



IRG-47 (M-85): sc-33215

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 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 among themselves, are largely similar in size, and yet 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- γ stimulation. Two additional proteins IIGP and GTP1 are expressed in mouse embryonic fibroblasts and macrophages and are likewise up-regulated by IFN- γ stimulation.

REFERENCES

1. Dever, T.E., Glynias, M.J. and Merrick, W.C. 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., Johnson, R.J., Howard, D.L. and Drysdale, B.E. 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., Marth, J., Clark-Lewis, I. and Teh, H.S. 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., Jeffers, M., Largaespada, D.A., Jenkins, N.A., Copeland, N.G. and Woude, G.F.V. 1996. Identification of a novel GTPase, the inducibly expressed GTPase, that accumulates in response to interferon γ . *J. Biol. Chem.* 271: 20399-20405.
6. Drysdale, B.E., Howard, D.L. and Johnson, R.J. 1996. Identification of a lipopolysaccharide inducible transcription factor in murine macrophages. *Mol. Immunol.* 33: 989-998.
7. Boehm, U., Guethlein, L., Klamp, T., Ozbek, K., Schaub, A., Futterer, A., Pfeffer, K. and Howard, J.C. 1998. Two families of GTPases dominate the complex cellular response to IFN- γ . *J. Immunol.* 161: 6715-6723.
8. Taylor, G.A., Collazo, C.M., Yap, G., Nguyen, K., Gregorio, T.A., et. al. 2000. Pathogen-specific loss of host resistance in mice lacking the IFN- γ - inducible gene IGTP. *Proc. Natl. Acad. Sci. USA* 97: 751-755.

STORAGE

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

CHROMOSOMAL LOCATION

Genetic locus: Ifi47 (mouse) mapping to 11 B1.2.

SOURCE

IRG-47 (M-85) is a rabbit polyclonal antibody raised against amino acids 1-85 mapping at the N-terminus of IRG-47 of mouse origin.

PRODUCT

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

APPLICATIONS

IRG-47 (M-85) is recommended for detection of IRG-47 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1–2 μ g per 100–500 μ 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 IRG-47 siRNA (m): sc-41793.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

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

PROTOCOLS

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