

CASPR2 Protein, Mouse, Recombinant (His)

General Information

Synonyms:	5430425M22Rik; Caspr2; contactin associated protein-like 2; mKIAA0868
Protein Construction:	A DNA sequence encoding the extracellular domain of mouse CASPR2 (NP_001004357.2) (Met 1-Ser 1262) was expressed, with a C-terminal polyhistidine tag. Predicted N terminal: Ala 28
Species:	Mouse
Expression Host:	HEK293 Cells
Accession:	E9QNF7
Molecular Weight:	139 kDa (predicted); 140-150 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 95 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:
A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:
It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:
In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

CNTNAP2/CASPR2 is a member of the neurexin family which functions in the vertebrate nervous system as cell adhesion molecules and receptors. This protein, like other neurexin proteins, contains epidermal growth factor repeats and laminin G domains. In addition, it includes an F5/8 type C domain, discoidin/neuropilin- and fibrinogen-like domains, thrombospondin N-terminal-like domains and a putative PDZ binding site. CNTNAP2/CASPR2 is localized at the juxtaparanodes of myelinated axons, and mediates interactions between

neurons and glia during nervous system development and is also involved in localization of potassium channels within differentiating axons. This protein encoding gene is directly bound and regulated by forkhead box protein P2 (FOXP2), a transcription factor related to speech and language development. This gene has been implicated in multiple neurodevelopmental disorders, including Gilles de la Tourette syndrome, schizophrenia, epilepsy, autism, ADHD and mental retardation. CNTNAP2/CASPR2 may play a role in the formation of functional distinct domains critical for saltatory conduction of nerve impulses in myelinated nerve fibers. CNTNAP2/CASPR2 Seems to demarcate the juxtaparanodal region of the axo-glial junction.

Reference

- Poot M, et al.(2010) Disruption of CNTNAP2 and additional structural genome changes in a boy with speech delay and autism spectrum disorder. *Neurogenetics*. 11(1): 81-9.
- Friedman JI, et al.(2008) CNTNAP2 gene dosage variation is associated with schizophrenia and epilepsy. *Mol Psychiatry*. 13(3): 261-6.
- Verkerk AJ, et al.(2003) CNTNAP2 is disrupted in a family with Gilles de la Tourette syndrome and obsessive compulsive disorder. *Genomics*. 82(1): 1-9.

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