

DESCRIPTION

Species Reactivity	Rat
Specificity	Detects rat Agrin in direct ELISAs and Western blots.
Source	Monoclonal Mouse IgG ₁ Clone # 76805
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	<i>S. frugiperda</i> insect ovarian cell line Sf 21-derived recombinant rat Agrin Ala1153-Pro1959 (Pro1788-Ser1798 del) Accession # P25304
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or 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
Western Blot	1 µg/mL	Recombinant Rat Agrin (Catalog # 550-AG)

PREPARATION AND STORAGE

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

BACKGROUND

Agrin is a 400-600 kDa heparan sulfate proteoglycan component of the extracellular matrix. The N-terminal half of rat Agrin, which mediates ECM interactions, contains nine Kazal-type protease inhibitor domains, two Laminin EGF-like domains, and one SEA domain. The C-terminal half contains four EGF-like repeats and three Laminin globular G domains. Human Agrin also contains a Laminin-binding N-terminal Agrin domain (NTA), and mouse and chick Agrin include the NTA domain only by the use of an alternate promoter. Additional isoforms are generated by alternate splicing at sites Y and Z in the C-terminal half of rat Agrin (known as A and B, respectively in chick). Agrin isoforms that contain an insert at site Z (Z+ forms) are known as neural Agrin and are selectively produced by motoneurons. Other isoforms are known as muscle Agrin and are additionally expressed in non-neuronal tissues, particularly in basement membranes of the lung and kidney (1-3). This recombinant protein consists of the C-terminal half of rat Agrin and contains a nine amino acid (aa) insert at the Z site. It shares 59%, 80%, and 94% aa sequence identity with comparable regions of chick, human, and mouse Agrin, respectively. The C-terminal half of Z- and Z+ Agrin binds to α-Dystroglycan and mediates adhesion between motoneurons and myotubes at the neuromuscular junction (NMJ) (4-6). In contrast, only Z+ Agrin is effective at inducing clustering of the postsynaptic Acetylcholine Receptor (AChR) and presynaptic motoneuron differentiation (7, 8). Agrin-induced AChR clustering requires a myotube receptor complex that contains α-Dystroglycan, MuSK, and LRP4 (4, 9-11). Agrin exhibits many functions in addition to NMJ development. It is enriched in senile Alzheimer's disease plaques where it binds the Aβ (1-40) peptide and promotes amyloid fibril formation (12). It regulates neuronal excitability by binding and inhibiting the α3 subunit of the neuronal Na/K ATPase (13). It functions as an epithelial cell attachment receptor for HIV-1 through interactions with the gp41 coat protein (14). During T cell activation, Agrin contributes to formation of the immunological synapse and regulates the threshold of T cell activation (15).

References:

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