SANTA CRUZ BIOTECHNOLOGY, INC.

IFITM1/2/3 (F-12): sc-374026

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Interferons (IFNs) are potential antitumor agents, as they exhibit antiproliferative and differentiating properties, in addition to functioning in the defense against microbial infections. IFN exposure induces the regulation of expression levels of cellular proteins that mediate the pleiotropic effects of interferons. These effects may be mediated by soluble factors or by cell-cell interactions involving specific membrane proteins. The IFITM family of proteins are transmembrane proteins so named because their expression is IFN-inducible. IFITM proteins have been found upregulated in human colorectal carcinomas. Both mouse IFITM1 (also known as CD225) and Fragilis (also known as Ifitm3) demonstrate expression on the cell surfaces of primordial germ cells in a developmentally-regulated manner. They presumably modulate cell adhesion and influence cell differentiation. IFITM1 activity is required for primordial germ cell transit, and IFITM1 acts as a repulsive molecule by repelling non-IFITM1-expressing primordial germ cells from the mesoderm into the endoderm.

CHROMOSOMAL LOCATION

Genetic locus: IFITM1/IFITM2/IFITM3 (human) mapping to 11p15.5.

SOURCE

IFITM1/2/3 (F-12) is a mouse monoclonal antibody raised against amino acids 1-125 representing full length IFITM1 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.

IFITM1/2/3 (F-12) is available conjugated to agarose (sc-374026 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-374026 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374026 PE), fluorescein (sc-374026 FITC), Alexa Fluor® 488 (sc-374026 AF488), Alexa Fluor® 546 (sc-374026 AF546), Alexa Fluor® 594 (sc-374026 AF594) or Alexa Fluor® 647 (sc-374026 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374026 AF680) or Alexa Fluor® 790 (sc-374026 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

IFITM1/2/3 (F-12) is recommended for detection of IFITM1, IFITM2 and IFITM3 of human origin by Western Blotting (starting dilution 1:100, 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).

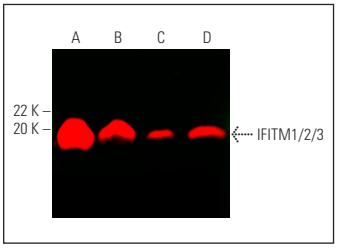
Molecular Weight of IFITM1/2/3: 17 kDa.

Positive Controls: MEG-01 cell lysate: sc-2283, HeLa whole cell lysate: sc-2200 or K-562 whole cell lysate: sc-2203.

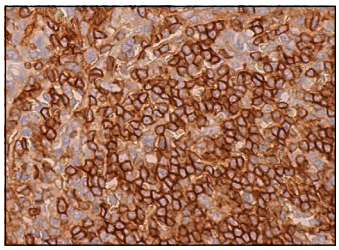
STORAGE

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

DATA



IFITM1/2/3 (F-12): sc-374026. Near-infrared western blot analysis of IFITM1/2/3 expression in K-562 (**A**), MEG-01 (**B**) and HeLa (**C**) whole cell lysates and human spleen tissue extract (**D**). Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 790: sc-516181.



IFITM1/2/3 (F-12): sc-374026. Immunoperoxidase staining of formalin fixed, paraffin-embedded human spleen tissue showing membrane and cytoplasmic staining of cells in white pulp and cells in red pulp.

SELECT PRODUCT CITATIONS

1. Fu, Y., et al. 2017. IFITM1 suppresses expression of human endogenous retroviruses in human embryonic stem cells. FEBS Open Bio 7: 1102-1110.
2. Soday, L., et al. 2019. Quantitative temporal proteomic analysis of vaccinia virus infection reveals regulation of histone deacetylases by an interferon antagonist. Cell Rep. 27: 1920-1933.e7.
3. Provance, O.K., et al. 2021. Disrupting interferon-α and NFκB crosstalk suppresses IFITM1 expression attenuating triple-negative breast cancer progression. Cancer Lett. 514: 12-29.
4. Prelli Bozzo, C., et al. 2021. IFITM proteins promote SARS-CoV-2 infection and are targets for virus inhibition *in vitro*. Nat. Commun. 12: 4584.
5. Escher, T.E., et al. 2021. Enhanced IFNα signaling promotes ligand-independent activation of ERα to promote aromatase inhibitor resistance in breast cancer. Cancers 13: 5130.
6. Talbot-Cooper, C., et al. 2022. Poxviruses and paramyxoviruses use a conserved mechanism of Stat1 antagonism to inhibit interferon signaling. Cell Host Microbe 30: 357-372.e11.
7. Mun, S., et al. 2022. Transcriptome profile of membrane and extracellular matrix components in ligament-fibroblastic progenitors and cementoblasts differentiated from human periodontal ligament cells. Genes 13: 659.
8. Lu, Y., et al. 2022. Manipulation of innate immune signaling pathways by SARS-CoV-2 non-structural proteins. Front. Microbiol. 13: 1027015.
9. Hong, Y., et al. 2023. Microglia-containing cerebral organoids derived from induced pluripotent stem cells for the study of neurological diseases. iScience 26: 106267.

RESEARCH USE

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