

GBL Antibody

Catalog # ASC10312

Specification

GBL Antibody - Product Information

Application	WB, IHC, IF
Primary Accession	Q9BVC4
Other Accession	AAH52292 , 30411038
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Application Notes	GbL antibody can be used for the detection of GbL by Western blot at 1 and 2 µg/mL. Antibody can also be used for immunohistochemistry starting at 10 µg/mL. For immunofluorescence start at 10 µg/mL.

GBL Antibody - Additional Information

Gene ID **64223**
Other Names
 GBL Antibody: GBL, LST8, POP3, WAT1, GbetaL, GBL, Target of rapamycin complex subunit LST8, G protein beta subunit-like, TORC subunit LST8, G protein beta subunit-like

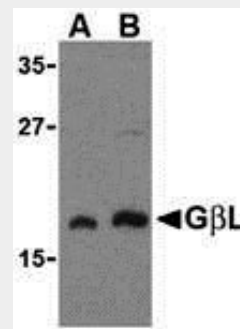
Target/Specificity
 MLST8;

Reconstitution & Storage

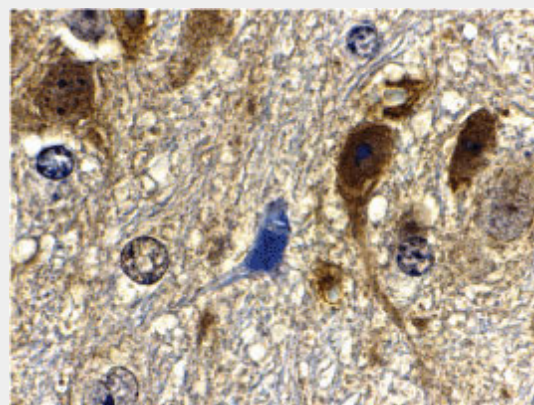
GBL antibody can be stored at 4°C for three months and -20°C, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.

Precautions

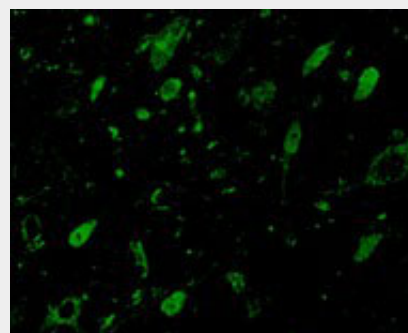
GBL Antibody is for research use only and not for use in diagnostic or therapeutic



Western blot analysis of GbL in human brain cell lysate with GbL antibody at (A) 1 and (B) 2 µg/mL.



Immunohistochemistry of GbL in mouse brain tissue with GbL antibody at 10 µg/mL.



Immunofluorescence of GbL in Mouse Brain cells with GbL antibody at 10 µg/mL.

GBL Antibody - Background

procedures.

GBL Antibody - Protein Information

Name MLST8

Synonyms GBL, LST8

Function

Subunit of both mTORC1 and mTORC2, which regulates cell growth and survival in response to nutrient and hormonal signals. mTORC1 is activated in response to growth factors or amino acids. Growth factor-stimulated mTORC1 activation involves a AKT1-mediated phosphorylation of TSC1-TSC2, which leads to the activation of the RHEB GTPase that potently activates the protein kinase activity of mTORC1. Amino acid-signaling to mTORC1 requires its relocalization to the lysosomes mediated by the Ragulator complex and the Rag GTPases. Activated mTORC1 up-regulates protein synthesis by phosphorylating key regulators of mRNA translation and ribosome synthesis. mTORC1 phosphorylates EIF4EBP1 and releases it from inhibiting the elongation initiation factor 4E (eIF4E). mTORC1 phosphorylates and activates S6K1 at 'Thr-389', which then promotes protein synthesis by phosphorylating PDCD4 and targeting it for degradation. Within mTORC1, LST8 interacts directly with MTOR and enhances its kinase activity. In nutrient-poor conditions, stabilizes the MTOR-RPTOR interaction and favors RPTOR-mediated inhibition of MTOR activity. mTORC2 is also activated by growth factors, but seems to be nutrient-insensitive. mTORC2 seems to function upstream of Rho GTPases to regulate the actin cytoskeleton, probably by activating one or more Rho-type guanine nucleotide exchange factors. mTORC2 promotes the serum-induced formation of stress-fibers or F-actin. mTORC2 plays a critical role in AKT1 'Ser-473' phosphorylation, which may facilitate the phosphorylation of the activation loop of AKT1 on 'Thr-308' by PDK1 which is a prerequisite for full activation. mTORC2 regulates the phosphorylation of SGK1 at 'Ser-422'. mTORC2 also modulates the phosphorylation of PRKCA on 'Ser- 657'.

Cellular Location

GBL Antibody: GbetaL (G protein beta protein subunit-like) is a member of a signaling pathway that regulates mammalian cell growth in response to the presence of nutrients and growth factors. It binds to the kinase domain of TOR (Target of rapamycin, also known as mTOR), an evolutionarily conserved serine/threonine kinase that regulates cell growth and cell cycle through its ability to integrate signals from nutrient levels and growth factors. Rapamycin inhibits TOR resulting in reduced cell growth and reduced rates of cell cycle and cell proliferation. TOR is normally associated with GbetaL and an additional regulatory protein RAPTOR, allowing TOR to control protein biosynthesis. The binding of GbetaL to TOR stimulates TOR's kinase activity towards downstream proteins such as RPS6K (ribosomal protein S6 kinase) and the translation factor 4E-BP1 which leads to increased protein translation and cell growth.

GBL Antibody - References

Kim D-H, Sarbassov DD, Ali SM, et al. GβL, a positive regulator of the Rapamycin-sensitive pathway required for the nutrient-sensitive interaction between Raptor and mTOR. *Mol. Cell* 2003; 11:895-904.

Shamji AF, Ngheim P, and Schreiber SL. Integration of growth factor and nutrient signaling: implications for cancer biology. *Mol. Cell* 2003; 12:271-80.

Fingar DC and Blenis J. Target of rapamycin (TOR): an integrator of nutrient and growth factor signals and coordinator of cell growth and cell cycle progression. *Oncogene* 2004; 23:3151-71.

Cytoplasm
{ECO:0000250|UniProtKB:Q9Z2K5}.

Tissue Location

Broadly expressed, with highest levels in skeletal muscle, heart and kidney.

GBL Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)