10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

GABARAPL2 Antibody

Catalog # ASC11823

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	P60520
Other Accession	NP_009216, 6005768
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	13667
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	GABARAPL2 antibody can be used for detection of GABARAPL2 by Western blot at 1 - 2 g/ml. Antibody can also be used for Immunohistochemistry at 5 g/mL. For Immunoflorescence start at 20 g/mL.

Additional Information

Gene ID	11345
Other Names	Gamma-aminobutyric acid receptor-associated protein-like 2, GABA(A) receptor-associated protein-like 2, Ganglioside expression factor 2, GEF-2, General protein transport factor p16, Golgi-associated ATPase enhancer of 16 kDa, GATE-16, MAP1 light chain 3-related protein, GABARAPL2, FLC3A, GEF2
Target/Specificity	GABARAPL2; GABARAPL2 antibody is human, mouse and rat reactive. Multiple isoforms of GABARAPL2 are known to exist.
Reconstitution & Storage	GABARAPL2 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.
Precautions	GABARAPL2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	GABARAPL2 (HGNC:13291)
Synonyms	FLC3A, GEF2
Function	Ubiquitin-like modifier involved in intra-Golgi traffic (By similarity). Modulates intra-Golgi transport through coupling between NSF activity and SNAREs activation (By similarity). It first stimulates the ATPase activity of NSF which in turn stimulates the association with GOSR1 (By similarity). Involved in autophagy (PubMed:20418806, PubMed:23209295). Plays a role in mitophagy which contributes to regulate mitochondrial quantity and quality

	by eliminating the mitochondria to a basal level to fulfill cellular energy requirements and preventing excess ROS production (PubMed:20418806, PubMed:23209295). Whereas LC3s are involved in elongation of the phagophore membrane, the GABARAP/GATE-16 subfamily is essential for a later stage in autophagosome maturation (PubMed:20418806, PubMed:23209295).
Cellular Location	Cytoplasmic vesicle, autophagosome. Endoplasmic reticulum membrane. Golgi apparatus {ECO:0000250|UniProtKB:P60519}
Tissue Location	Ubiquitous. Expressed at high levels in the brain, heart, prostate, ovary, spleen and skeletal muscle. Expressed at very low levels in lung, thymus and small intestine

Background

Gamma-aminobutyric acid (GABA) is the main inhibitory transmitter by increasing a Cl-conductance that inhibits neuronal firing in the central nervous system (1). It has been shown to activate both ionotropic (GABAA) and metabotropic (GABAB) receptors as well as a third class of receptors called GABAC (2). GABARAPL2 (GABAA receptor-associated protein-like 2), also known as GATE16, was initially identified as a membrane transport modulator and is a mammalian ortholog to the autophagy protein ATG8 (3,4). It is thought that GABARAPL2 and other members of the ATG8 family act as scaffolds for assembly of the Unc-51 like kinase (ULK) complex in the formation of autophagosomes (5).

References

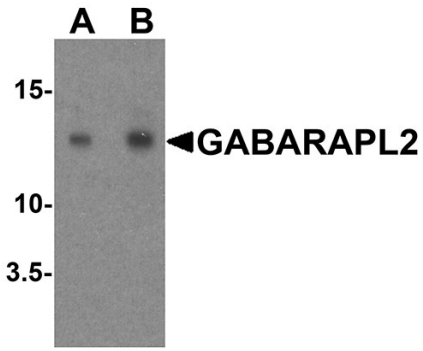
Cherubini E, Gaiarsa JL, and Ben-Ari Y. GABA: an excitatory transmitter in early postnatal life. Trends Neurosci.1991; 14:515-19.

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.

Sagiv Y, Legesse-Miller A, Porat A, et al. GATE-16, a membrane transport modulator, interacts with NSF and the Golgi v-SNARE GOS-28. EMBO J. 2000; 19:1494-504.

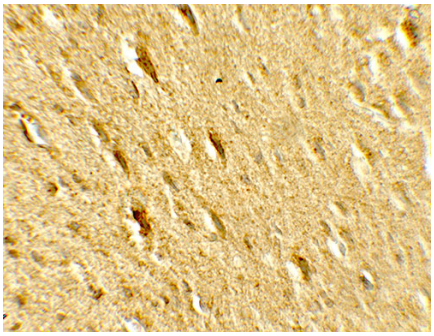
Paz Y, Elazar Z, and Fass D. Structure of GATE-16, membrane transport modulator and mammalian ortholog of autophagocytosis factor Aut7p. J. Biol. Chem. 2000; 275:25445-50.

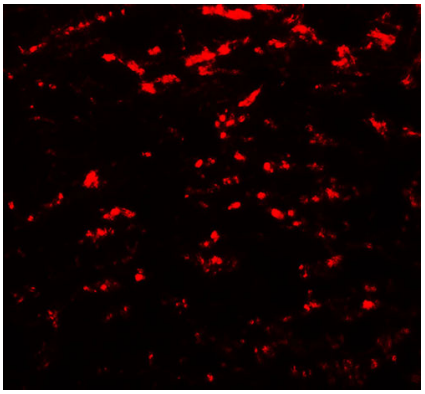
Images



Western blot analysis of GABARAPL2 in human brain tissue lysate with GABARAPL2 antibody at (A) 1 and (B) 2 µg/ml.

Immunohistochemistry of GABARAPL2 in rat brain tissue with GABARAPL2 antibody at 5 µg/mL.





Immunofluorescence of GABARAPL2 in rat brain tissue with GABARAPL2 antibody at 20 µg/mL.