pbl assay science
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Certificate of Analysis

Mouse Interferon Beta, carrier-free

Catalog No: 12401-1
Lot No: 7601R
Expiration: January 30, 2025
Size: ≥ 1 x 10^5 units/vial

Description: Recombinant Mouse Interferon Beta, carrier-free (Mu-IFN-β)
Volume: 0.100 ml
Activity: 1.84 x 10^6 units/ml
Specific Activity: 1.44 x 10^7 units/mg
Buffer: 20 mM HEPES, pH 6.0; 0.5M NaCl; 6% Glycerol
Endotoxin: < 0.1 EU/µg
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_{50} 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]

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.

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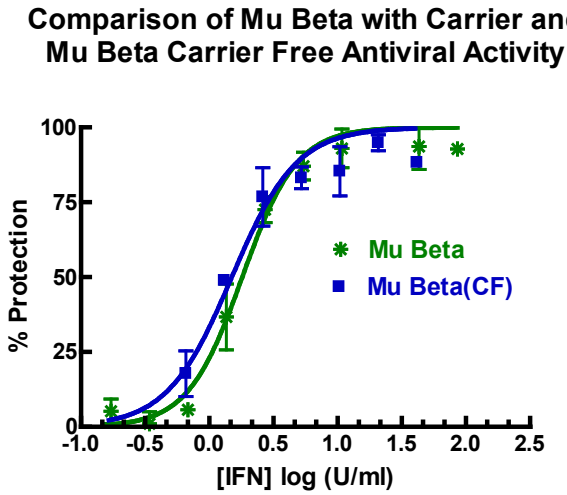

Figure 1: The activity of Mu Beta with carrier (PBL 12400) and Mu Beta, carrier free (PBL 12401) was compared in the L929/EMCV CPE assay. The EC_{50} for Mu Beta in this experiment was 1.8 U/ml while the EC_{50} for Mu Beta (CF) was 1.5 U/ml when calibrated to the international standard. Similar results 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.pblassaysci.com.

Authorization

Released by: _____ Date: April 30, 2024