Revision 1

Store at -20C

#26372

Contactin-2 (D4M7G) Rabbit mAb

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	M R	Endogenous	130	Rabbit IgG	#Q02246	6900

Product Usage Information

Application	Dilution
Western Blotting	1:1000

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

Contactin-2 (D4M7G) Rabbit mAb recognizes endogenous levels of total contactin-2 protein.

Species predicted to react based on 100% sequence homology

Human

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Val375 of human contactin-2 protein.

Background

Myelinated axons contain un-myelinated gaps called nodes of Ranvier. These regularly spaced gaps are critical for the proper propagation and rapid conduction of nerve impulses in the central and peripheral nervous system (1). The structure and organization of the nodes of Ranvier is dictated by interaction between the axon and glial cells (2). Voltage-gated sodium channels concentrated at the nodes and potassium channels clustered at the paranodes are responsible for propagation of the action potentials (3,4). Other proteins that contribute to the architecture and function of the nodes of Ranvier include βIV spectrin (5), ankyrin-G (6), and the L1 cell adhesion molecules, neurofascin and NrCAM (7,8).
Contactin-2 (CNTN2, TAG-1) is a glycosyl-phosphatidyl-inositol-anchored cell adhesion protein that is expressed at the juxtaparanodal region of the nodes of Ranvier by oligodendrocytes, Schwann cells, and axons (9,10). Contactin-2 plays an important role in the proper organization of the juxtaparanodes through interaction with Caspr2 and the recruitment of the Kv1.1 and Kv1.2 potassium channel subunits (11). Research studies indicate that contactin-2 is a substrate of β-secretase 1 (12,13). A deletion mutation in the corresponding *CNTN2* gene results in familial adult myoclonic epilepsy-5, which is characterized by seizures, involuntary myoclonic muscle twitches, and mild intellectual disability (14).

Background References

1. Black, J.A. et al. (1990) *Trends Neurosci* 13, 48-54.
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3. Waxman, S.G. et al. (1989) *Proc Natl Acad Sci U S A* 86, 1406-10.
4. Ritchie, J.M. (1992) *Trends Neurosci* 15, 345-51.
5. Berghs, S. et al. (2000) *J Cell Biol* 151, 985-1002.
6. Zhou, D. et al. (1998) *J Cell Biol* 143, 1295-304.
7. Davis, J.Q. et al. (1996) *J Cell Biol* 135, 1355-67.
8. Ratcliffe, C.F. et al. (2001) *J Cell Biol* 154, 427-34.
9. Traka, M. et al. (2002) *J Neurosci* 22, 3016-24.
10. Girault, J.A. and Peles, E. (2002) *Curr Opin Neurobiol* 12, 476-85.
11. Traka, M. et al. (2003) *J Cell Biol* 162, 1161-72.
12. Kuhn, P.H. et al. (2012) *EMBO J* 31, 3157-68.
13. Gautam, V. et al. (2014) *Mol Neurodegener* 9, 4.
14. Stogmann, E. et al. (2013) *Brain* 136, 1155-60.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting

Cross-Reactivity Key

M: Mouse **R:** Rat

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