

DESCRIPTION

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| Species Reactivity | Human |
| Specificity | Detects human Gephyrin/GPHN in direct ELISAs and Western blots. |
| Source | Polyclonal Sheep IgG |
| Purification | Antigen Affinity-purified |
| Immunogen | <i>E. coli</i> -derived recombinant human Gephyrin/GPHN Ala2-Ser188 Accession # Q9NQX3 |
| Conjugate | Alexa Fluor 532 Excitation Wavelength: 534 nm Emission Wavelength: 553 nm |
| Formulation | Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide |
| *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions. | |

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.

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| Western Blot | Optimal dilution of this antibody should be experimentally determined. |
| Immunohistochemistry | Optimal dilution of this antibody should be experimentally determined. |

PREPARATION AND STORAGE

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| Shipping | The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below. |
| Stability & Storage | Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied |

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 MoaA 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.

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