Cytokines

Human Recombinant IFN-alpha 2A

Interferon-alpha 2A

Catalog #	78076	20 µg
	78076.1	100 µg

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Product Description

Interferon-alpha (IFN-α) is a type I interferon, produced by virus-infected cells, and is released as a soluble factor to initiate antiviral responses (Isaacs & Lindenmann). IFN-α2 is the most potent IFN-α used in fundamental research and in most clinical applications. The best-known IFN-α2 subvariants, 2A and 2B, differ by only one or two amino acids at positions 23 and/or 34 of the mature protein (von Gabain et al.). Type I IFNs exert potent antitumor activity by increasing the cytotoxic activity of NK and T cells, as well as by inhibiting the proliferation of cancer cells (Paul et al.). Additionally, it has been shown that proinflammatory IFN-α modulates the function of B cells in patients with systemic lupus erythematosus (Chang et al.), and pegylated forms of IFN-alpha 2A and 2B have implications in the treatment of hepatitis C (Foster et al.).

Product Information

Alternative Names:	IFN-alpha 2, IFNA2, IFNA2a
Accession Number:	P01563
Amino Acid Sequence:	MCDLPQTHSL GSRRTLMLLA QMRKISLFSC LKDRHDFGFP QEEFGNQFQK AETIPVLHEM IQQIFNLFST KDSSAAWDET LLDKFYTELY QQLNDLEACV IQGVGVTETP LMKEDSILAV RKYFQRITLY LKEKKYSPCA WEVVRAEIMR SFSLSTNLQE SLRSKE
Predicted Molecular Mass:	19.4 kDa
Species:	Human
Cross Reactivity:	Cow
Formulation:	Lyophilized from a sterile-filtered aqueous solution containing 0.1% trifluoroacetic acid.
Source:	E. coli

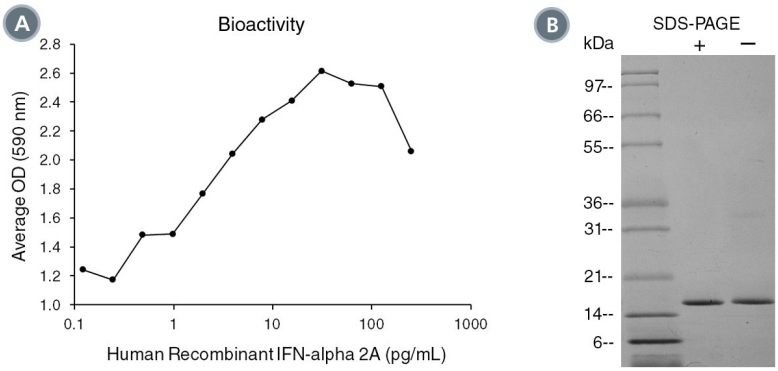
Specifications

Activity:	The specific activity is ≥ 2 x 10^8 units/mg (EC50 ≤ 5 pg/mL) as determined in a viral challenge assay using encephalomyocarditis (EMC) virus on A549 cells.
Purity:	≥ 95%
Endotoxin Level:	Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is ≤ 1 EU/µg protein.

Preparation and Storage

Storage:	Store at -20°C to -80°C.
Stability:	Stable as supplied for 12 months from date of receipt.
Preparation:	Centrifuge vial before opening. Reconstitute the product in sterile water to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. OPTIONAL: After reconstitution, if product will not be used immediately, dilute with concentrated bovine serum albumin (BSA) to a final BSA concentration of 0.1%. The effect of storage of stock solution on product performance should be tested for each application. 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



(A) The biological activity of Human Recombinant IFN-alpha 2A was measured with A549 cells exposed to the EMC virus in a cytopathic effect (CPE) assay. Cell survival was measured using a fluorometric assay method. 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 3.6 pg/mL.
(B) 1 µg of Human Recombinant IFN-alpha 2A was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant IFN-alpha 2A has a predicted molecular mass of 19.4 kDa.

Related Products

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

References

Chang N-H et al. (2015) Interferon-α induces altered transitional B cell signaling and function in Systemic Lupus Erythematosus. J Autoimmun 58: 100–10.
Foster GR. (2010) Pegylated interferons for the treatment of chronic hepatitis C: pharmacological and clinical differences between peginterferon-alpha-2a and peginterferon-alpha-2b. Drugs 70(2): 147–65.
Isaacs A & Lindenmann J. (1957) Virus interference. I. The interferon. Proc R Soc London Ser B, Biol Sci 147(927): 258–67.
Paul F et al. (2015) IFNA2: The prototypic human alpha interferon. Gene 567(2): 132–7.
von Gabain A et al. (1990) Three human interferon-alpha 2 subvariants disclose structural and functional differences. Eur J Biochem 190(2): 257–61.