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Cerebellin 1 Antibody

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP51745

Product Information

Application	WB
Primary Accession	P23435
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Calculated MW	21097

Additional Information

Gene ID	869
Other Names	Cerebellin-1, Precerebellin, Cerebellin, CER, [des-Ser1]-cerebellin, CBLN1
Target/Specificity	KLH-conjugated synthetic peptide encompassing a sequence within the C-term region of human Cerebellin 1. The exact sequence is proprietary.
Dilution	WB~~1:1000
Format	0.01M PBS, pH 7.2, 0.09% (W/V) Sodium azide, Glycerol 50%
Storage	Store at -20 °C.Stable for 12 months from date of receipt

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

Required for synapse integrity and synaptic plasticity. During cerebellar synapse formation, essential for the formation and maintenance of parallel fiber and Purkinje cell synapses. When parallel fibers make contact with Purkinje spines, CBLN1 interaction with GRID2 triggers the recruitment of NRXN1 and secretory vesicles to the sites of contact. NRXN1-CBLN1-GRID2 signaling induces presynaptic morphological changes, which may further accumulate pre- and postsynaptic components to promote bidirectional maturation of parallel fiber - Purkinje cell functionnally active synapses by a positive feedback mechanism. Required for CBLN3 export from the endoplasmic reticulum and secretion (By similarity).

References

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Ota T.,et al.Nat. Genet. 36:40-45(2004).
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Yiangou Y.,et al.J. Neurochem. 53:886-889(1989).