IFN-β (A1): sc-53968

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 II1) gene and a number of IFN-ω pseudogenes, are clustered on human chromosome 9. IFN-α and -β are cytokines that are widely known to induce potent antiviral activity. They exert a variety of other biological effects, including antitumor and immuno-modulatory activities, and are increasingly used clinically to treat a range of malignancies, myelodysplasias and autoimmune diseases. IFN-ω is an-tigenically 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

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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.

CHROMOSOMAL LOCATION

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

SOURCE

IFN-β (A1) is a mouse monoclonal antibody raised against recombinant IFN-β of human origin.

PRODUCT

Each vial contains 200 µg IgG$_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

IFN-β (A1) is available conjugated to agarose (sc-53968 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53968 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53968 PE), fluorescein (sc-53968 FITC), Alexa Fluor® 488 (sc-53968 AF488), Alexa Fluor® 546 (sc-53968 AF546), Alexa Fluor® 594 (sc-53968 AF594) or Alexa Fluor® 647 (sc-53968 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53968 AF680) or Alexa Fluor® 790 (sc-53968 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

IFN-β (A1) is recommended for detection of IFN-β of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)]; non cross-reactive with human IFNα or IFN-γ or mouse IFN-β.

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

Molecular Weight of IFN-β: 20 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunopre-cipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA
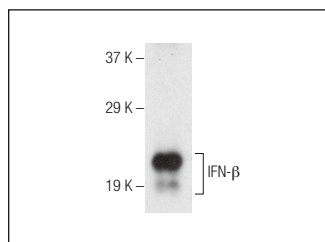
IFN-β (A1): sc-53968. Western blot analysis of human recombinant IFN-β.

SELECT PRODUCT CITATIONS

1. Branscome, H., et al. 2020. Stem cell extracellular vesicles and their poten-tial to contribute to the repair of damaged CNS cells. J. Neuroimmune Pharmacol. 15: 520-537.

2. Frietze, K.K., et al. 2022. Lipotoxicity reduces DDX58/Rig-1 expression and activity leading to impaired autophagy and cell death. Autophagy 18: 142-160.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

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

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