

GTPBP9 (F-7): sc-390704



The Power to Question

BACKGROUND

GTP-binding protein 9 (GTPBP9), also known as Obg-like ATPase 1 (OLA1), is a 396 amino acid protein that belongs to the Obg-related GTPase family under the translation factors (TRAFAC) class. Originally thought to only have GTPase activity, Obg-related GTPase family members have been shown to also have ATPase activity. In *Homo sapiens*, GTPBP9 exhibits a preference for binding ATP over GTP, with GTP binding occurring only at high nucleotide concentration. One cause for ATP affinity and GTP discrimination is thought to be a substitution of glutamine for a hydrophobic amino acid in Obg-related family members; this is the same substitution that inactivates Ras-like GTPases. GTPBP9 contains a C-terminal TGS domain that binds to ligands and an N-terminal G domain which binds nucleotides. GTPBP9 is expressed as three isoforms produced by alternative splicing.

REFERENCES

1. Vetter, I.R. and Wittinghofer, A. 2001. The guanine nucleotide-binding switch in three dimensions. *Science* 294: 1299-1304.
2. Leippe, D.D., et al. 2002. Classification and evolution of P-loop GTPases and related ATPases. *J. Mol. Biol.* 317: 41-72.
3. Caldon, C.E. and March, P.E. 2003. Function of the universally conserved bacterial GTPases. *Curr. Opin. Microbiol.* 6: 135-139.
4. Teplyakov, A., et al. 2003. Crystal structure of the YchF protein reveals binding sites for GTP and nucleic acid. *J. Bacteriol.* 185: 4031-4037.
5. Brown, E.D. 2005. Conserved P-loop GTPases of unknown function in bacteria: an emerging and vital ensemble in bacterial physiology. *Biochem. Cell Biol.* 83: 738-746.
6. Koller-Eichhorn, R., et al. 2007. Human OLA1 defines an ATPase subfamily in the Obg family of GTP-binding proteins. *J. Biol. Chem.* 282: 19928-19937.
7. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 611175. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: OLA1 (human) mapping to 2q31.1; Ola1 (mouse) mapping to 2 C3.

SOURCE

GTPBP9 (F-7) is a mouse monoclonal antibody raised against amino acids 181-393 mapping near the C-terminus of GTPBP9 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

GTPBP9 (F-7) is recommended for detection of GTPBP9 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

GTPBP9 (F-7) is also recommended for detection of GTPBP9 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for GTPBP9 siRNA (h): sc-94782, GTPBP9 siRNA (m): sc-145833, GTPBP9 shRNA Plasmid (h): sc-94782-SH, GTPBP9 shRNA Plasmid (m): sc-145833-SH, GTPBP9 shRNA (h) Lentiviral Particles: sc-94782-V and GTPBP9 shRNA (m) Lentiviral Particles: sc-145833-V.

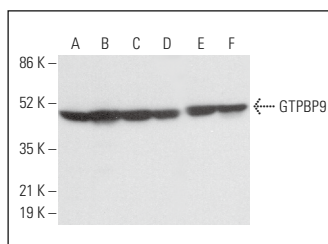
Molecular Weight of GTPBP9: 45 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, Jurkat whole cell lysate: sc-2204 or NTERA-2 cl.D1 whole cell lysate: sc-364181.

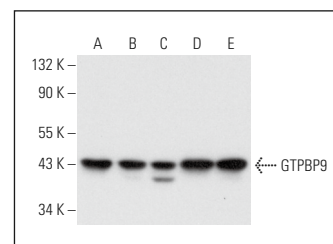
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



GTPBP9 (F-7): sc-390704. Western blot analysis of GTPBP9 expression in Hep G2 (A), T24 (B), CCRF-CEM (C), TK-1 (D), c4 (E) and 3611-RF (F) whole cell lysates.



GTPBP9 (F-7): sc-390704. Western blot analysis of GTPBP9 expression in Hep G2 (A), NTERA-2 cl.D1 (B), Jurkat (C), RT-4 (D) and U-251-MG (E) whole cell lysates.

RESEARCH USE

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

PROTOCOLS

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