IFN-β (NYRhIFN-β): sc-73302

SANTA CRUZ®
BIOTECHNOLOGY

The Power to Question

BACKGROUND

The genes encoding type I interferons (IFNs), which include 14 IFN-α genes, one IFN-β gene, one IFN-ω (also known as IFN-α Il1) gene and a number of IFN-ω pseudogenes, are clustered on human chromosome 9. Interferons-α and -β are cytokines that are widely known to induce potent antiviral activity. IFN-α and -β exert a variety of other biological effects, including antitumor and immunomodulatory activities, and are increasingly used clinically to treat a range of malignancies, myelodysplasias and autoimmune diseases. IFN-ω is antigenically different from human IFN-α, IFN-β or IFN-γ, but is a component of natural mixtures of IFN species produced by virus-induced leukocytes or Burkitt's lymphoma cells. The type I interferon receptor (IFN-αR) interacts with IFN-α, IFN-β and IFN-ω, and seems to be a multisubunit receptor.

REFERENCES

1. Adolf, G.R. 1987. Antigenic structure of human interferon-ω1 (interferon-α Il1): comparison with other human interferons. J. Gen. Virol. 68: 1669-1676.

2. Lim, J.K., et al. 1994. Intrinsic ligand binding properties of the human and bovine α-interferon receptors. FEBS Lett. 350: 281-286.

3. Hussain, M., et al. 1996. Identification of interferon-α 7, -α 14 and -α 21 variants in the genome of a large human population. J. Interferon Cytokine Res. 16: 853-859.

4. Mire-Sluis, A.R., et al. 1996. An anti-cytokine bioactivity assay for interferons-α, -β and -ω. J. Immunol. Methods 195: 55-61.

5. Cutrone, E.C., et al. 1997. Contributions of cloned type I interferon receptor subunits to differential ligand binding. FEBS Lett. 404: 197-202.

6. Vannucchi, S., et al. 2005. TRAIL is a key target in S-phase slowing-dependent apoptosis induced by interferon-β in cervical carcinoma cells. Oncogene 24: 2536-2546.

7. Siren, J., et al. 2005. IFN-α regulates TLR-dependent gene expression of IFN-α, IFN-β, IL-28 and IL-29. J. Immunol.174: 1932-1937.

8. Molnarfi, N., et al. 2005. The production of IL-1 receptor antagonist in IFN-β-stimulated human monocytes depends on the activation of phosphatidylinositol 3-kinase but not of Stat1. J. Immunol. 174: 2974-2980.

CHROMOSOMAL LOCATION

Genetic locus: IFNB1 (human) mapping to 9p21.3.

SOURCE

IFN-β (NYRhIFN-β) is a mouse monoclonal antibody raised against recombinant IFN-β of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

IFN-β (NYRhIFN-β) is recommended for detection of IFN-β of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for IFN-β siRNA (h): sc-39603, IFN-β shRNA Plasmid (h): sc-39603-SH and IFN-β shRNA (h) Lentiviral Particles: sc-39603-V.

Molecular Weight of IFN-β: 20 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2050 or ABC: sc-2017 mouse IgG Staining Systems.

SELECT PRODUCT CITATIONS

1. Shao, L., et al. 2014. Inflammatory unbalance of TLR3 and TLR4 in PCI patients with or without type 2 diabetes mellitus. Immunol. Lett. 161: 81-88.

2. Liang, S., et al. 2016. TLR3 and TLR4 as potential clinical biomarkers for in-stent restenosis in drug-eluting stents patients. Immunol. Res. 64: 424-430.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.