SANTA CRUZ BIOTECHNOLOGY, INC.

IFI-16 (1G7): sc-8023

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Interferon-inducible proteins include IFI-202, IFI-203, IFI-204 and D3, and are encoded by six or more structurally related and IFN-inducible mouse genes mapping at the q21-q23 region of chromosome 1. The proteins encoded by these genes have homologous 200 amino acid segments. IFI-202 is a primarily nuclear phosphoprotein which inhibits cell growth, in part by modulating transcriptional activity of NFκB, E2F, AP-1 and p53. Two related human proteins, MNDA (myeloid cell nuclear differentiation antigen) and IFI-16, have also been described. Expression of MNDA has been observed specifically in cells of the granulocyte-macrophage lineage. IFI-16 is constitutively expressed in various T and B cell lines and can be induced by IFN-γ in HL-60 cells. At least four of the gene-200 cluster of IFN-inducible proteins, IFI-202, IFI-204, MNDA and IFI-16, are localized in the nucleus.

CHROMOSOMAL LOCATION

Genetic locus: IFI16 (human) mapping to 1q23.1.

SOURCE

IFI-16 (1G7) is a mouse monoclonal antibody raised against amino acids 1-159 mapping at the N-terminus of IFI-16 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.

IFI-16 (1G7) is available conjugated to agarose (sc-8023 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-8023 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-8023 PE), fluorescein (sc-8023 FITC), Alexa Fluor® 488 (sc-8023 AF488), Alexa Fluor® 546 (sc-8023 AF546), Alexa Fluor® 594 (sc-8023 AF594) or Alexa Fluor® 647 (sc-8023 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-8023 AF680) or Alexa Fluor® 790 (sc-8023 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

IFI-16 (1G7) is recommended for detection of IFI-16 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), flow cytometry (1 µg per 1 x 10^6 cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for IFI-16 siRNA (h): sc-35633, IFI-16 shRNA Plasmid (h): sc-35633-SH and IFI-16 shRNA (h) Lentiviral Particles: sc-35633-V.

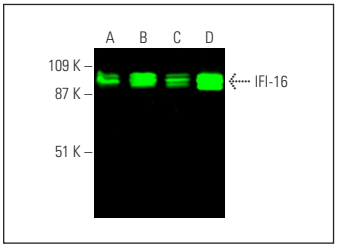
Molecular Weight of IFI-16: 85-95 kDa.

Positive Controls: BJAB whole cell lysate: sc-2207, Jurkat nuclear extract: sc-2132 or HuT 78 whole cell lysate: sc-2208.

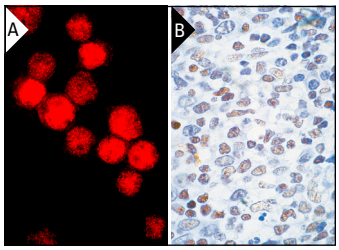
STORAGE

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

DATA



IFI-16 (1G7): sc-8023. Near-infrared western blot analysis of IFI-16 expression in BJAB (**A**), HuT 78 (**B**) and MOLT-4 (**C**) whole cell lysates and Jurkat nuclear extract (**D**). Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.



IFI-16 (1G7): sc-8023. Immunofluorescence staining of methanol-fixed BJAB cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin-fixed, paraffin-embedded normal human tonsil cells showing nuclear localization (**B**).

SELECT PRODUCT CITATIONS

1. Kwak, J.C., et al. 2003. IFI-16 as a negative regulator in the regulation of p53 and $p21^{Waf1}$. J. Biol. Chem. 278: 40899-40904.
2. Kaakoush, N.O., et al. 2015. Transcriptomic and proteomic analyses reveal key innate immune signatures in the host response to the gastrointestinal pathogen *Campylobacter concisus*. Infect. Immun. 83: 832-845.
3. Roy, A., et al. 2016. Nuclear innate immune DNA sensor IFI16 is degraded during lytic reactivation of kaposi's sarcoma-associated herpesvirus (KSHV): role of IFI16 in maintenance of KSHV latency. J. Virol. 90: 8822-8841.
4. Cerboni, S., et al. 2017. Intrinsic antiproliferative activity of the innate sensor STING in T lymphocytes. J. Exp. Med. 214: 1769-1785.
5. Wang, P.H., et al. 2018. Inhibition of AIM2 inflammasome activation by a novel transcript isoform of IFI16. EMBO Rep. 19: e45737.
6. Maekawa, H., et al. 2019. Mitochondrial damage causes inflammation via cGAS-STING signaling in acute kidney injury. Cell Rep. 29: 1261-1273.e6.
7. El-Asmi, F., et al. 2020. Cross-talk between SUMOylation and ISGylation in response to interferon. Cytokine 129: 155025.
8. Hu, Z., et al. 2021. SENP3 senses oxidative stress to facilitate STING-dependent dendritic cell antitumor function. Mol. Cell 81: 940-952.e5.
9. Mishra, S., et al. 2022. Innate immune sensing of influenza A viral RNA through IFI16 promotes pyroptotic cell death. iScience 25: 103714.
10. Liu, D., et al. 2023. IFI16 phase separation via multi-phosphorylation drives innate immune signaling. Nucleic Acids Res. 51: 6819-6840.
11. Naderi, J., et al. 2024. An activity-specificity trade-off encoded in human transcription factors. Nat. Cell Biol. 26: 1309-1321.

RESEARCH USE

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