

GTPBP1 (N-14): sc-86480

BACKGROUND

The gene encoding GTPBP1 (GTP-binding protein 1), a 669 amino acid cytoplasmic protein, is highly conserved among species with 97% sequence similarity between the human and mouse homologs. While mainly expressed in smooth muscle, brain, thymus, kidney and lung, expression of GTPBP1 in monocytes can be induced by IFN- γ , a finding which is similar with other members of the G protein superfamily. The primary structure of GTPBP1 seems to indicate that it is related to EF-1 α and EF-Tu, G proteins that are important components of protein synthesis machinery. Since mutation of the gene encoding GTPBP1 does not lead to any phenotypic abnormalities, it is thought that there may be a genetic redundancy to make up for GTPBP1 lack-of-function. GTPBP2 shares 44% sequence similarity with GTPBP1 and also overlaps in expression pattern, suggesting that the GTPBP2 gene may compensate for GTPBP1 genetic abnormalities.

REFERENCES

- Gaffney, E.V., Lingenfelter, S.E., Koch, G.A., Lisi, P.J., Chu, C.W. and Tsai, S.C. 1988. Regulation by interferon γ of function in the acute monocytic leukemia cell line, THP-1. *J. Leukoc. Biol.* 43: 248-255.
- Lafuse, W.P., Brown, D., Castle, L. and Zwilling, B.S. 1995. Cloning and characterization of a novel cDNA that is IFN- γ -induced in mouse peritoneal macrophages and encodes a putative GTP-binding protein. *J. Leukoc. Biol.* 57: 477-483.
- Senju, S. and Nishimura, Y. 1997. Identification of human and mouse GP-1, a putative member of a novel G protein family. *Biochem. Biophys. Res. Commun.* 231: 360-364.
- Kudo, H., Senju, S., Mitsuya, H. and Nishimura, Y. 2000. Mouse and human GTPBP2, newly identified members of the GP-1 family of GTPase. *Biochem. Biophys. Res. Commun.* 272: 456-465.
- Watanabe, M., Yoshida, K., Hida, M., Kato, H., Uchida, K., Yamaguchi, R., Tateyama, S. and Sugano, S. 2000. Cloning, expression analysis, and chromosomal mapping of GTPBP2, a novel member of the G protein family. *Gene* 256: 51-58.
- Senju, S., Iyama, K., Kudo, H., Aizawa, S. and Nishimura, Y. 2000. Immunocytochemical analyses and targeted gene disruption of GTPBP1. *Mol. Cell. Biol.* 20: 6195-6200.
- Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 602245. OMIM: 607434. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: GTPBP1 (human) mapping to 22q13.1; Gtpbp1 (mouse) mapping to 15 E1.

SOURCE

GTPBP1 (N-14) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping near the N-terminus of GTPBP1 of human origin.

PRODUCT

Each vial contains 100 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-86480 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

GTPBP1 (N-14) is recommended for detection of GTPBP1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

GTPBP1 (N-14) is also recommended for detection of GTPBP1 in additional species, including bovine.

Suitable for use as control antibody for GTPBP1 siRNA (h): sc-75213, GTPBP1 siRNA (m): sc-145825, GTPBP1 shRNA Plasmid (h): sc-75213-SH, GTPBP1 shRNA Plasmid (m): sc-145825-SH, GTPBP1 shRNA (h) Lentiviral Particles: sc-75213-V and GTPBP1 shRNA (m) Lentiviral Particles: sc-145825-V.

Molecular Weight of GTPBP1: 72 kDa.

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) 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.

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.

PROTOCOLS

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