

GTPBP9 (G-6): sc-393946

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

- Vetter, I.R. and Wittinghofer, A. 2001. The guanine nucleotide-binding switch in three dimensions. *Science* 294: 1299-1304.
- Leipe, D.D., et al. 2002. Classification and evolution of P-loop GTPases and related ATPases. *J. Mol. Biol.* 317: 41-72.
- Caldon, C.E. and March, P.E. 2003. Function of the universally conserved bacterial GTPases. *Curr. Opin. Microbiol.* 6: 135-139.
- Tepljakov, A., et al. 2003. Crystal structure of the YchF protein reveals binding sites for GTP and nucleic acid. *J. Bacteriol.* 185: 4031-4037.
- 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.

CHROMOSOMAL LOCATION

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

SOURCE

GTPBP9 (G-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 60-83 near the N-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.

GTPBP9 (G-6) is available conjugated to agarose (sc-393946 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393946 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393946 PE), fluorescein (sc-393946 FITC), Alexa Fluor® 488 (sc-393946 AF488), Alexa Fluor® 546 (sc-393946 AF546), Alexa Fluor® 594 (sc-393946 AF594) or Alexa Fluor® 647 (sc-393946 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393946 AF680) or Alexa Fluor® 790 (sc-393946 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-393946 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

GTPBP9 (G-6) is recommended for detection of GTPBP9 isoforms 1 and 3 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 (G-6) is also recommended for detection of GTPBP9 isoforms 1 and 3 in additional species, including bovine.

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.

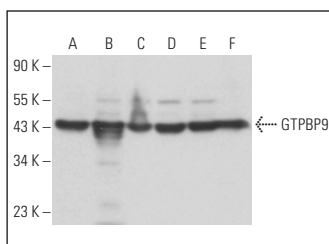
Molecular Weight of GTPBP9: 45 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, KNRK whole cell lysate: sc-2214 or rat brain extract: sc-2392.

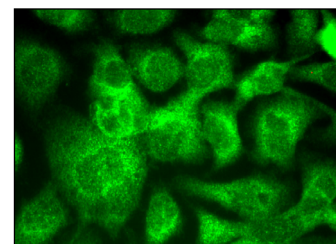
RECOMMENDED SUPPORT REAGENTS

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 (G-6): sc-393946. Western blot analysis of GTPBP9 expression in Hep G2 (A), RD (B), A-375 (C), F9 (D) and KNRK (E) whole cell lysates and rat brain tissue extract (F).



GTPBP9 (G-6): sc-393946. Immunofluorescence staining of formalin-fixed A-431 cells showing cytoplasmic and nuclear localization.

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.

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