproliferative and immunomodulatory properties, and classified based on their binding specificity to cell surface receptors (1). The type I IFN bind to the interferon alpha receptor (IFNAR), which consists of two subunits: IFNAR1 (α-subunit) and IFNAR2 (β-subunit). This binding contributes to TNF-alpha induced signaling (2, 3). Both the human and mouse genome code for more than a dozen closely related IFNa subtypes and the varous IFN a share about 80% sequence homology among them (4-5). Interferon-alpha 1 (IFNA1) is a secreted, approximately 19 kDa member of the type I interferon family of molecules (6). Mature mouse IFN-alpha 1 shares 63% and 82% amino acid sequence identity with human and rat IFN-alpha 1, respectively. Low level IFN-alpha is detected under physiological conditions, and the production of IFNs is markedly enhanced during virus infection (7). Although originally discovered by its capability to fight virus replication, IFN-alpha functions as a prototypic tumor suppressor that represses the clinical tumorigenic phenotype in some malignancies (7).

References:

1. Pestka, S. *et al.* (1987) Annu Rev Biochem. **56**:727.
2. Fung, K.Y. *et al.* (2013) Science **339**:1088.
3. Matsumiya, T. *et al.* (2007) J. Immunol. **179**:4542.
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7. Gutterman J. U. *et al.* (1994) Proc. Natl. Acad. Sci. U. S. A. **91**:1198.

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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
Europe | Middle East | Africa TEL +44 (0)1235 529449