



## Certificate of Analysis

### Universal Type I Interferon

**Catalog No:** 11200-2

**Lot No:** 7192

**Size:**  $\geq 1 \times 10^6$  units

**Description:** Recombinant Human Interferon Alpha hybrid protein; Universal Type I IFN is an alpha interferon hybrid (Human Interferon Alpha A/D [BgII]) constructed from recombinant Human IFN alpha A and Human IFN alpha D. Activity has been observed on many mammalian cells, including human, monkey, mouse, bovine, rat, cat, pig, rabbit, guinea pig, or hamster. This product is useful for cross-species testing with Interferon or for species where autologous interferon is not available.

**Volume:** 0.100 ml

**Activity:**  $2.06 \times 10^7$  units/ml (MDBK/VSV)

**Specific Activity:**  $2.28 \times 10^8$  units/mg (MDBK/VSV)

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

**Endotoxin:**  $< 1$  EU/ $\mu$ g

**Molecular Weight:** 19.4 kDa

**Purity:**  $> 95\%$

**Purification Method:** A combination of ion exchange, hydrophobic interaction and gel permeation chromatography

**Source:** Construct described in Rehberg, E., (1982) *J. Biol. Chem.* 257: 11497 derived from *E. coli*

**Synonyms:** Hu-IFN- $\alpha$ A/D [BgII]

**Accession #:** Not applicable

**Human Gene:** Not applicable

**Assay Used to Measure Bioactivity:** Interferon was titrated in the Cytopathic Effect Inhibition (CPE) assays as listed.

*Bovine (MDBK/VSV)* – performed as described [Rubinstein, *et al.* (1981) *J. Virol.* 37(2):755]. The EC<sub>50</sub> for interferon in this assay is  $\sim 5$  U/ml.

*Human (A549/EMCV)* – performed as described [Budd, *et al.* (1985) *Canc. Chem. Pharm.* 12:39]. The EC<sub>50</sub> for interferon in this assay is  $\sim 1$  U/ml.

**Activity:**  $1.29 \times 10^7$  units/ml      **Specific Activity:**  $1.43 \times 10^8$  units/mg

*Mouse (L929/EMCV)* – developed and performed at PBL Biomedical Laboratories. The EC<sub>50</sub> for interferon in this assay is  $\sim 5$  U/ml.

**Activity:**  $6.60 \times 10^5$  units/ml      **Specific Activity:**  $7.33 \times 10^6$  units/mg

The units are determined by use of a Human IFN Alpha A (Hu-IFN- $\alpha$ A [2a]) laboratory standard calibrated to the international reference standard for Human Interferon Alpha A (Hu-IFN- $\alpha$ A [2a]) provided by the National Institutes of Health [Meager, *et al.* (2001) *J. Immunol. Methods.* 257(1-2):17-33]. On L929 cells the laboratory standard has been calibrated to the reference standard for Mouse Interferon Alpha provided by the National Institutes of Health. 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

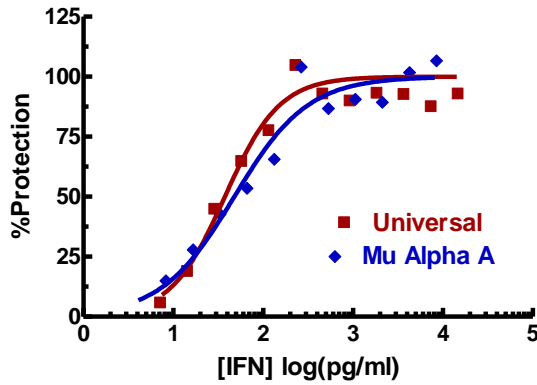
**Physical State of Product During Shipping:** Frozen

**Storage Conditions/Comments:** After receipt, the product may be stored at  $-20^{\circ}\text{C}$  for short-term use ( $\leq 6$  months). For long-term storage, we recommend storing the product 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).

### Comparison of Universal IFN and Mouse Alpha A Antiviral Activity on Mouse Cells



**Figure 1:** The activity of Mouse IFN Alpha-A and Universal Type-I IFN was compared in an L929/EMCV CPE assay. The EC<sub>50</sub> for Universal IFN in this experiment was 38 pg/ml while the EC<sub>50</sub> for Mu Alpha-A was 48 pg/ml. Similar results were obtained for several batches of Mouse Alpha-A. Results are representative and may vary depending upon experimental conditions.

**Authorization**

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

Date: March 17, 2020

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