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GABARAP Antibody

Catalog # ASC11660

Product Information

Application	WB, IF, E
Primary Accession	O95166
Other Accession	NP_009209, 6005764
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	13918
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	GABARAP antibody can be used for detection of GABARAP by Western blot at 1 - 2 □g/mL.

Additional Information

Gene ID	11337
Other Names	Gamma-aminobutyric acid receptor-associated protein, GABA(A) receptor-associated protein, MM46, GABARAP, FLC3B
Target/Specificity	GABARAP; Multiple isoforms of GABARAP exist due to alternative splicing events.
Reconstitution & Storage	GABARAP antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.
Precautions	GABARAP Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	GABARAP {ECO:0000303|PubMed:34597140, ECO:0000312|HGNC:HGNC:4067}
Function	Ubiquitin-like modifier that plays a role in intracellular transport of GABA(A) receptors and its interaction with the cytoskeleton (PubMed:9892355). Involved in autophagy: while LC3s are involved in elongation of the phagophore membrane, the GABARAP/GATE-16 subfamily is essential for a later stage in autophagosome maturation (PubMed:15169837, PubMed:20562859, PubMed:22948227, PubMed:34597140). Through its interaction with the reticulophagy receptor TEX264, participates in the remodeling of subdomains of the endoplasmic reticulum into autophagosomes upon nutrient stress, which then fuse with lysosomes for endoplasmic reticulum turnover (PubMed:31006538). Participates in selective

	ER-phagy through interaction with UBAC2, promoting recruitment of UBAC2-associated ER fragments to autophagosomes (PubMed:39284914). In addition to autophagy, also regulates lysosome biogenesis via interaction with FNIP1 (or FNIP2): interaction sequesters the FLCN-FNIP complex and prevents non-canonical mTORC1 signaling cascade activation, leading to activation of transcription factors TFEB and TFE3 (PubMed:39423796, PubMed:34597140). Also required for the local activation of the CUL3(KBTBD6/7) E3 ubiquitin ligase complex, regulating ubiquitination and degradation of TIAM1, a guanyl-nucleotide exchange factor (GEF) that activates RAC1 and downstream signal transduction (PubMed:25684205). Thereby, regulates different biological processes including the organization of the cytoskeleton, cell migration and proliferation (PubMed:25684205). Involved in apoptosis (PubMed:15977068).
Cellular Location	Cytoplasmic vesicle, autophagosome membrane. Endomembrane system {ECO:0000250|UniProtKB:P60517}. Cytoplasm, cytoskeleton {ECO:0000250|UniProtKB:P60517}. Golgi apparatus membrane {ECO:0000250|UniProtKB:P60517}. Cytoplasmic vesicle {ECO:0000250|UniProtKB:P60517}. Note=Largely associated with intracellular membrane structures including the Golgi apparatus and postsynaptic cisternae. Colocalizes with microtubules (By similarity) Also localizes to discrete punctae along the ciliary axoneme (By similarity). {ECO:0000250|UniProtKB:P60517, ECO:0000250|UniProtKB:Q9DCD6}
Tissue Location	Heart, brain, placenta, liver, skeletal muscle, kidney and pancreas.

Background

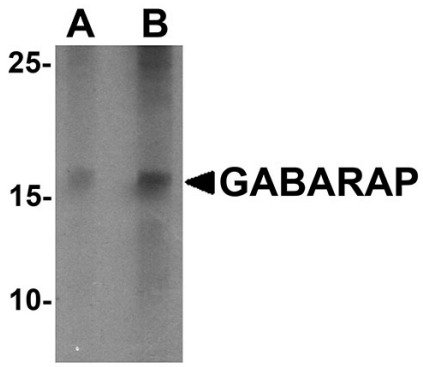
GABARAP Antibody: Gamma-aminobutyric acid (GABA) is the main inhibitory transmitter by increasing a Cl-conductance that inhibits neuronal firing in the central nervous system. It has been shown to activate both ionotropic (GABAA) and metabotropic (GABAB) receptors as well as a third class of receptors called GABAC. GABARAP (GABAA receptor-associated protein) links GABAA receptors to the cytoskeleton and may play a role in intracellular transport of GABAA receptors and its interaction with the cytoskeleton. GABARAP belongs to the MAP1 or ATG8 like family and recent studies show that MAPK15/ERK8 is acting through interaction with ATG8 family proteins to regulate autophagy.

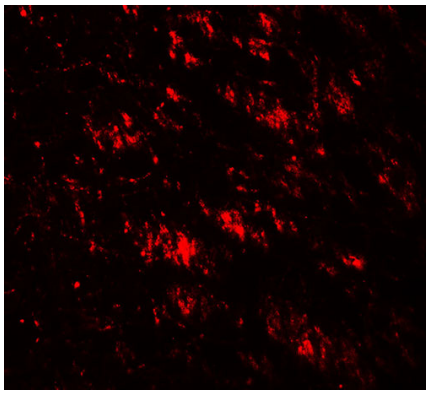
References

Cherubini E, Gaiarsa JL, and Ben-Ari Y. GABA: an excitatory transmitter in early postnatal life. Trends Neurosci.1991; 14:515-19.
Dirkx R Jr, Thomas A, Li L, et al. Targeting of the 67 kDa isoform of glutamic acid decarboxylase to intracellular organelles is mediated by its interaction with the NH2-terminal region of the 65 kDa isoform of glutamic acid decarboxylase. J. Biol. Chem. 1995; 270:2241-6.
Wang H, Bedford FK, Brandon NJ, et al. GABA(A)-receptor-associated protein links GABAA receptors and the cytoskeleton. Nature 1999; 397:69-72.
Colecchia D, Strambi A, Sanzone S, et al. MAPK15/ERK8 stimulates autophagy by interacting with LC3 and GABARAP proteins. Autophagy 2012 Sep 4;8(12).

Images

Western blot analysis of GABARAP in K562 cell lysate with GABARAP antibody at (A) 1 and (B) 2 µg/mL.





Immunofluorescence of GABARAP in human brain tissue with GABARAP antibody at 20 µg/ml.

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