

GTPBP9 (m2): 293T Lysate: sc-126929

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. Leipe, D.D., Wolf, Y.I., Koonin, E.V. and Aravind, L. 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., Obmolova, G., Chu, S.Y., Toedt, J., Eisenstein, E., Howard, A.J. and Gilliland, G.L. 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., Marquardt, T., Gail, R., Wittinghofer, A., Kostrewa, D., Kutay, U. and Kambach, C. 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 (mouse) mapping to 2 C3.

PRODUCT

GTPBP9 (m2): 293T Lysate represents a lysate of mouse GTPBP9 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

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

APPLICATIONS

GTPBP9 (m2): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive GTPBP9 antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

RESEARCH USE

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