

## IFN-alpha 5/IFNA5 Protein, Human (P.pastoris, His)

Cat. No.:	HY-P75893
Synonyms:	Interferon alpha-5; IFN-alpha-5; Interferon alpha-G; LeIF G
Species:	Human
Source:	P. pastoris
Accession:	P01569 (L22-E189)
Gene ID:	3442
Molecular Weight:	Approximately 21.1 kDa

### PROPERTIES

Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 µm filtered solution of PBS, pH 7.4. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH <sub>2</sub> O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

### DESCRIPTION

Background	<p>IFN-alpha 5 (IFNA5; IFN-α5), belongs to the alpha/beta interferon (IFN) family, is produced by the macrophages with antiviral activities. Interferon (IFN) is originally identified as a substance ‘interfering’ with viral replication in vitro. IFN-α/β and related molecules are classified as type I IFNs, as for the other two types of type II IFN (IFN-γ) and type III IFNs (IFN-λ), respectively<sup>[1]</sup>.</p> <p>Interferon stimulates the production of two enzymes: a protein kinase and an oligoadenylate synthetase. Interferon alpha (IFNα) shows significant biological activity in various cancers, particularly haematological malignancies such as hairy cell leukaemia and chronic myelogenous leukaemia<sup>[2]</sup>.</p> <p>IFN-alpha 5 involves in innate immunity, and is one of the genes associated with acute viral bronchiolitis (AVB) caused by respiratory syncytial virus (RSV), determining susceptibility to RSV bronchiolitis<sup>[3][4]</sup>.</p> <p>The excessively expressed interferon-α (IFN-α) might contribute to the uncontrolled inflammatory responses, causing pathological damage during influenza virus infection. However IFN-alpha 5 is dominantly expressed in respiratory epithelial cells from the patients infected with less pathogenic infectious bronchitis virus (IBV)<sup>[5]</sup>.</p> <p>As for a widely use of IFN in animal model, the sequence of amino acids in IFNA5 protein of human is very different from mouse (60.32%)</p>
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## REFERENCES

- [1]. Zhang SY, et al. Inborn errors of interferon (IFN)-mediated immunity in humans: insights into the respective roles of IFN-alpha/beta, IFN-gamma, and IFN-lambda in host defense. *Immunol Rev.* 2008 Dec;226:29-40.
- [2]. Raj NB, et al. Identification of a novel virus-responsive sequence in the promoter of murine interferon-alpha genes. *J Biol Chem.* 1991 Jun 15;266(17):11360-5.
- [3]. Hirankarn N, et al. Genetic association of interferon-alpha subtypes 1, 2 and 5 in systemic lupus erythematosus. *Tissue Antigens.* 2008 Dec;72(6):588-92.
- [4]. Janssen R, et al. Genetic susceptibility to respiratory syncytial virus bronchiolitis is predominantly associated with innate immune genes. *J Infect Dis.* 2007 Sep 15;196(6):826-34.
- [5]. Yang L, et al. Diversity of locally produced IFN- $\alpha$  subtypes in human nasopharyngeal epithelial cells and mouse lung tissues during influenza virus infection. *Appl Microbiol Biotechnol.* 2020 Jul;104(14):6351-6361.
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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