SANTA CRUZ BIOTECHNOLOGY, INC.

GBP1 (1B1): sc-53857

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

GBP1 (guanylate binding protein 1) is a 592 amino acid protein member of the GTPase protein family and is able to bind specifically to guanine nucleotides such as GMP, GDP and GTP. GMP is hydrolyzed to GTP in two consecutive cleavage steps, both of which are carried out by GBP1. Localized to the cytoplasm, GBP1 is expressed in endothelial cells of the vascular system and is induced by IFN-γ during macrophage induction. GBP1 is thought to regulate the expression of MMP-1, which mediates the proliferation and invasiveness of endothelial cells. GBP1 plays a key role in regulating inflammatory cytokines and provides protection against vesicular stomatitis and encephalomyocarditis viruses. GBP1 expression is highly induced in the vessels of skin diseases such as psoriasis and Kaposi's sarcoma, making it a novel cellular activation marker that characterizes inflammatory cytokines of endothelial cells.

CHROMOSOMAL LOCATION

Genetic locus: GBP1 (human) mapping to 1p22.2.

SOURCE

GBP1 (1B1) is a rat monoclonal antibody raised against His-GBP1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

GBP1 (1B1) is available conjugated to agarose (sc-53857 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53857 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53857 PE), fluorescein (sc-53857 FITC), Alexa Fluor® 488 (sc-53857 AF488), Alexa Fluor® 546 (sc-53857 AF546), Alexa Fluor® 594 (sc-53857 AF594) or Alexa Fluor® 647 (sc-53857 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53857 AF680) or Alexa Fluor® 790 (sc-53857 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

GBP1 (1B1) is recommended for detection of GBP1 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) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for GBP1 siRNA (h): sc-72088, GBP1 shRNA Plasmid (h): sc-72088-SH and GBP1 shRNA (h) Lentiviral Particles: sc-72088-V.

Molecular Weight of GBP1: 67 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, HUVEC whole cell lysate or BT-20 cell lysate: sc-2223.

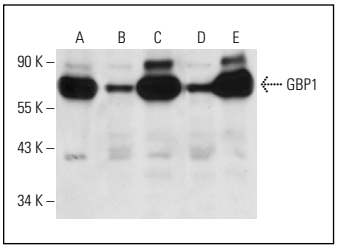
STORAGE

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

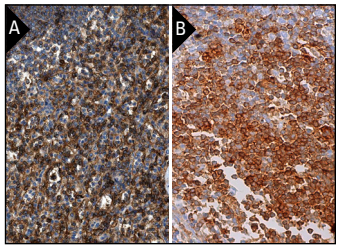
RESEARCH USE

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

DATA



GBP1 (1B1): sc-53857. Western blot analysis of GBP1 expression in HUVEC (**A**), MCF7 (**B**,**D**) and BT-20 (**C**,**E**) whole cell lysates under reducing (**A**,**B**,**C**) and non-reducing (**D**,**E**) conditions.



GBP1 (1B1): sc-53857. Immunoperoxidase staining of formalin fixed, paraffin-embedded human spleen tissue showing cytoplasmic and membrane staining of cells in red and white pulps. Kindly provided by The Swedish Human Protein Atlas (HPA) program (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node tissue showing cytoplasmic and membrane staining of cells in non-germinal center (**B**).

SELECT PRODUCT CITATIONS

1. Ito, Y., et al. 2008. Oligonucleotide microarray analysis of gene expression profiles followed by real-time reverse-transcriptase polymerase chain reaction assay in chronic active Epstein-Barr virus infection. J. Infect. Dis. 197: 663-666.
2. Chi, L.M., et al. 2009. Enhanced interferon signaling pathway in oral cancer revealed by quantitative proteome analysis of microdissected specimens using 16O/18O labeling and integrated two-dimensional LC-ESI-MALDI tandem MS. Mol. Cell. Proteomics 8: 1453-1474.
3. De Donato, M., et al. 2012. Class III β-Tubulin and the cytoskeletal gateway for drug resistance in ovarian cancer. J. Cell. Physiol. 227: 1034-1041.
4. Zhu, Z., et al. 2013. Nonstructural protein 1 of Influenza A Virus interacts with human guanylate-binding protein 1 to antagonize antiviral activity. PLoS ONE 8: e55920.
5. Quiros, M., et al. 2017. Macrophage-derived IL-10 mediates mucosal repair by epithelial WISP-1 signaling. J. Clin. Invest. 127: 3510-3520.
6. Lin, R., et al. 2018. A hybridization-chain-reaction-based method for amplifying immunosignals. Nat. Methods 15: 275-278.
7. El-Asmi, F., et al. 2020. Cross-talk between SUMOylation and ISGylation in response to interferon. Cytokine 129: 155025.
8. Yu, S., et al. 2020. GBP2 enhances glioblastoma invasion through Stat3/fibronectin pathway. Oncogene 39: 5042-5055.

PROTOCOLS

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