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Precerebellin Antibody

Catalog # ASC10346

Product Information

Application	WB, ICC, E
Primary Accession	P23435
Other Accession	P23435, 116114
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	21097
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	Precerebellin antibody can be used for the detection of precerebellin by Western blot at 2 - 4 g/mL. Antibody can also be used for immunocytochemistry starting at 10 g/mL.

Additional Information

Gene ID	869
Other Names	Precerebellin Antibody: Cerebellin-1, Precerebellin, CER, cerebellin 1 precursor
Target/Specificity	CBLN1;
Reconstitution & Storage	Precerebellin 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	Precerebellin Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	CBLN1
Function	Required for synapse integrity and synaptic plasticity. During cerebellar synapse formation, essential for the matching and maintenance of pre- and post-synaptic elements at parallel fiber- Purkinje cell synapses, the establishment of the proper pattern of climbing fiber-Purkinje cell innervation, and induction of long-term depression at parallel fiber-Purkinje cell synapses. Plays a role as a synaptic organizer that acts bidirectionally on both pre- and post- synaptic components. On the one hand induces accumulation of synaptic vesicles in the pre-synaptic part by binding with NRXN1 and in other hand induces clustering of GRID2 and its associated

	proteins at the post-synaptic site through association of GRID2. NRXN1-CBLN1-GRID2 complex directly induces parallel fiber protrusions that encapsulate spines of Purkinje cells leading to accumulation of GRID2 and synaptic vesicles. Required for CBLN3 export from the endoplasmic reticulum and secretion (By similarity). NRXN1-CBLN1-GRID2 complex mediates the D-Serine-dependent long term depression signals and AMPA receptor endocytosis (PubMed:27418511). Essential for long-term maintenance but not establishment of excitatory synapses (By similarity). Inhibits the formation and function of inhibitory GABAergic synapses in cerebellar Purkinje cells (By similarity).
Cellular Location	Secreted {ECO:0000250|UniProtKB:Q9R171}. Postsynaptic cell membrane {ECO:0000250|UniProtKB:Q9R171}
Tissue Location	In the Purkinje cells postsynaptic structures. In the cerebellum, cerebellin is much less abundant than [des-Ser1]- cerebellin

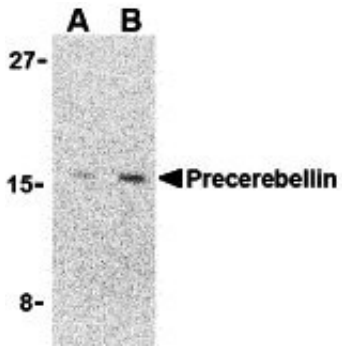
Background

Precerebellin Antibody: Precerebellin is the precursor of the brain-specific hexadecapeptide cerebellin, a protein with substantial similarity to the globular region of the B chain of complement component C1q. Cerebellin exerts neuromodulatory functions by directly stimulating norepinephrine release via the adenylate cyclase/pka- dependent signaling pathway; and indirectly enhances adrenocortical secretion in vivo, through a paracrine mechanism involving medullary catecholamine release. The active form of precerebellin is highly enriched in postsynaptic structures of cerebellar Purkinje cells in cartwheel neurons of the dorsal cochlear nucleus. Because precerebellin belongs to the C1q/tumor necrosis factor superfamily of secreted proteins and has similarity to adiponectin and CTRP3, it has been suggested that precerebellin posseses functions other than those already stated.

References

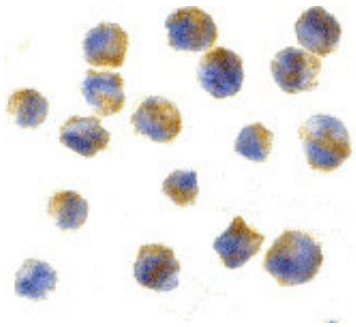
Urade Y, Oberdick J, Molinar-Rode R, et al. Precerebellin is a cerebellum-specific protein with similarity to the globular component C1q B chain. Proc. Natl. Acad. Sci. USA1991; 88:1069-73.
Mazzocchi G, Andreis PG, De Caro R, et al. Cerebellin enhances in vitro secretory activity of human adrenal gland. J. Clin. Endocrinol. Metab. 1999; 84:632-5.
Albertin G, Malendowicz LK, Macchi C, et al. Cerebellin stimulates the secretory activity of the rat adrenal gland: in vitro and in vivo studies. Neuropeptides 2000; 34:7-11.
Shamji AF, Ngheim P, and Schreiber SL. Integration of growth factor and nutrient signaling: implications for cancer biology. Proc. Natl. Acad. Sci. USA 1985; 82:7145-8.

Images



Western blot analysis of precerebellin in 293 cell lysate with precerebellin antibody at (A) 2 and (B) 4 µg/mL.

Immunocytochemistry of precerebellin in 3T3 cells with precerebellin antibody at 10 µg/mL.



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