



## Certificate of Analysis

### Mouse Interferon Beta

**Catalog No:** 12400-1

**Lot No:**

**Expiration:**

**Size:**  $\geq 1 \times 10^5$  units/vial

**Description:** Recombinant Mouse Interferon Beta (Mu-IFN- $\beta$ )

**Volume:** ml

**Activity:**  $\times 10^6$  units/ml

**Specific Activity:**  $\times 10$  units/mg

**Buffer:** 20 mM HEPES, pH 6.0; 0.5M NaCl; 6% glycerol; 0.1% bovine serum albumin (BSA)

**Endotoxin:**  $< 0.1$  EU/ $\mu$ 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  $\sim 2.5$  U/ml. The activity was determined relative to a lab standard of Mu-IFN- $\beta$  which was calibrated to the NIH Murine IFN- $\beta$  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].

**Shipping Conditions:** Dry Ice

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

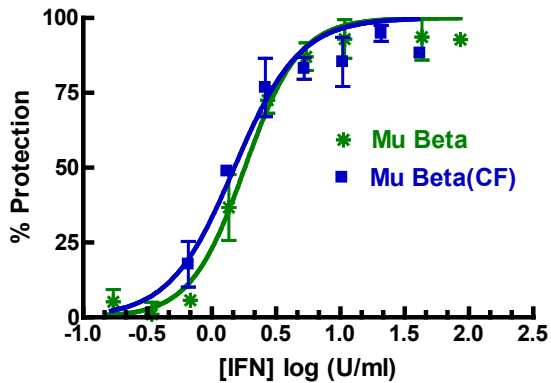
**Storage Conditions/Comments:** After receipt, the product should be kept at  $-70^\circ\text{C}$  or below for retention of full activity. Thaw product vial by incubation in cold tap water until just thawed – the contents of the tube should be apportioned in separate tubes so that freezing and thawing 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).

**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. Immunity.* 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.*

**Authorization**

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

Date:

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