

## IFN-alpha 10/IFNA10 Protein, Human (HEK293, His)

Cat. No.:	HY-P76457
Synonyms:	Interferon alpha-10; Interferon alpha-6L; Interferon alpha-C; LeIF C
Species:	Human
Source:	HEK293
Accession:	P01566 (C24-D189)
Gene ID:	3446
Molecular Weight:	Approximately 22 kDa.

### PROPERTIES

AA Sequence	<p> C D L P Q T H S L G    N R R A L I L L G Q    M G R I S P F S C L    K D R H D F R I P Q  E E F D G N Q F Q K    A Q A I S V L H E M    I Q Q T F N L F S T    E D S S A A W E Q S  L L E K F S T E L Y    Q Q L N D L E A C V    I Q E V G V E E T P    L M N E D S I L A V  R K Y F Q R I T L Y    L I E R K Y S P C A    W E V V R A E I M R    S L S F S T N L Q K  R L R R K D </p>
Appearance	Lyophilized powder
Formulation	Lyophilized from a 0.2 µm filtered solution of PBS, pH 7.4.
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. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
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 10 (IFNA10; IFN-α10), belongs to the alpha/beta interferon (IFN) family, is produced by the macrophages with antiviral activities<sup>[1]</sup>. 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>[2]</sup>.</p> <p>Interferon stimulates the production of two enzymes: a protein kinase and an oligoadenylate synthetase. Interferon alpha (IFNa) shows significant biological activity in various cancers, particularly haematological malignancies such as hairy cell leukaemia and chronic myelogenous leukaemia<sup>[3]</sup>.</p>
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IFN $\alpha$ -10 involves in JAK/STAT signaling pathway with strong signaling effect (EC<sub>50</sub>=0.3 nM), is identified as potent regulators that reduces both CTLA4 and FOXP3 without affecting cell viability. Therefore, regulatory T cells (Tregs) as the key cells regulating peripheral autoreactive T lymphocytes, IFN $\alpha$ -10 regulates Treg functional states and destabilises Treg<sup>[4]</sup>.

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## REFERENCES

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- [1]. Kumagai Y, et al. Alveolar macrophages are the primary interferon-alpha producer in pulmonary infection with RNA viruses. *Immunity*. 2007 Aug;27(2):240-52.
- [2]. 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.
- [3]. 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.
- [4]. Ding M, et al. Secretome screening reveals immunomodulating functions of IFN $\alpha$ -7, PAP and GDF-7 on regulatory T-cells. *Sci Rep*. 2021 Aug 18;11(1):16767.
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**Caution: Product has not been fully validated for medical applications. For research use only.**

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA