



## Certificate of Analysis

### Human Interferon Alpha 4b (Alpha 4)

**Catalog No:** 11180-1

**Lot No:**

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

**Description:** Recombinant Human Interferon Alpha 4b (Alpha 4) (Hu-IFN- $\alpha$ 4b; Hu-IFN- $\alpha$ 4)

**Volume:** 0.1 ml

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

**Specific Activity:**  $\times 10$  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:**  $\geq 95\%$

**Purification Method:** Purified from *E. coli* by a combination of ion exchange, hydrophobic interaction and size exclusion chromatography

**Source:** cDNA obtained from human leukocyte mRNA expressed in *E. coli*

**Human Gene:** IFNA4

**Synonyms:** Hu-IFN- $\alpha$ 4

**Accession #:** X02955

**Assay Used to Measure Bioactivity:** Interferon was titrated with the use of the cytopathic effect inhibition assay 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. Lot Activity was derived from multiple determinations in the above assay.

*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:**  $\times 10$  units/ml **Specific Activity:**  $\times 10$  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. Meth.* 257(1-2):17-33]. 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. When thawing, 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) or tissue culture media with serum. Dilution of material below  $2 \times 10^5$  units/ml for freezing is not recommended. One freeze-thaw cycle is equivalent to thawing an aliquot prepared from the material received. [The activity measured after one freeze-thaw cycle is  $\times 10$  units/ml (MDBK/VSV)]. For more information on protein handling, visit our Resource Library at [www.pblassaysci.com](http://www.pblassaysci.com).

### Authorization

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

Date:

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