



Certificate of Analysis

Mouse Interferon Alpha A

Catalog No: 12100-1

Lot No: 6012

Size: 1×10^5 units/vial

Description: Recombinant Mouse Interferon Alpha A

Volume: 0.1 ml

Activity: 1.82×10^6 units/ml

Specific Activity: 3.9×10^7 units/mg

Buffer: Phosphate buffered saline (PBS) containing 0.1% bovine serum albumin (BSA)

Endotoxin: < 1 EU/ g

Molecular Weight: 19.3 kDa

Purity: > 95%

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

Source: Murine Leukocyte Interferon cDNA expressed in *E. coli*

Synonyms: IFNA3, Interferon Alpha 3

Gene: IFNA

Accession #: NP_996753

Assay Used to Measure Bioactivity: Interferon was titrated with the use of the cytopathic effect inhibition assay as described [Familletti, *et al.* (1981) "A Convenience and Rapid Cytopathic Effect Inhibition Assay for Interferon," in *Methods in Enzymology*, Vol. 78 (S. Pestka, ed.), Academic Press, New York, 387-394] with the exception that EMCV rather than VSV was used as the challenge. The activity was determined relative to a lab standard of Mu IFN- A which was calibrated to the NIH Murine IFN- standard (Ga02-901-511). Mouse (L929/EMCV) in this assay the EC_{50} for IFN is ~ 5 U/ml. 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 may be stored at -20°C for short-term use (6 months). For long-term storage, we recommend storing the product 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: Most mammalian species have multiple IFN- subtypes. Although the reasons for these multiple subtypes are not fully known, there are clear cell type and temporal differences in their expression. A recent study established a nomenclature for the murine IFN- subtypes (van Pesch, *et al.* 2004) and determined relative activities of the subtypes with protein quantification by phosphorimaging of metabolically-labeled protein. In this study, Mu-IFN- A was deemed to have average antiviral activity when compared with the potency of the other subtypes.

Mu-IFN- A was initially cloned by Daugherty, *et al.* (1984) *J. Interferon Res.* 4(4) 635]. Being the first commercially available Mu-IFN- protein, it has been used extensively in published research reports. Expression of this subtype has been observed in neurons infected with Theiler's virus [Delhaye, *et al.* (2006) *PNAS* 103(20)7835]. Additionally, the protein has been shown to sensitize lymphocytes to undergo apoptosis [Cuerro, *et al.* (2004) *J. Exp. Med.* 200(4)535] and enhance the proliferation and differentiation of CD8 T-cells [Curtsinger, *et al.* (2005) *J. Immunol.* 174(8) 4465]. Furthermore, it was used to determine that B10.Q/J mice are susceptible to infection due to a Tyk2 mutation [Shaw, *et al.*

(2003) *PNAS* 100(20)11594]. Hardy, *et al.* [*Genomics* (2004) 84:331] recently suggested a name of IFN Alpha 3 based on sequence comparison of the Mu-IFN- subtype family of proteins.

Comparison of Mu Alpha-A and Mu Alpha-4 Antiviral Activity

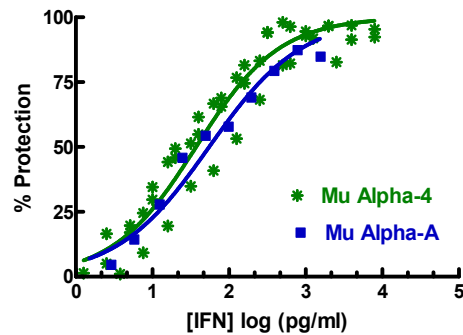


Figure 1: The activity of Mu Alpha-A and Mu Alpha-4 was compared in an L929/EMCV CPE assay. The EC_{50} for Mu Alpha-A in this experiment was 54 pg/ml, while the EC_{50} for Mu Alpha-4 was 37 pg/ml. Similar results were obtained for several batches of Mu Alpha-A.

Results are representative and may vary depending upon experimental conditions.

Authorization

Released by: _____

Date: June 3, 2014

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