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Human Recombinant IFN alpha 1

Interferon alpha 1, His tag

Catalog #100-1336 100 µg

Product Description

Interferon alpha 1 (IFNA1), also known as interferon alphaD (IFN alphaD), belongs to the type 1 interferon family of cytokines. Interferons display alpha-helical structures with four helices forming an antiparallel alpha-helix bundle (Walter). IFNA1 contains a His-residue tag at the carboxyl end of the polypeptide chain. Type 1 interferons bind to the interferon alpha receptor (IFNAR) composed of IFNAR1 and IFNAR2 subunits which are involved in interferon-induced JAK-STAT signaling (Shemesh et al.). Interferons have inhibitory effects on viral replication and pathogenesis, and studies have found that IFN alpha can prevent the spread of herpes simplex virus (HSV) (Mikloska & Cunningham) and human immunodeficiency virus (HIV) (George & Mattapallil). Pegylated forms of IFN alpha are currently approved for the treatment of chronic hepatitis B (Woo et al.). IFN alpha also displays anti-tumor effects by regulating cell growth and proliferation, and it is used in the treatment of different cancers (Tagliaferri et al.).

Product Information

Alternative Names:	IFL, IFN, IFNA, IFNA13, IFN alphaD
Accession Number:	NP_076918.1 (Cys24-Glu189) was expressed with a polyhistidine tag at the C-terminus.
Amino Acid Sequence:	CDLPETHSLD NRRTLMLLAQ MSRISPSSCL MDRHDFGFPQ EEFDGNQFQK APAISVLHEL IQQIFNLFTT KDSSAAWDED LLDKFCTELY QQLNDLEACV MQEERVGETP LMNADSILAV KKYFRRITLY LTEKKYSPCA WEVVRAEIMR SLSLSTNLQE RLRRKEHHHH HHHHHH
Predicted Molecular Mass:	20.8 kDa
Species:	Human
Product Formulation:	Lyophilized from sterile phosphate-buffered saline, pH 7.4. Trehalose (5%), mannitol (5%), and 0.01% TWEEN® 80 are normally added as protectants before lyophilization.
Source:	Pichia pastoris
Purity:	≥ 92%

Specifications

Activity:	The EC50 is ≤ 80 pg/mL, as determined by a cell viability assay using WISH cells infected with vesicular stomatitis virus (VSV).
Endotoxin Level:	Not available

Preparation and Storage

Stability and Storage: Store at -20 to -80°C. Stable as supplied for 12 months from date of receipt.

Preparation: Centrifuge vial before opening. Reconstitute the product in sterile water to at least 0.25 mg/mL by pipetting the solution down the sides of the vial. Do not vortex.
As a general guide, do not store at 2 - 8°C for more than 1 month or at -80°C for more than 3 months. Avoid repeated freeze-thaw cycles.

Data

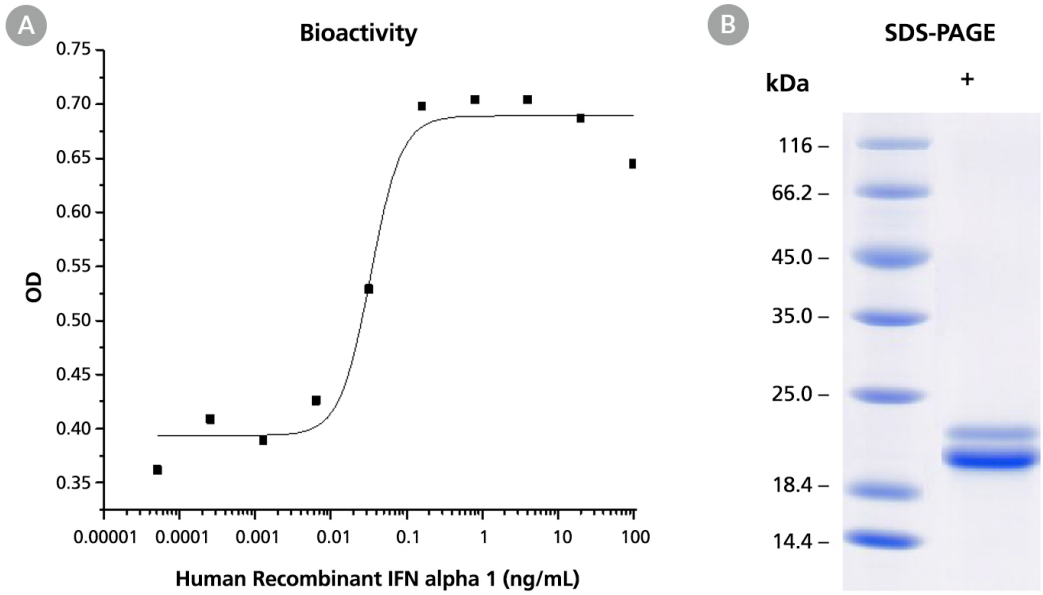

Figure 1. Biological Activity and Molecular Mass of Human Recombinant IFN alpha 1

(A) The biological activity of Human Recombinant IFN alpha 1 was tested by its ability to promote the viability of WISH cells infected with VSV in a cytopathic effect (CPE) assay. The EC50 is defined as the effective concentration of the cytokine at which cell survival is at 50% of maximum. The EC50 in the above example is 19 pg/mL.
(B) Human Recombinant IFN alpha 1 was resolved with SDS-PAGE under reducing (+) conditions and visualized by Coomassie Blue staining. Human Recombinant IFN alpha 1 has a predicted molecular mass of 20.8 kDa.

Related Products

For a complete list of cytokines or peptide pools, as well as related products available from STEMCELL Technologies, visit www.stemcell.com/cytokines or contact us at techsupport@stemcell.com.

References

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Mikloska Z & Cunningham AL. (2001) Alpha and gamma interferons inhibit herpes simplex virus type 1 infection and spread in epidermal cells after axonal transmission. J Virol 75(23): 11821–6.

Shemesh M et al. (2021) IFNAR1 and IFNAR2 play distinct roles in initiating type I interferon-induced JAK-STAT signaling and activating STATs. Sci Signal 14(710): 4627.

Tagliaferri P et al. (2005) New pharmacokinetic and pharmacodynamic tools for interferon-alpha (IFN-α) treatment of human cancer. Cancer Immunol Immunother 54(1): 1–10.

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