

CAPS1 Antibody

Catalog # ASC10678

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	Q9ULU8
Other Accession	NP_899631 , 34452713
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	152786
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	CAPS1 antibody can be used for detection of CAPS1 by Western blot at 0.25 - 0.5 µg/mL. Antibody can also be used for immunohistochemistry starting at 5 µg/mL. For immunofluorescence start at 20 µg/mL.

Additional Information

Gene ID	8618
Other Names	Calcium-dependent secretion activator 1, Calcium-dependent activator protein for secretion 1, CAPS-1, CADPS, CAPS, CAPS1, KIAA1121
Target/Specificity	CADPS; Numerous isoforms of CAPS1 are known to exist. This CAPS1 antibody is predicted to be specific to CAPS1 and not recognize CAPS2.
Reconstitution & Storage	CAPS1 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	CAPS1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	CADPS
Synonyms	CAPS, CAPS1, KIAA1121
Function	Calcium-binding protein involved in exocytosis of vesicles filled with neurotransmitters and neuropeptides. Probably acts upstream of fusion in the biogenesis or maintenance of mature secretory vesicles. Regulates catecholamine loading of DCVs. May specifically mediate the Ca(2+)-dependent exocytosis of large dense-core vesicles (DCVs) and other dense-core vesicles by acting as a PtdIns(4,5)P2- binding protein that acts at

prefusion step following ATP-dependent priming and participates in DCVs-membrane fusion. However, it may also participate in small clear synaptic vesicles (SVs) exocytosis and it is unclear whether its function is related to Ca^{2+} triggering (By similarity).

Cellular Location

Synapse {ECO:0000250|UniProtKB:Q62717}. Cytoplasmic vesicle, secretory vesicle, neuronal dense core vesicle membrane {ECO:0000250|UniProtKB:Q62717}; Peripheral membrane protein {ECO:0000250|UniProtKB:Q62717}. Note=Membrane-associated to vesicles Strongly enriched in synaptic fractions. Preferentially binds to dense core vesicles but not to synaptic vesicles. Binds phosphoinositides, with a strong selectivity for $\text{PtdIns}(4,5)\text{P}_2$ over $\text{PtdIns}(3,4,5)\text{P}_3$. Probably localizes to different vesicles compared to CADPS2 {ECO:0000250|UniProtKB:Q62717}

Tissue Location

Specifically expressed in neural and endocrine secretory tissues. Expressed in brain and pancreas and at low level in heart. Also expressed in fetal heart, cerebellum, cerebral cortex, medulla, occipital pole, frontal and temporal lobes, and putamen, as well as weak expression in spinal cord.

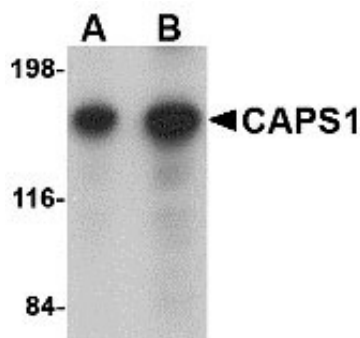
Background

CAPS1 Antibody: CAPS1 and its related protein CAPS2 encode novel neural/endocrine-specific cytosolic and peripheral membrane proteins. Both are essential components of the synaptic vesicle priming machinery and are required for the Ca^{2+} -regulated exocytosis of secretory vesicles; CAPS-deficient neurons contain no or very few fusion competent synaptic vesicles, causing a selective impairment of fast phasic transmitter release. CAPS1 acts at a stage in exocytosis that follows ATP-dependent priming, which involves the essential synthesis of phosphatidylinositol 4, 5-bisphosphate and is thought to be a specific regulator of large dense-core vesicle fusion.

References

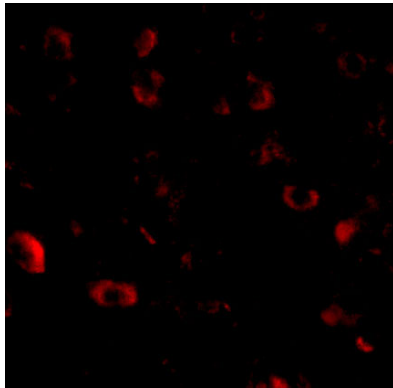
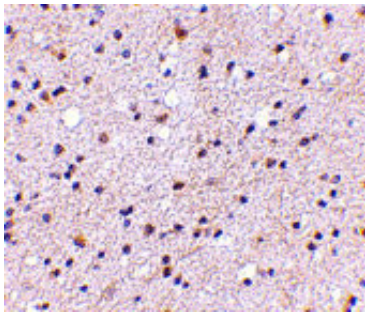
Walent JH, Porter BW, and Martin TF. A novel 145 kD brain cytosolic protein reconstitutes Ca^{2+} -regulated secretion in permeable neuroendocrine cells. *Cell*1992; 70:765-775.
Juckusch WJ, Speidel D, Sigler A, et al. CAPS-1 and CAPS-2 are essential synaptic vesicle priming proteins. *Cell*2007; 131:796-808.
Rupnick M, Kreft M, Sikdat SK, et al. Rapid regulated dense-core vesicle exocytosis requires the CAPS protein. *Proc. Natl. Acad. Sci. USA*2000; 97:5627-32.

Images



Western blot analysis of CAPS1 in rat brain tissue lysate with CAPS1 antibody at (A) 0.25 and (B) 0.5 $\mu\text{g}/\text{mL}$.

Immunohistochemistry of CAPS1 in human brain with CAPS1 antibody at 5 $\mu\text{g}/\text{mL}$.



Immunofluorescence of CAPS1 in human brain tissue with CAPS1 antibody at 20 $\mu\text{g/mL}$.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.