

DESCRIPTION

Source Chinese Hamster Ovary cell line, CHO-derived
Met22-Asn187
Accession # P01574

N-terminal Sequence Analysis Met22 & Ser23

Predicted Molecular Mass 20 kDa

SPECIFICATIONS

SDS-PAGE 20-26 kDa, reducing conditions

Activity Measured in anti-viral assays using HeLa human cervical epithelial carcinoma cells infected with encephalomyocarditis (EMC) virus. Meager, A. (1987) in *Lymphokines and Interferons, a Practical Approach*. Clemens, M.J. *et al.* (eds): IRL Press. 129.
The ED₅₀ for this effect is 5-30 pg/mL.
The specific activity of Recombinant Human IFN- β is approximately 2.8 x 10⁸ IU/mg, which is calibrated against human IFN- β WHO International Standard (NIBSC code: 00/572).

Endotoxin Level <0.10 EU per 1 μ g of the protein by the LAL method.

Purity >95%, by SDS-PAGE with silver staining.

Formulation Lyophilized from a 0.2 μ m filtered solution in Citric Acid and CHAPS with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

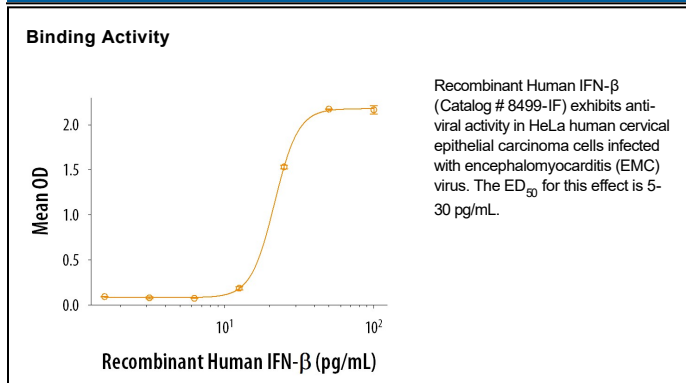
Reconstitution Reconstitute at 200 μ g/mL in sterile water.

Shipping The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**

- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

DATA



BACKGROUND

Interferon beta (IFN- β), also known as fibroblast IFN, is a secreted, approximately 22 kDa member of the type I interferon family of molecules (1). Mature human IFN- β shares 47% and 46% amino acid sequence identity with the mouse and rat proteins, respectively. Fibroblasts are the major producers of IFN- β , but it can also be produced by dendritic cells, macrophages, and endothelial cells in response to pathogen exposure (2). It is transcriptionally regulated by TRAF3, IRF3, IRF7, and NF- κ B (3, 4). Following secretion, IFN- β signals through the heterodimeric IFN- α/β Receptor and activates the JAK/STAT signaling pathway (5-8). IFN- β -deficient mice show increased susceptibility to experimental autoimmune encephalomyelitis (EAE), a disease model of human multiple sclerosis (MS) (9). Furthermore, IFN- β has been shown to suppress the Th17 cell response in both MS and EAE and has commonly been used as a treatment for MS (10-14).

References:

1. González-Navajas, J.M. *et al.* (2012) *Nat. Rev. Immunol.* **12**:125.
2. Reder, A.T. and X. Feng (2013) *Front. Immunol.* **4**:281.
3. Schafer, S.L. *et al.* (1998) *J. Biol. Chem.* **273**:2714.
4. Häcker, H. *et al.* (2006) *Nature* **439**:204.
5. Honda, K. *et al.* (2006) *Nat. Rev. Immunol.* **6**:644.
6. Platanias, L.C. (2005) *Nat. Rev. Immunol.* **5**:375.
7. Fasler-Kan, E. *et al.* (1998) *Eur. J. Biochem.* **254**:514.
8. Matikainen, S. *et al.* (1999) *Blood* **93**:1980.
9. Teige, I. *et al.* (2003) *J. Immunol.* **170**:4776.
10. Shinohara, M.L. *et al.* (2008) *Immunity* **29**:68.
11. Guo, B. *et al.* (2008) *J. Clin. Invest.* **118**:1680.
12. Ramgolam, V.S. and S. Markovic-Plese (2010) *Endocr. Metab. Immune Disord. Drug Targets* **10**:161.
13. Martín-Saavedra, F.M. *et al.* (2008) *Mol. Immunol.* **45**:4008.
14. Inoue, M. and M.L. Shinohara (2013) *Immunology* **139**:11.