

Gephyrin Antibody



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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	H M R	Endogenous	93	Rabbit	#Q9NQX3	10243

Product Usage Information

Application

Western Blotting

Dilution

1:1000

Storage

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

Specificity/Sensitivity

Gephyrin Antibody recognizes endogenous levels of total gephyrin protein.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Leu517 of human gephyrin protein. Antibodies are purified by protein A and peptide affinity chromatography.

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. Kalbounieh, 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).

Western Blot Buffer

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

Applications Key

W: Western Blotting

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat

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