

Technical Data Sheet

Purified Mouse Anti-Gephyrin**Product Information**

Material Number:	612632
Size:	50 µg
Concentration:	250 µg/ml
Clone:	45/Gephyrin
Immunogen:	Rat Gephyrin aa. 569-726
Isotype:	Mouse IgG1
Reactivity:	Drosophila Tested in Development: Human, Mouse, Chicken, Drosophila
Target MW:	93 kDa
Storage Buffer:	Aqueous buffered solution containing BSA, glycerol, and ≤0.09% sodium azide.

Description

The sub-membraneous region of the postsynaptic neuron is an intricate network of cytoskeletal elements generally known as the postsynaptic density. It is thought that this elaborate cytoskeletal region is critical for receptor targeting, clustering, and efficient signal input. Gephyrin, a 93 kDa protein, was identified as a result of its ability to bind to polymerized tubulin (microtubules). Although expressed in all tissues, *gephyrin* mRNA is found most abundantly in brain. Alternative splicing produces at least five different mRNAs. Gephyrin colocalizes and interacts with the glycine receptor at the postsynaptic density. It is possible that Gephyrin acts as an anchor between the glycine receptor and microtubules.

>gb|AAF45488.1| (AE003417) cin gene product [Drosophila melanogaster]
Length = 601

Score = 103 bits (256), Expect = 3e-23

Identities = 67/148 (45%), Positives = 89/148 (59%), Gaps = 9/148 (6%)

Query: 2 SGGVSMGEKDYLKQVLDIDLHAQIHFGRVFMKPLPTTFATLDIDGVRKIIFALPGNPVS 61
SGGVSMG+KD++K VL+ DL +IH GRV +KPG P TFA+ K F LPGNPVS
Sbjct: 435 SGGVSMGDKDFVKSULE-DLQFRIHCGRVNIKPGKPMTFASR-----DKYFFGLPGNPVS 489

Query: 62 AVVTCNLFVVPALRKMVG--ILDPRPTIIKARLSCDVKLDPRPEYHRCILTWHHQEPLPW 119
A VT +LF +PA+R G +++ +L D LD RPE+ R + E +
Sbjct: 490 AFVTFHLFALPAIRFAAGWDRCKCSLVNVLKLLNDFSLDSRPEFVRASVISKSGE--LY 547

Query: 120 AQSTGNQMSSRLMSMRANGLLMLPPKT 147
A GNQ+SSRL S+ A+ L+ LP +T
Sbjct: 548 ASVNGNQISSRLQSIGADVLIINLPART 575

The *Drosophila melanogaster* gene cinnamon encodes a product involved in Mo-molybdopterin cofactor biosynthesis. Similar sequences have been identified in *C.elegans*, *Rattus* and *Saccharomyces cerevisiae*. It has been mapped by recombination to 1-0.0 and cytologically to 1A1. [FBgn0000316] (The FlyBase Consortium (<http://flybase.org/>)). Kamdar et. al., found that cinnamon is homologous to rat Gephyrin, Genetics. 137(3):791-801, 1994.

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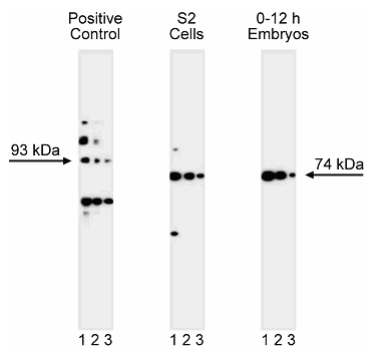
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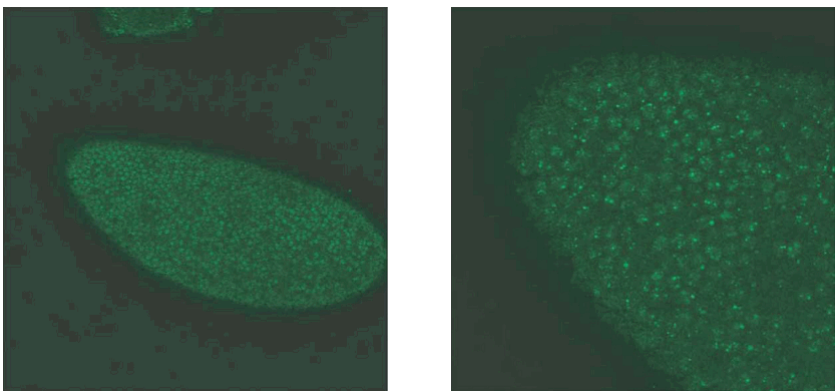
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Western blot analysis of Gephyrin. Lysates from rat cerebrum (5 µg/lane), S2 cells (7.5 µg/lane), and 0-12 hours *Drosophila* embryos (7.5 µg/lane) were probed with anti- Gephyrin at concentrations of 4 µg/ml (lane 1), 2 µg/ml (lane 2), and 1 µg/ml (lane 3). Anti-Gephyrin detects a band of 93 kDa in rat cerebrum and 74 kDa in S2 cells and *Drosophila* embryos.



Gephyrin immunochemical staining of 0-12 hour embryos. Formalin-fixed embryos kept in ethanol at -20°C, were re-hydrated and incubated with anti-Gephyrin at 1 µg/ml in TBST. After extensive washes to remove unbound antibody, Gephyrin signal was visualized with ALEXA fluor 488 secondary antibody (1/300) and confocal microscopy. (Left) Gephyrin staining is found throughout the cellularizing embryo, and it appears more intense in the nuclei with nuclear dots stained. (Right) High magnification view of A.

Preparation and Storage

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography. Store undiluted at -20°C.

Application Notes

Application

Western blot	Routinely Tested
Immunofluorescence	Tested During Development
Immunohistochemistry	Tested During Development
Immunoprecipitation	Tested During Development

Suggested Companion Products

Catalog Number	Name	Size	Clone
554002	HRP Goat Anti-Mouse Ig	1.0 ml	(none)

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Please refer to www.bdbiosciences.com/pharming/en/protocols for technical protocols.
3. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
4. Source of all serum proteins is from USDA inspected abattoirs located in the United States.

References

Meyer G, Kirsch J, Betz H, Langosch D. Identification of a gephyrin binding motif on the glycine receptor beta subunit. *Neuron*. 1995; 15(3):563-572.(Biology)
 Prior P, Schmitt B, Grenningloh G, et al. Primary structure and alternative splice variants of gephyrin, a putative glycine receptor-tubulin linker protein. *Neuron*. 1992; 8(6):1161-1170.(Biology)