



## Certificate of Analysis

### Mouse Interferon Beta, carrier-free

**Catalog No:** 12401-1

**Lot No:**

**Expiration:**

**Size:** ~ 1 x 10<sup>5</sup> units/vial

**Description:** Recombinant Mouse Interferon Beta, carrier-free (Mu-IFN- )

**Volume:** ml

**Activity:** x 10 units/ml

**Specific Activity:** x 10 units/mg

**Buffer:** 20 mM HEPES, pH 6.0; 0.5M NaCl; 6% Glycerol

**Endotoxin:** < 1 EU/ g

**Molecular Weight:** 19.6 kDa

**Purity:** > 95%

**Purification Method:** A combination of ion exchange, hydrophobic interaction and size exclusion chromatography

**Source:** Gene was obtained from mouse DNA expressed in *E. coli* modified as described in Day, *et al.* (1992) %Engineered disulfide bond greatly increases specific activity of recombinant murine interferon beta+ ( *J. Interferon Res.* 12: 139-43)

**Synonyms:** Mouse Fibroblast Interferon

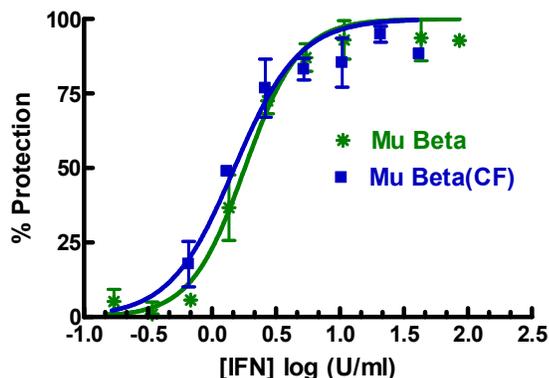
**Accession #:** K00020

**Assay Used to Measure Bioactivity:** Interferon was titrated with the use of the cytopathic effect inhibition assay as described [Rubinstein, S., Familletti, P.C., and Pestka, S. (1981) "Convenient Assay for Interferons," *J. Virol.* 37, 755-758; Familletti, P.C., Rubinstein, S., and Pestka, S. (1981) "A Convenient and Rapid Cytopathic Effect Inhibition Assay for Interferon," in *Methods in Enzymology*, Vol. 78 (S. Pestka, ed.), Academic Press, New York, 387-394]. Units of activity were measured on mouse L929 cells with encephalomyocarditis virus (EMCV); in this assay, the EC<sub>50</sub> for IFN Beta is ~2.5 U/ml. The activity was determined relative to a lab standard of Mu IFN- which was calibrated to the NIH Murine IFN-standard (Gb02-902-511). Lot Activity was derived from multiple determinations in the above assay. Please note that IFN assays vary between labs and assay systems [Meager *et al* (2001). *J. Immunol. Meth.* 257:17. Meager and Das (2005) *J. Immunol. Meth.* 306:1]

**Product Information:** Interferon Beta is generally the first Type I IFN to be expressed after viral infection. In the mouse, both IFN Beta and IFN Alpha4 prime cells for the production of the other Type I IFNs [Reviewed by Mesplède *et al.* (2003) *Autoimmunity* 36(8):447 and Asselin-Paturel & Trinchieri (2005) *J. Exp. Med.* 202(4):461]. Murine IFN beta was originally cloned by Higashi *et al.* [(1983) *J. Biol. Chem.* 258(15):9522] and has been engineered to contain a disulfide which confers added stability [Day *et al.*].

Selected references using Mouse Interferon Beta from PBL include: Jaini *et al.* [(2006) *Mol. Ther.* 14(3):416] compared injections of Mu IFN Beta to gene based therapy in experimental autoimmune encephalomyelitis, a murine model of multiple sclerosis. Hayashi, *et al.* [(2002) *J. Immunol.* 277(31):27880] and Fujimura *et al.* [(2006) *Infect. Immu.* 75(5);2544] demonstrated that Murine IFN Beta can inhibit differentiation of bone marrow macrophages into osteoclasts. Zhou and Perleman [(2007) *J. Vir.* 81(2):568] presented data that Mouse Hepatitis Virus does not induce IFN Beta, but also does not inhibit induction of IFN Beta by double stranded RNA. Kamath *et al.* [(2005) *J. Immunol.* 174(2):767] demonstrated that IFN Beta produced by dendritic cells activates bystander CD8+ T-cells.

### Comparison of Mu Beta with Carrier and Mu Beta Carrier Free Antiviral Activity



**Figure 1:** The activity of Mu Beta with carrier (PBL 12400) and Mu Beta, carrier free (PBL 12401) was compared in the L929/EMCV CPE assay. The EC<sub>50</sub> for Mu Beta in this experiment was 1.8 U/ml while the EC<sub>50</sub> for Mu Beta (CF) was 1.5 U/ml when calibrated to the international standard. Similar results were obtained for several batches of Mu Beta. *Results are representative and may vary depending upon experimental conditions.*

**Shipping Conditions:** Dry Ice

**Physical State of Product During Shipping:** Frozen

**Storage Conditions/Comments:** After receipt, the product should be kept at -70°C or below for retention of full activity. Thaw product vial by incubation in cold tap water until just thawed. The contents of the tube should be apportioned in separate tubes so that freezing and thawing is kept to a minimum. Refreezing should be done on dry ice or in a dry ice/alcohol bath. Further dilution of the product should be in buffers containing protein such as 0.1% bovine serum albumin (BSA). For more information on protein handling, visit our Resource Library at [www.pbl assaysci.com](http://www.pbl assaysci.com).

#### Authorization

Released by: \_\_\_\_\_

Date: \_\_\_\_\_

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