

Store at
-20C
#43928**Gephyrin (D4J4R) Rabbit mAb**

Orders: 877-616-CELL (2355)
orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

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

Applications: IF-F	Reactivity: M R	Sensitivity: Endogenous	Source/Isotype: Rabbit IgG	UniProt ID: #Q9NQX3	Entrez-Gene Id: 10243
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Product Usage Information**Application**

Immunofluorescence (Frozen)

Dilution

1:800

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

Gephyrin (D4J4R) Rabbit mAb recognizes endogenous levels of total Gephyrin 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 Ser268 of human Gephyrin protein.

Background

The neurotransmitters GABA and glycine activate ligand-gated chloride channels and thus mediate fast synaptic inhibition. Gephyrin is a postsynaptic, scaffolding protein anchoring type A GABA and glycine receptors to the cytoskeleton. In addition to gephyrin's function of clustering synaptic neurotransmitter receptors, it plays an essential role in the biosynthesis of the molybdenum cofactor (MoCo). Molybdenum cofactor chelates and activates sulfite oxidase, an enzyme crucial for survival (1). GSK-3β and Erk1/2 phosphorylate gephyrin at residue Ser270 and Ser268, respectively. These post-translational modifications alter the clustering of gephyrin, affecting the amplitude and frequency of GABAergic inhibitory currents (2,3). Researchers are analyzing the role of abnormal gephyrin clustering and function in major neurological, neurodevelopmental, and psychiatric disorders (1). Abnormal accumulations of gephyrin are highly correlated with the neuropathologic diagnosis of Alzheimer's disease (4).

Background References

1. Tyagarajan, S.K. and Fritschy, J.M. (2014) *Nat Rev Neurosci* 15, 141-56.
2. Tyagarajan, S.K. et al. (2013) *J Biol Chem* 288, 9634-47.
3. Kalbouneh, H. et al. (2014) *PLoS One* 9, e104256.
4. Hales, C.M. et al. (2013) *J Neuropathol Exp Neurol* 72, 1009-15.

Species Reactivity

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

Applications Key

IF-F: Immunofluorescence (Frozen)

Cross-Reactivity Key

M: Mouse **R:** Rat

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