

Recombinant Mouse CBLN1 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP51974

Size: 10ug, 100ug

Protein Name: Cerebellin-1 (Brain protein D3) (Precerebellin) [Cleaved into: Cerebellin (CER); [des-Ser1]-cerebellin (des-Ser1-cerebellin)]

Synonym: Cbln1

UniProt ID: Q9R171

UniProt Link: www.uniprot.org/uniprotkb/Q9R171/entry

Species Source: Mouse

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 193 AA

Molecular Weight: 21 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MLGVVELLLLGTAWLAGPARGQNETEPIVLEGKCLVVCDSNPTSDPTGTALGISVRSGSAKVAFSAIR
STNHEPSEMSNRTMIIYFDQVLVNIGNNFDSESTFIAPRKGIYSFNFHVVKVYNRQTIQVSLMLNGW
PVISAFAGDQDVTREAASNGVLIQMEKGDRAYLKLERGNLMGGWKYSTFSGFLVFPL

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Cerebellin-1 (Brain protein D3) (Precerebellin) [Cleaved into: Cerebellin (CER); [des-Ser1]-cerebellin (des-Ser1-cerebellin)] produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein 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 (PubMed:16234806). Plays a role as a synaptic organizer that acts bidirectionally on both pre- and post-synaptic components (PubMed:20395510). 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 (PubMed:21410790). NRXN1-CBLN1-GRID2 complex directly induces parallel fiber protrusions that encapsulate spines of Purkinje cells leading to accumulation of GRID2 and synaptic vesicles (PubMed:23141067). Required for CBLN3 export from the endoplasmic reticulum and secretion (PubMed:17030622, PubMed:17331201). NRXN1-CBLN1-GRID2 complex mediates the D-Serine-dependent long term depression signals and AMPA receptor endocytosis (By similarity). Essential for long-term maintenance but not establishment of excitatory synapses (PubMed:29691328). Inhibits the formation and function of inhibitory GABAergic synapses in cerebellar Purkinje cells (PubMed:24467251).; The cerebellin peptide exerts neuromodulatory functions. Directly stimulates 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 (By similarity).

Subcellular Localization: Secreted . Postsynaptic cell membrane . Note=Interaction with CBLN3 may cause partial retention in the endoplasmic reticulum.

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.