SANTA CRUZ BIOTECHNOLOGY, INC.

IGTP (7): sc-136317

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

A distinct family of interferon-γ (IFN-γ) inducible GTPases, belonging to the GTPase superfamily, are selectively induced by IFN-γ or bacterial lipopolysaccharide (LPS) stimulation. These putative GTPases include TGTP, IRG-47, LRG-47 and IGTP, and they are involved in mediating the celluar innate immune responses. Similar to other GTPases, they contain a characteristic nucleotide-binding domain for GTP and are functionally regulated by the binding and hydrolysis of GTP. In addition, these related proteins also contain significant sequence similarity among themselves, are largely similar in size, and yet they are differentially expressed. TGTP, or T cell specific GTPase, is preferentially expressed in T cells and is upregulated in response to TCR cross-linking. IGTP (inducibly expressed GTPase) is expressed predominantly in macrophages, whereas IRG-47 is primarily expressed in all cells derived from B cell lineages, and LRG-47 is highly expressed in macrophages following IFN-γ stimulation. Two additional proteins, IIGP and GTP1, are expressed in mouse embryonic fibroblasts and macrophages and are likewise upregulated by IFN-γ stimulation.

REFERENCES

1. Dever, T.E., et al. 1987. GTP-binding domain: three consensus sequence elements with distinct spacing. Proc. Natl. Acad. Sci. USA 84: 1814-1818.
2. Gilly, M. and Wall, R. 1992. The IRG-47 gene is IFN-γ induced in B cells and encodes a protein with GTP-binding motifs. J. Immunol. 148: 3275-3281.
3. Sorace, J.M., et al. 1995. Identification of an endotoxin and IFN-inducible cDNA: possible identification of a novel protein family. J. Leukoc. Biol. 58: 477-484.
4. Carlow, D.A., et al. 1995. Isolation of a gene encoding a developmentally regulated T cell-specific protein with a guanine nucleotide triphosphate-binding motif. J. Immunol. 154: 1724-1734.
5. Drysdale, B.E., et al. 1996. Identification of a lipopolysaccharide inducible transcription factor in murine macrophages. Mol. Immunol. 33: 989-998.

CHROMOSOMAL LOCATION

Genetic locus: Igtp (mouse) mapping to 11 B1.3.

SOURCE

IGTP (7) is a mouse monoclonal antibody raised against amino acids 283-423 of IGTP 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.

IGTP (7) is available conjugated to agarose (sc-136317 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; and to HRP (sc-136317 HRP), 200 µg/ml, for WB, IHC(P) and ELISA.

STORAGE

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

APPLICATIONS

IGTP (7) is recommended for detection of IGTP of mouse and rat 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for IGTP siRNA (m): sc-41792, IGTP shRNA Plasmid (m): sc-41792-SH and IGTP shRNA (m) Lentiviral Particles: sc-41792-V.

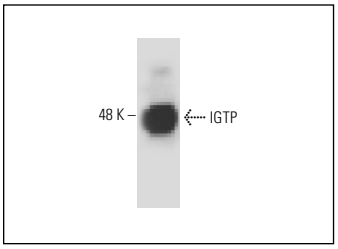
Molecular Weight of IGTP: 49 kDa.

Positive Controls: PC-12 cell lysate: sc-2250 or rat liver extract: sc-2395.

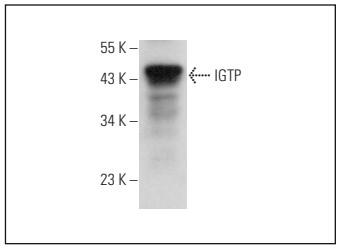
RECOMMENDED SUPPORT REAGENTS

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.

DATA



IGTP (7): sc-136317. Western blot analysis of IGTP expression in PC-12 whole cell lysate.



IGTP (7): sc-136317. Western blot analysis of IGTP expression in rat liver tissue extract.

SELECT PRODUCT CITATIONS

1. Currey, N., et al. 2019. Mouse model of mutated in colorectal cancer gene deletion reveals novel pathways in inflammation and cancer. Cell. Mol. Gastroenterol. Hepatol. 7: 819-839.
2. Lee, Y., et al. 2019. Initial phospholipid-dependent Irgb6 targeting to *Toxoplasma gondii* vacuoles mediates host defense. Life Sci. Alliance 3: e201900549.
3. Pradipta, A., et al. 2021. Cell-autonomous *Toxoplasma* killing program requires Irgm2 but not its microbe vacuolar localization. Life Sci. Alliance 4: e202000960.

RESEARCH USE

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