

# IFN- $\gamma$ (hBA-143): sc-4587

## BACKGROUND

Interferon (IFN)- $\gamma$  is an antiviral and antiparasitic agent produced by CD4<sup>+</sup>/CD8<sup>+</sup> lymphocytes and natural killer cells that undergo activation by antigens, mitogens or alloantigens. IFN- $\gamma$  production modulates T cell growth and differentiation and inhibits the growth of B cells. Synthesis of IFN- $\gamma$  is inducible by IL-2, FGF and EGF. The active form of IFN- $\gamma$  is a homodimer with each subunit containing six helices. The dimeric structure of human IFN- $\gamma$  is stabilized by non-covalent interactions through the interface of the helices. IFN- $\gamma$  translated precursor is 166 amino acids, including the 23 amino acid secretory sequence. Multiple forms exist due to variable glycosylation and under non-denaturing conditions due to dimers and tetramers.

## REFERENCES

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3. Okamura, H., Kashiwamura, S., Tsutsui, H., Yoshimoto, T. and Nakanishi, K. 1998. Regulation of IFN- $\gamma$  production by IL-12 and IL-18. *Curr. Opin. Immunol.* 10: 259-264.
4. Costa-Pereira, A.P., Williams, T.M., Strobl, B., Watling, D., Briscoe, J. and Kerr, I.M. 2002. The antiviral response to IFN- $\gamma$ . *J. Virol.* 76: 9060-9068.
5. Zika, E., Greer, S.F., Zhu, X.S. and Ting, J.P. 2003. Histone deacetylase 1/mSin3A disrupts IFN- $\gamma$ -induced CIITA function and major histocompatibility complex class II enhanceosome formation. *Mol. Cell. Biol.* 23: 3091-3102.
6. Schroder, K., Hertzog, P.J., Ravasi, T. and Hume, D.A. 2004. IFN- $\gamma$ : an overview of signals, mechanisms and functions. *J. Leukoc. Biol.* 75: 163-189.
7. Ellis, T.N. and Beaman, B.L. 2004. IFN- $\gamma$  activation of polymorphonuclear neutrophil function. *Immunology* 112: 2-12.
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9. Halfter, U.M., Derbyshire, Z.E. and Vaillancourt, R.R. 2005. IFN- $\gamma$ -dependent tyrosine phosphorylation of MEKK4 via Pyk2 is regulated by annexin II and SHP2 in keratinocytes. *Biochem. J.* 388: 17-28.

## SOURCE

IFN- $\gamma$  (hBA-143) is produced in *E. coli* as 43 kDa GST-tagged biologically active protein corresponding to 143 amino acids of IFN- $\gamma$  of human origin.

## PRODUCT

IFN- $\gamma$  (hBA-143) is purified from bacterial lysates (>98%); supplied as 100  $\mu$ g purified protein.

## BIOLOGICAL ACTIVITY

IFN- $\gamma$  (hBA-143) is biologically active as determined by viral resistance assay.

Specific Activity: Greater than  $3 \times 10^7$  units/mg.

## RECONSTITUTION

In order to avoid freeze/thaw damaging of the active protein, dilute protein when first used to desired working concentration. Either a sterile filtered standard buffer (such as 50mM TRIS or 1X PBS) or water can be used for the dilution. Store any thawed aliquot in refrigeration at 2° C to 8° C for up to four weeks, and any frozen aliquot at -20° C to -80° C for up to one year. It is recommended that frozen aliquots be given an amount of standard cryopreservative (such as Ethylene Glycol or Glycerol 5-20% v/v), and refrigerated samples be given an amount of carrier protein (such as heat inactivated FBS or BSA to 0.1% v/v) or non-ionic detergent (such as Triton X-100 or Tween 20 to 0.005% v/v), to aid stability during storage.

## SELECT PRODUCT CITATIONS

1. Akan, Z., Aksu, B., Tulunay, A., Bilsel, S. and Inhan-Garip, A. 2010. Extremely low-frequency electromagnetic fields affect the immune response of monocyte-derived macrophages to pathogens. *Bioelectromagnetics* 31: 603-612.

## STORAGE

Store desiccated at -20° C; stable for one year from the date of shipment.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.