SANTA CRUZ BIOTECHNOLOGY, INC.

IFN-αR1 (MAR1-5A3): sc-53591

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The type I interferons (IFNs), α and β, are a group of structurally and functionally related proteins that are induced by either viruses or double stranded RNA and defined by their ability to confer an antiviral state in cells. The α and β IFNs appear to compete with one another for binding to a common cell surface receptor, while immune IFN (IFN-γ) binds to a distinct receptor. The latter protein, IFN-αR, is only weakly responsive to type I interferons in contrast to IFN-α/βR, which binds to and responds effectively to IFN-β and to several of the IFN-α subtypes. Moreover, IFN-α/βR is physically associated with the cytoplasmic tyrosine kinase JAK1 and thus, in addition to ligand binding, appears to be functionally involved in signal transduction. IFN-αR1 is a receptor for IFN-α/β and is present as the full chain (IFN-αR1a) and as a splice-variant (IFN-αR1). The IFN-γ receptor complex consists of an α subunit (IFN-γRα) and a β subunit that is 332 amino acids in length (mouse) and 337 amino acids in length (human).

CHROMOSOMAL LOCATION

Genetic locus: Ifnar1 (mouse) mapping to 16 C3.3.

SOURCE

IFN-αR1 (MAR1-5A3) is a mouse monoclonal antibody raised against the extracellular domain of IFN-αR1 of mouse 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. Also available azide-free for neutralizing, sc-53591 L, 200 µg/0.1 ml.

IFN-αR1 (MAR1-5A3) is available conjugated to agarose (sc-53591 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53591 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53591 PE), fluorescein (sc-53591 FITC), Alexa Fluor® 488 (sc-53591 AF488), Alexa Fluor® 546 (sc-53591 AF546), Alexa Fluor® 594 (sc-53591 AF594) or Alexa Fluor® 647 (sc-53591 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53591 AF680) or Alexa Fluor® 790 (sc-53591 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

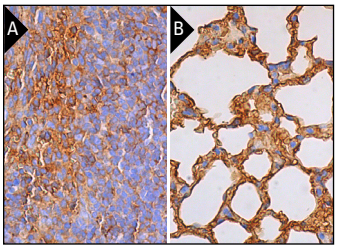
IFN-αR1 (MAR1-5A3) is recommended for detection of IFN-αR1 of mouse origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10^6 cells).

Suitable for use as control antibody for IFN-α/βRα siRNA (m): sc-40090, IFN-α/βRα shRNA Plasmid (m): sc-40090-SH and IFN-α/βRα shRNA (m) Lentiviral Particles: sc-40090-V.

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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



IFN-αR1 (MAR1-5A3): sc-53591. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse spleen tissue showing cytoplasmic and membrane staining of cells in white pulp and cells in red pulp (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse lung tissue showing cytoplasmic and nuclear staining of pneumocytes and macrophages (**B**).

SELECT PRODUCT CITATIONS

1. Satie, A.P., et al. 2011. Excess type I interferon signaling in the mouse seminiferous tubules leads to germ cell loss and sterility. J. Biol. Chem. 286: 23280-23295.
2. Zheng, Z., et al. 2013. Human microRNA hsa-miR-296-5p suppresses enterovirus 71 replication by targeting the viral genome. J. Virol. 87: 5645-5656.
3. Kavrochorianou, N., et al. 2016. IFNAR signaling directly modulates T lymphocyte activity, resulting in milder experimental autoimmune encephalomyelitis development. J. Leukoc. Biol. 99: 175-188.
4. Sheng, W., et al. 2018. LSD1 ablation stimulates anti-tumor immunity and enables checkpoint blockade. Cell 174: 549-563.e19.
5. Itakura, Y., et al. 2022. Glu333 in rabies virus glycoprotein is involved in virus attenuation through astrocyte infection and interferon responses. iScience 25: 104122.

RESEARCH USE

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

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