SANTA CRUZ BIOTECHNOLOGY, INC.

IFN-α (5D4): sc-80996

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. 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 multi-subunit receptor.

REFERENCES

1. Adolf, G.R. 1987. Antigenic structure of human interferon-ω1 (interferon-α II1): 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. Rozera, C., et al. 1999. Interferon (IFN)-β gene transfer into TS/A adenocarcinoma cells and comparison with IFN-α: differential effects on tumor-igenicity and host response. Am. J. Pathol. 154: 1211-1222.
7. Barthe, C., et al. 2001. Expression of interferon-α (IFN-α) receptor 2c at diagnosis is associated with cytogenetic response in IFN-α-treated chronic myeloid leukemia. Blood 97: 3568-3573.
8. Eriksen, K.W., et al. 2004. Bi-phasic effect of interferon (IFN)-α: IFN-α up- and downregulates interleukin-4 signaling in human T cells. J. Biol. Chem. 279: 169-176.
9. Suyama, T., et al. 2005. Upregulation of the interferon-γ (IFN-γ)-inducible chemokines IFN-inducible T cell α chemoattractant and monokine induced by IFN-γ and of their receptor CXC receptor 3 in human renal cell carcinoma. Cancer 103: 258-267.

SOURCE

IFN-α (5D4) is a mouse monoclonal antibody raised against recombinant IFN-α 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.

APPLICATIONS

IFN-α (5D4) is recommended for detection of all IFN-α subtypes 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)].

Molecular Weight of IFN-α: 19 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

SELECT PRODUCT CITATIONS

1. Liu, L., et al. 2012. Proteome alterations in primary human alveolar macrophages in response to influenza A virus infection. J. Proteome Res. 11: 4091-4101.
2. Sarkar, M.K., et al. 2018. Photosensitivity and type I IFN responses in cutaneous lupus are driven by epidermal-derived interferon κ. Ann. Rheum. Dis. 77: 1653-1664.
3. Tsoi, L.C., et al. 2020. IL18-containing 5-gene signature distinguishes histologically identical dermatomyositis and lupus erythematosus skin lesions. JCI Insight 5: e139558.
4. Deng, S., et al. 2023. Downregulation of RCN1 promotes pyroptosis in acute myeloid leukemia cells. Mol. Oncol. 17: 2584-2602.

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.