

# Human Interferon beta / IFN-beta / IFNB Protein (Fc Tag)

Catalog Number: 10704-H02H



Sino Biological  
Biological Solution Specialist

## General Information

### Gene Name Synonym:

IFB; IFF; IFN-beta; IFNB; Interferon beta

### Protein Construction:

A DNA sequence encoding the human IFN $\beta$  (NP\_002167.1) (Met 1-Asn 187) was fused with the Fc region of human IgG1 at the C-terminus.

**Source:** Human

**Expression Host:** HEK293 Cells

## QC Testing

**Purity:** > 95 % as determined by SDS-PAGE

### Bio Activity:

Measured in antiviral assays using WISH human amnion cells infected with vesicular stomatitis virus (VSV). The ED<sub>50</sub> for this effect is 0.2-3pg/ml.

### Endotoxin:

< 1.0 EU per  $\mu$ g of the protein as determined by the LAL method

**Predicted N terminal:** Met 22

### Molecular Mass:

The recombinant human IFN $\beta$ /Fc is a disulfide-linked homodimeric protein. The reduced monomer consists of 404 amino acids and has a predicted molecular mass of 46.7 kDa. In SDS-PAGE under reducing conditions, the apparent molecular mass of rh IFN $\beta$ /Fc monomer is approximately 52 kDa due to glycosylation.

### Formulation:

Lyophilized from sterile 50 mM Tris, 100 mM NaCl, 10% Trehalose, 0.02% Tween 80, pH 8.5.

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

## Usage Guide

### Stability & Storage:

Samples are stable for twelve months from date of receipt at -20°C to -80°C.

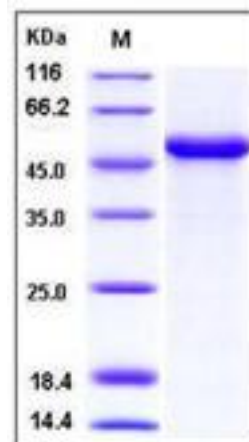
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

**Avoid repeated freeze-thaw cycles.**

### Reconstitution:

Detailed reconstitution instructions are sent along with the products.

## SDS-PAGE:



## Protein Description

Interferons (IFNs) are natural glycoproteins belonging to the cytokine superfamily and are produced by the cells of the immune system of most vertebrates in response to challenges by foreign agents such as viruses, parasites, and tumor cells. Interferon-beta (IFN beta) is an extracellular protein mediator of host defense and homeostasis. IFN beta has well-established direct antiviral, antiproliferative, and immunomodulatory properties. Recombinant IFN beta is approved for the treatment of relapsing-remitting multiple sclerosis. The recombinant IFN beta protein has the theoretical potential to either treat or causes autoimmune neuromuscular disorders by altering the complicated and delicate balances within the immune system networks. It is the most widely prescribed disease-modifying therapy for multiple sclerosis (MS). Large-scale clinical trials have established the clinical efficacy of IFN beta in reducing relapses and slowing disease progression in relapsing-remitting MS. IFN beta therapy was shown to be comparably beneficial for opticospinal MS (OSMS) and conventional MS in Japanese. IFN beta is effective in reducing relapses in secondary progressive MS and may have a modest effect in slowing disability progression. In addition to the common antiviral activity, IFN beta also induces increased production of the p53 gene product which promotes apoptosis and thus has a therapeutic effect against certain cancers. The role of IFN-beta in bone metabolism could warrant its systematic evaluation as a potential adjunct to therapeutic regimens of osteolytic diseases. Furthermore, IFN beta might play a beneficial role in the development of chronic progressive CNS inflammation.

## References

1. Kohriyama T, *et al.* (2008) Interferon-beta treatment for multiple sclerosis and predictors of response. *Nippon Rinsho*. 66(6): 1119-26.
2. Stbgen JP. (2009) Recombinant interferon-beta therapy and neuromuscular disorders. *J Neuroimmunol*. 212(1-2): 132-41.
3. Abraham AK, *et al.* (2009) Mechanisms of interferon-beta effects on bone homeostasis. *Biochem Pharmacol*. 77(12): 1757-62.