

# TGTP (A-20): sc-11079

## BACKGROUND

A distinct family of interferon- $\gamma$  (IFN- $\gamma$ ) inducible GTPases, belonging to the GTPase superfamily, are selectively induced by IFN- $\gamma$  or bacterial lipopolysaccharide (LPS) stimulation. These putative GTPases include TGTP, IRG-47, LRG-47, and IGTP, and they are involved in mediating the cellular 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 between 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 up-regulated 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- $\gamma$  stimulation. Two additional proteins IIGP and GTP1 are expressed in mouse embryonic fibro-blasts and macrophages and are likewise up-regulated by IFN- $\gamma$  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- $\gamma$  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: 1724-34.
5. Taylor, G.A., et al. 1996. Identification of a novel GTPase, the inducibly expressed GTPase, that accumulates in response to interferon  $\gamma$ . *J. Biol. Chem.* 271: 20399-20405.

## CHROMOSOMAL LOCATION

Genetic locus: *Tgtp1/Tgtp2* (mouse) mapping to 11 B1.2.

## SOURCE

TGTP (A-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of TGTP of mouse origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-11079 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

Store at 4 $^{\circ}$  C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

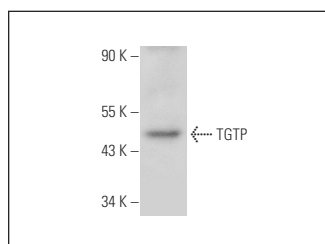
TGTP (A-20) is recommended for detection of TGTP and TGTP2 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for TGTP siRNA (m): sc-41795, TGTP shRNA Plasmid (m): sc-41795-SH and TGTP shRNA (m) Lentiviral Particles: sc-41795-V.

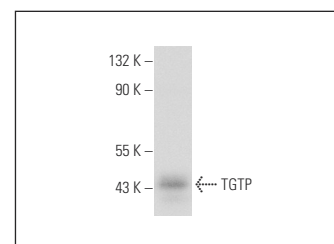
Molecular Weight of TGTP: 47 kDa.

Positive Controls: mouse thymus extract: sc-2406 or mouse testis extract: sc-2405.

## DATA



TGTP (A-20): sc-11079. Western blot analysis of TGTP expression in mouse thymus tissue extract.



TGTP (A-20): sc-11079. Western blot analysis of TGTP expression in mouse testis tissue extract.

## SELECT PRODUCT CITATIONS

1. Martens, S., et al. 2004. Mechanisms regulating the positioning of mouse p47 resistance GTPases LRG-47 and IIGP1 on cellular membranes: retargeting to plasma membrane induced by phagocytosis. *J. Immunol.* 173: 2594-2606.
2. Yamada, K., et al. 2009. Upregulation of immunity-related GTPase (IRG) proteins by TNF $\alpha$  in murine astrocytes. *Biochem. Biophys. Res. Commun.* 382: 434-439.
3. Grunert, T., et al. 2011. A comparative proteome analysis links tyrosine kinase 2 (Tyk2) to the regulation of cellular glucose and lipid metabolism in response to poly(I:C). *J. Proteomics* 74: 2866-2880.
4. Yamamoto, M., et al. 2012. A cluster of interferon- $\gamma$ -inducible p65 GTPases plays a critical role in host defense against *Toxoplasma gondii*. *Immunity* 37: 302-313.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.