SANTA CRUZ BIOTECHNOLOGY, INC.

Gephyrin (G-6): sc-25311

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 have been identified in rat and human brain tissue.

CHROMOSOMAL LOCATION

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

SOURCE

Gephyrin (G-6) is a mouse monoclonal antibody raised against amino acids 437-736 of Gephyrin of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Gephyrin (G-6) is available conjugated to agarose (sc-25311 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-25311 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-25311 PE), fluorescein (sc-25311 FITC), Alexa Fluor® 488 (sc-25311 AF488), Alexa Fluor® 546 (sc-25311 AF546), Alexa Fluor® 594 (sc-25311 AF594) or Alexa Fluor® 647 (sc-25311 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-25311 AF680) or Alexa Fluor® 790 (sc-25311 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

Gephyrin (G-6) is recommended for detection of Gephyrin of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1,000), 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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: 3611-RF whole cell lysate: sc-2215, human brain extract: sc-364375 or HeLa whole cell lysate: sc-2200.

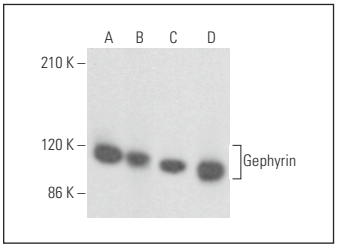
RESEARCH USE

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

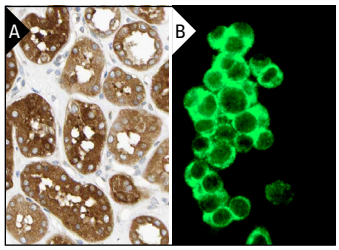
STORAGE

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

DATA



Gephyrin (G-6): sc-25311. Western blot analysis of Gephyrin expression in HeLa (**A**), 3611-RF (**B**) and NCI-H460 (**C**) whole cell lysates and human brain tissue extract (**D**).



Gephyrin (G-6): sc-25311. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in glomeruli and tubuli. Kindly provided by The Swedish Human Protein Atlas (HPA) program (**A**). Immunofluorescence staining of methanol-fixed PC-12 cells showing cytoskeletal localization (**B**).

SELECT PRODUCT CITATIONS

1. Hsu, Y.C., et al. 2011. Chronic treadmill running in normotensive rats resets the resting blood pressure to lower levels by upregulating the hypothalamic GABAergic system. J. Hypertens. 29: 2339-2348.
2. Machado, C.O., et al. 2016. Collybistin binds and inhibits mTORC1 signaling: a potential novel mechanism contributing to intellectual disability and autism. Eur. J. Hum. Genet. 24: 59-65.
3. Li, Y., et al. 2017. The frequency-dependent aerobic exercise effects of hypothalamic GABAergic expression and cardiovascular functions in aged rats. Front. Aging Neurosci. 9: 212.
4. Di Liberto, G., et al. 2018. Neurons under T cell attack coordinate phagocyte-mediated synaptic stripping. Cell 175: 458-471.e19.
5. Valencia, M., et al. 2019. Environmental enrichment restores the reduced expression of cerebellar synaptophysin and the motor coordination impairment in rats prenatally treated with betamethasone. Physiol. Behav. 209: 112590.
6. Zhang, M., et al. 2020. AJAP1 affects behavioral changes and GABABR1 level in epileptic mice. Biochem. Biophys. Res. Commun. 524: 1057-1063.
7. Wang, J., et al. 2021. Neuregulin 1/ErbB4 signaling contributes to the anti-epileptic effects of the ketogenic diet. Cell Biosci. 11: 29.
8. Empl, L., et al. 2022. Selective plasticity of callosal neurons in the adult contralesional cortex following murine traumatic brain injury. Nat. Commun. 13: 2659.

PROTOCOLS

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