SANTA CRUZ BIOTECHNOLOGY, INC.

GTPBP5 (S-17): sc-85588

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Small G proteins act as molecular switches for regulation of variety of cellular processes, such as nuclear transport, signal transduction, membrane trafficking and protein synthesis. GTPBP5 (GTP-binding protein 5), also known as OBGH1, is a 406 amino acid small G protein that contains an amino-terminal mitochondria-localization signal. Knockdown of GTPBP5 mRNA results in abnormal nuclear morphologies and elongated mitochondria. *In vitro* studies demonstrate that GTPBP5 exhibits GTPase activity, cycling between an active GTP-bound state and an inactive GDP-bound state. Activation of GTPases usually results in rearrangements of filamentous actin and the formation of actin stress fibers.

REFERENCES

1. Kobayashi, G., Moriya, S. and Wada, C. 2001. Deficiency of essential GTP-binding protein ObgE in *Escherichia coli* inhibits chromosome partition. Mol. Microbiol. 41: 1037-1051.
2. Czyz, A. and Wegrzyn, G. 2005. The Obg subfamily of bacterial GTP-binding proteins: essential proteins of largely unknown functions that are evolutionarily conserved from bacteria to humans. Acta Biochim. Pol. 52: 35-43.
3. Sato, A., Kobayashi, G., Hayashi, H., Yoshida, H., Wada, A., Maeda, M., Hiraga, S., Takeyasu, K. and Wada, C. 2005. The GTP binding protein Obg homolog ObgE is involved in ribosome maturation. Genes Cells 10: 393-408.
4. Hirano, Y., Ohniwa, R.L., Wada, C., Yoshimura, S.H. and Takeyasu, K. 2006. Human small G proteins, ObgH1, and ObgH2, participate in the maintenance of mitochondria and nucleolar architectures. Genes Cells 11: 1295-1304.
5. Foti, J.J., Persky, N.S., Ferullo, D.J. and Lovett, S.T. 2007. Chromosome segregation control by *Escherichia coli* ObgE GTPase. Mol. Microbiol. 65: 569-581.
6. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 610919. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
7. Williams, J.A., Chen, X. and Sabbatini, M.E. 2008. Small G proteins as key regulators of pancreatic digestive enzyme secretion. Am. J. Physiol. Endocrinol. Metab. 296: E405-E414.
8. Zhang, X., Schaffitzel, C., Ban, N. and Shan, S.O. 2009. Multiple conformational switches in a GTPase complex control co-translational protein targeting. Proc. Natl. Acad. Sci. USA 106: 1754-1759.

CHROMOSOMAL LOCATION

Genetic locus: GTPBP5 (human) mapping to 20q13.33; Gtpbp5 (mouse) mapping to 2 H4.

SOURCE

GTPBP5 (S-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of GTPBP5 of human origin.

RESEARCH USE

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

PRODUCT

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

Blocking peptide available for competition studies, sc-85588 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

GTPBP5 (S-17) is recommended for detection of GTPBP5 of mouse, rat and 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

GTPBP5 (S-17) is also recommended for detection of GTPBP5 in additional species, including equine and bovine.

Suitable for use as control antibody for GTPBP5 siRNA (h): sc-75214, GTPBP5 siRNA (m): sc-145830, GTPBP5 shRNA Plasmid (h): sc-75214-SH, GTPBP5 shRNA Plasmid (m): sc-145830-SH, GTPBP5 shRNA (h) Lentiviral Particles: sc-75214-V and GTPBP5 shRNA (m) Lentiviral Particles: sc-145830-V.

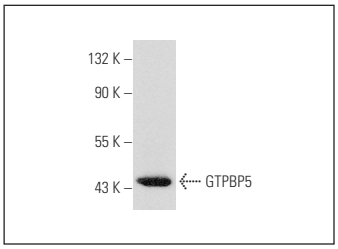
Molecular Weight of GTPBP5: 44 kDa.

Positive Controls: mouse pancreas extract: sc-364244.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



GTPBP5 (S-17): sc-85588. Western blot analysis of GTPBP5 expression in mouse pancreas tissue extract.

STORAGE

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