



Certificate of Analysis

Mouse Interferon Beta

Catalog No: 12400-1

Lot No: 7414R

Expiration: January 26, 2024

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

Description: Recombinant Mouse Interferon Beta (Mu-IFN- β)

Volume: 0.100 ml

Activity: 1.97×10^6 units/ml

Specific Activity: 2.31×10^7 units/mg

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

Endotoxin: < 1 EU/ μ 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 EC₅₀ for IFN Beta is ~ 2.5 U/ml. The activity was determined relative to a lab standard of Mu-IFN- β which was calibrated to the NIH Murine IFN- β 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°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.

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

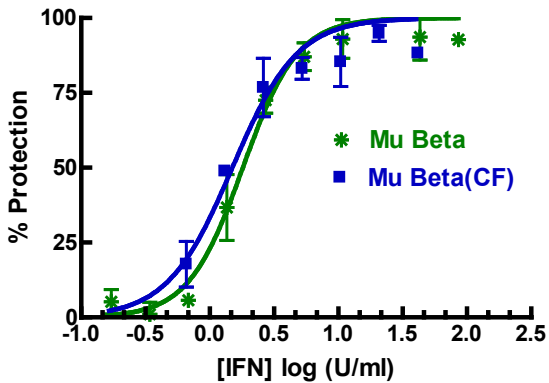


Figure 1: The activity of Mu Beta with carrier (PBL 12400) and Mu Beta, carrier-free (PBL 12401) was compared in the L929/EMCV CPE assay. The EC₅₀ for Mu Beta in this experiment was 1.8 U/ml while the EC₅₀ for Mu Beta (CF) was 1.5 U/ml when calibrated to the International standard. Similar results were obtained for several batches of Mu Beta. *Results are representative and may vary depending upon experimental conditions.*

Authorization

Released by: _____

Date: March 15, 2023

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