

## Recombinant Human IFN-beta

|                                |   |
|--------------------------------|---|
| <b>Accession #</b>             | P01574  |
| <b>Alternate Names</b>         | Fibroblast interferon; IFB; IFBIFNB; IFF; IFNB; IFNB1; IFNbeta; IFN-beta; interferon beta   |
| <b>Source</b>                  | Human embryonic kidney cell, HEK293-derived human IFN-beta protein  |
| <b>Protein sequence</b>        | Met22-Asn187  |
| <b>M.Wt</b>                    | 20.0 kDa  |
| <b>Appearance</b>              | Solution protein.   |
| <b>Stability &amp; Storage</b> | Avoid repeated freeze-thaw cycles. It is recommended that the protein be aliquoted for optimal storage. 12 months from date of receipt, -20 to -70 °C as supplied.        |
| <b>Concentration</b>           | 0.2 mg/mL   |
| <b>Formulation</b>             | Dissolved in sterile PBS buffer.  |
| <b>Reconstitution</b>          | We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. This solution can be diluted into other aqueous buffers.         |
| <b>Biological Activity</b>     | Measured in anti-viral assays using HeLa human cervical epithelial carcinoma cells infected with encephalomyocarditis (EMC) virus. The EC50 for this effect is 1-10 ng/mL |
| <b>Shipping Condition</b>      | Shipping with dry ice.  |
| <b>Handling</b>                | Centrifuge the vial prior to opening.   |
| <b>Usage</b>                   | For Research Use Only! Not to be used in humans.  |

## Quality Control

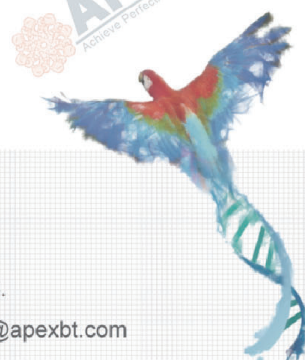
|                  |  |
|------------------|--|
| <b>Purity</b>    | > 95%, determined by SDS-PAGE.                       |
| <b>Endotoxin</b> | <0.010 EU per 1 µg of the protein by the LAL method. |

## Description

Interferon beta (IFN-beta), also known as fibroblast IFN, is a secreted, approximately 22 kDa member of the type I interferon family of molecules <sup>[1]</sup>. Mature human IFN-beta shares 47% and 46% amino acid sequence identity with the mouse and rat 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 pathogen exposure <sup>[2]</sup>. It is transcriptionally regulated by TRAF3, IRF3, IRF7, and NF-kappa B <sup>[3]</sup>. Following secretion, IFN-beta signals through the heterodimeric IFN-alpha / beta Receptor and activates the JAK/STAT signaling pathway <sup>[4-7]</sup>. IFN-beta -deficient mice show increased susceptibility to experimental autoimmune encephalomyelitis (EAE), a disease model of human multiple sclerosis (MS) <sup>[8]</sup>. 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 <sup>[9-13]</sup>.

## Reference

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