

## DESCRIPTION

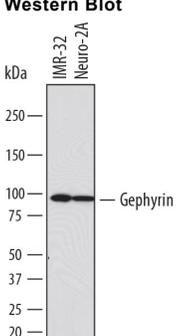
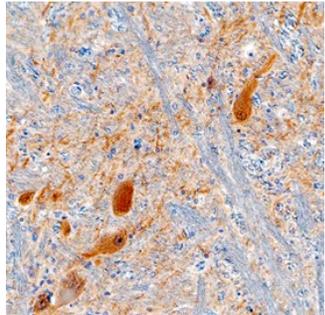
|                           |   |
|---------------------------|---|
| <b>Species Reactivity</b> | Human/Mouse   |
| <b>Specificity</b>        | Detects human Gephyrin/GPHN in direct ELISAs and human and mouse Gephyrin/GPHN Western blots.   |
| <b>Source</b>             | Monoclonal Mouse IgG <sub>1</sub> Clone # 807423  |
| <b>Purification</b>       | Protein A or G purified from hybridoma culture supernatant  |
| <b>Immunogen</b>          | <i>E. coli</i> -derived recombinant human Gephyrin/GPHN<br>Ala2-Ser188<br>Accession # Q9NQX3  |
| <b>Formulation</b>        | Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.<br>*Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS. |

## APPLICATIONS

**Please Note:** Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

|                             | Recommended Concentration | Sample    |
|-----------------------------|---------------------------|-----------|
| <b>Western Blot</b>         | 2 µg/mL                   | See Below |
| <b>Immunohistochemistry</b> | 8-25 µg/mL                | See Below |

## DATA

|   |   |
|---|---|
| <p><b>Western Blot</b></p>  <p><b>Detection of Human and Mouse Gephyrin/GPHN by Western Blot.</b> Western blot shows lysates of IMR-32 human neuroblastoma cell line and Neuro-2A mouse neuroblastoma cell line. PVDF membrane was probed with 2 µg/mL of Mouse Anti-Human Gephyrin/GPHN Monoclonal Antibody (Catalog # MAB7519) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF007). A specific band was detected for Gephyrin/GPHN at approximately 90 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.</p> | <p><b>Immunohistochemistry</b></p>  <p><b>Gephyrin/GPHN in Human Brain.</b> Gephyrin/GPHN was detected in immersion fixed paraffin-embedded sections of human brain (medulla) using Mouse Anti-Human/Mouse Gephyrin/GPHN Monoclonal Antibody (Catalog # MAB7519) at 15 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Mouse HRP-DAB Cell &amp; Tissue Staining Kit (brown; Catalog # CTS002) and counterstained with hematoxylin (blue). Specific staining was localized to neuronal cell bodies. View our protocol for <a href="#">Chromogenic IHC Staining of Paraffin-embedded Tissue Sections</a>.</p> |
|---|---|

## PREPARATION AND STORAGE

|                                |  |
|--------------------------------|--|
| <b>Reconstitution</b>          | Sterile PBS to a final concentration of 0.5 mg/mL.   |
| <b>Shipping</b>                | The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.<br>*Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C   |
| <b>Stability &amp; Storage</b> | <b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>• 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>• 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul> |

## BACKGROUND

Gephyrin (GPHN, from γεφυρα, the Greek word for bridge; also known as molybdopterin adenylyltransferase) is a 90-94 kDa member of both the MoaB and MoeA families of proteins. It has limited expression, being found in hepatocytes and neurons. In neurons, gephyrin is a postsynaptic density cytoplasmic protein that interacts with the subunits of glycine and GABA-A receptors. This interaction is mediated by the ability of gephyrin to form hexameric lattices that act as scaffolds that link the subunits of the two inhibitory receptors to the cell's underlying tubulin network. In addition, the gephyrin lattice may also interact with NLG-1 and -2, suggesting a role for gephyrin in the regulation of glutamatergic synapses. Gephyrin is also known to participate in the synthesis of molybdenum cofactor. This cofactor binds molybdenum, making it available to sulfite and aldehyde reductase. Human gephyrin is 736 amino acids (aa) in length. It contains a 181 aa N-terminal G-domain that possesses MPT Mo-transferase activity (aa 14-166) and a homotrimer interface motif, followed by a 420 aa C-terminal region (aa 319-738) that contains an MPT adenylyltransferase domain (aa 326-736) with an embedded homodimerization motif. There are at least five utilized Ser/Thr phosphorylation sites. Multiple splice variants exist, and represent peptide insertions at multiple sites. There is a 13 aa insertion after Glu98, a 33 aa insertion after Ser243, and 15, 19, 21 and 24 aa insertions after Lys288. Over aa 2-188, human and mouse Gephyrin are identical in amino acid sequence.