

IFN-beta Protein, Human (HEK293, Fc)

Cat. No.:	HY-P73129
Synonyms:	Interferon beta; IFN-beta; IFNB1; IFB; IFNB
Species:	Human
Source:	HEK293
Accession:	P01574 (M1-N187)
Gene ID:	3456
Molecular Weight:	Approximately 52 kDa

PROPERTIES

Biological Activity	Measured in antiviral assays using WISH human amnion cells infected with vesicular stomatitis virus (VSV) and the ED ₅₀ is 0.06-0.8 ng/mL.
Appearance	Solution.
Formulation	Supplied as a 0.2 µm filtered solution of PBS, pH 7.4
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	N/A.
Storage & Stability	Stored at -80°C for 1 year. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.
Shipping	Shipping with dry ice.

DESCRIPTION

Background

IFN-beta (Interferon-beta), a pivotal type I interferon cytokine, assumes a critical role in orchestrating the innate immune response to various challenges, including infections, tumor development, and inflammatory stimuli. Acting through a high-affinity (IFNAR2) and low-affinity (IFNAR1) heterodimeric receptor, IFN-beta triggers the canonical Jak-STAT signaling pathway, leading to the transcriptional activation or repression of interferon-regulated genes. These genes, in turn, encode effectors crucial for the interferon response, encompassing antiviral proteins, regulators of cell proliferation and differentiation, and immunoregulatory proteins. While primarily signaling through the IFNAR1-IFNAR2 heterodimeric receptor, IFN-beta also demonstrates versatility by functioning with IFNAR1 alone and operating independently of Jak-STAT pathways. Its multifaceted effects span antiviral and antibacterial activities, modulation of B-cell development, myelopoiesis, and lipopolysaccharide-inducible production of tumor necrosis factor. In the realm of neuronal homeostasis, IFN-beta emerges as a guardian, regulating dopamine turnover and safeguarding dopaminergic neurons through the promotion of neuronal autophagy and alpha-synuclein clearance, thereby averting dopaminergic neuron loss. Notably, IFN-beta surpasses interferon-alpha (IFN-alpha) in potency, particularly in inducing apoptotic and antiproliferative pathways crucial for controlling tumor cell growth. Presenting as a monomer, IFN-beta embodies a versatile and potent player in

diverse physiological responses and immune regulation.

Caution: Product has not been fully validated for medical applications. For research use only.

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