

# GTPBP5 (P-18): sc-85587

## 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. Cyz, A. and Wegryn, 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/>

## CHROMOSOMAL LOCATION

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

## SOURCE

GTPBP5 (P-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of GTPBP5 of human origin.

## 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-85587 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## RESEARCH USE

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

## APPLICATIONS

GTPBP5 (P-18) 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 (P-18) is also recommended for detection of GTPBP5 in additional species, including equine.

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.

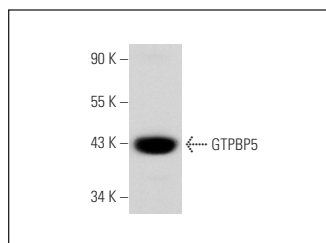
Molecular Weight of GTPBP5: 44 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, human pancreas extract: sc-363770 or mouse brain extract: sc-2253.

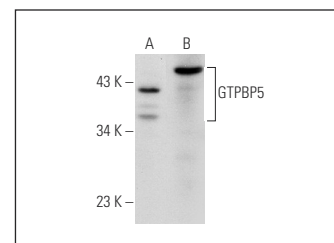
## RECOMMENDED SECONDARY REAGENTS

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 (P-18): sc-85587. Western blot analysis of GTPBP5 expression in human pancreas tissue extract.



GTPBP5 (P-18): sc-85587. Western blot analysis of GTPBP5 expression in Jurkat whole cell lysate (A) and mouse brain tissue extract (B).

## STORAGE

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

## PROTOCOLS

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