Gephyrin (45): sc-135920

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BIOTECHNOLOGY

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BACKGROUND

The sub-membraneous region at the postsynaptic membrane contains a number of proteins critical for receptor targeting. Gephyrin is a microtubule-associated protein highly expressed in brain and localized to neuronal post-synaptic membranes. Gephyrin is essential for the postsynaptic localization of the inhibitory Glycine receptor and is thought to anchor the receptor to subsynaptic microtubules. The protein is expressed in most mammalian tissues with predominant expression in brain. At least five additional splice variants of Gephyrin ranging in molecular weight have been identified in rat and human brain tissue.

REFERENCES

1. Prior, P., et al. 1992. Primary structure and alternative splice variants of Gephyrin, a putative Glycine receptor-Tubulin linker protein. Neuron 8: 1161-1170.

2. Takagi, T., et al. 1992. Co-expression of the receptor-associated protein Gephyrin changes the ligand binding afinities of α2 Glycine receptors. FEBS Lett. 303: 178-180.

3. Kirsch, J., et al. 1993. Distribution of Gephyrin transcripts in the adult and developing rat brain. Eur. J. Neurosci. 5: 1109-1117.

4. Meyer, G., et al. 1995. Identification of a Gephyrin binding motif on the Glycine receptor β subunit. Neuron 15: 563-572.

5. Vannier, C., et al. 1997. Biology of the postsynaptic Glycine receptor. Int. Rev. Cytol. 176: 201-244.

6. Ramming, M., et al. 1997. Analysis of the promoter region of the murine Gephyrin gene. FEBS Lett. 405: 137-140.

7. Kawasaki, B.T., et al. 1997. Variants of the receptor/channel clustering molecule Gephyrin in brain: distinct distribution patterns, developmental profiles, and proteolytic cleavage by Calpain. J. Neurosci. Res. 49: 381-388.

8. Meier, J., et al. 2004. A Gephyrin-related mechanism restraining Glycine receptor anchoring at GABAergic synapses. J. Neurosci. 24: 1398-1405.

9. Sola, M., et al. 2004. Structural basis of dynamic Glycine receptor clustering by Gephyrin. EMBO J. 23: 2510-2519.

CHROMOSOMAL LOCATION

Genetic locus: GPHN (human) mapping to 14q23.3; Gphn (mouse) mapping to 12 C3.

SOURCE

Gephyrin (45) is a mouse monoclonal antibody raised against amino acids 569-726 of Gephyrin of rat origin.

PRODUCT

Each vial contains 50 µg IgG$_1$ in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

For research use only, not for use in diagnostic procedures. Not for resale.

APPLICATIONS

Gephyrin (45) is recommended for detection of Gephyrin of mouse, rat, human and *Drosophila melanogaster* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Gephyrin siRNA (h): sc-35464, Gephyrin siRNA (m): sc-35465, Gephyrin shRNA Plasmid (h): sc-35464-SH, Gephyrin shRNA Plasmid (m): sc-35465-SH, Gephyrin shRNA (h) Lentiviral Particles: sc-35464-V and Gephyrin shRNA (m) Lentiviral Particles: sc-35465-V.
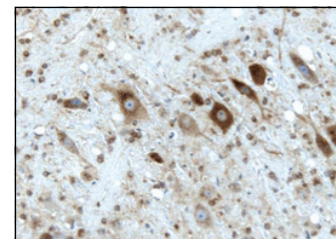
Molecular Weight of Gephyrin: 93 kDa.

Positive Controls: rat brain extract: sc-2392, HeLa whole cell lysate: sc-2200 or BC$_3$H1 cell lysate: sc-2299.

DATA
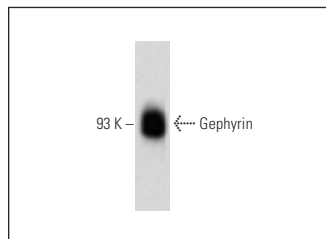
Gephyrin (45): sc-135920. Western blot analysis of Gephyrin expression in rat brain tissue extract.

Gephyrin (45): sc-135920. Immunoperoxidase staining of formalin-fixed, paraffin-embedded rat cerebellum tissue showing cytoplasmic staining.

SELECT PRODUCT CITATIONS

1. Aldahl, J., et al. 2020. Aberrant activation of hepatocyte growth factor/ MET signaling promotes β-catenin-mediated prostatic tumorigenesis. J. Biol. Chem. 295: 631-644.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.