

**DESCRIPTION**

**Source** Human embryonic kidney cell, HEK293-derived  
Ile22-Asn182  
Accession # P01575

**N-terminal Sequence Analysis** Ile22

**Structure / Form** Monomer

**Predicted Molecular Mass** 20 kDa

**SPECIFICATIONS**

**SDS-PAGE** 30-38 kDa, reducing conditions

**Activity** Measured in an anti-viral assay using L-929 mouse fibroblast cells infected with encephalomyocarditis (EMC) virus. Vogel, S.N. *et al.* (1982) Infect. Immunol. **38**:681.  
The ED<sub>50</sub> for this effect is typically 1-6 pg/mL.

The specific activity of recombinant Mouse IFN- $\beta$  is approximately 1.2 x 10<sup>9</sup> IU/mg, which is calibrated against Murine IFN- $\beta$  WHO International Standard. The Murine IFN- $\beta$  WHO International Standard (NR-3079) was obtained through the NIH Biodefense and Emerging Infections Research Resources Repository, NIAID, NIH.

**Endotoxin Level** <0.10 EU per 1  $\mu$ g of the protein by the LAL method.

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

**Formulation** Lyophilized from a 0.2  $\mu$ m filtered solution in PBS and Tween® 80. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

**Reconstitution** Reconstitute at 100  $\mu$ g/mL in sterile PBS.

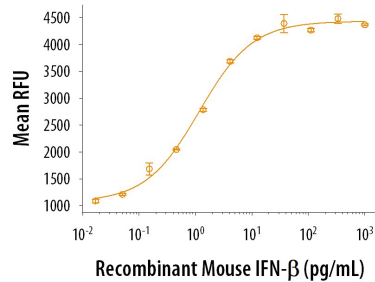
**Shipping** The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

**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.

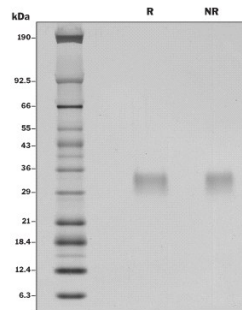
**DATA**

**Bioactivity**



Recombinant Mouse IFN-beta (Catalog # 8234-MB/CF) suppresses viral activity using L-929 mouse fibroblast cells infected with encephalomyocarditis (EMC) virus. The ED<sub>50</sub> for this effect is typically 1-6 pg/mL.

**SDS-PAGE**



1  $\mu$ g/lane of Recombinant Mouse IFN-beta (Catalog # 8234-MB/CF) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by silver staining, showing bands at 32.7 and 32.9 kDa, respectively.

**BACKGROUND**

Interferon beta (IFN- $\beta$ ), also known as fibroblast IFN, is a secreted, approximately 22 kDa member of the type I interferon family of molecules (1). Mature mouse IFN- $\beta$  shares 75% and 47% amino acid sequence identity with the rat and human proteins, respectively. Fibroblasts are the major producers of IFN- $\beta$ , but it can also be produced by dendritic cells, macrophages, and endothelial cells in response to pathogens (2). It is transcriptionally regulated by TRAF3, IRF3, IRF7, and NF- $\kappa$ B (3, 4). IFN- $\beta$ -deficient mice show increased susceptibility to experimental autoimmune encephalomyelitis (EAE), a disease model of human multiple sclerosis (MS) (5). Furthermore, IFN- $\beta$  has been shown to suppress the Th17 cell response in both MS and EAE and has commonly been used as a treatment for MS (6-10). IFN- $\beta$  can additionally induce the expression of the anti-inflammatory cytokine IL-10 (11).

**References:**

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4. Häcker, H. *et al.* (2006) *Nature* **439**:204.
5. Teige, I. *et al.* (2003) *J. Immunol.* **170**:4776.
6. Shinohara, M.L. *et al.* (2008) *Immunity* **29**:68.
7. Guo, B. *et al.* (2008) *J. Clin. Invest.* **118**:1680.
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9. Martín-Saavedra, F.M. *et al.* (2008) *Mol. Immunol.* **45**:4008.
10. Inoue, M. and M.L. Shinohara (2013) *Immunology* **139**:11.
11. Wang, H. *et al.* (2011) *J. Immunol.* **186**:675.