abcam

Product datasheet

Anti-Agrin antibody [EPR20025-20] - BSA and Azide free (Capture) ab242962

Recombinant RabMAb

2 Images

Overview

Product name	Anti-Agrin antibody [EPR20025-20] - BSA and Azide free (Capture)
Description	Rabbit monoclonal [EPR20025-20] to Agrin - BSA and Azide free (Capture)
Host species	Rabbit
Tested applications	**Suitable for:** Sandwich ELISA
Species reactivity	**Reacts with:** Human
Immunogen	Recombinant fragment. This information is proprietary to Abcam and/or its suppliers.
General notes	ab242962 is a BSA and Azide Free antibody supplied in an unconjugated format and it is suitable for sandwich ELISAs to quantify Human Agrin. The recommended pair for sandwich ELISA is: Capture: ab242962, Human Agrin Capture Antibody (unconjugated) Detector: **ab242996**, Human Agrin Detector Antibody (unconjugated) The reference range value is 31.25 - 2000 pg/ml. Our **carrier-free** antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. The carrier-free buffer and high concentration allow for increased conjugation efficiency. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications. Use our **conjugation kits** for antibody conjugates that are ready-to-use in as little as 20 minutes with <1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold. The recommended antibody orientation is based on internal optimization for ELISA-based assays. Antibody orientation is assay dependent and needs to be optimized for each assay type. Please note that the range provided for this antibody is only an estimation based on the performance of the product using the recommended antibody pair. Performance of the antibody pair will depend on the specific characteristics of your assay. We guarantee the product works in sandwich ELISA, but we do not guarantee the sensitivity or dynamic range of the antibody in your assay. This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free production

For more information **see here**.

Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to **RabMAb® patents**.

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C.
Storage buffer	Constituent: 100% PBS
Carrier free	Yes
Purity	Protein A purified
Clonality	Monoclonal
Clone number	EPR20025-20
Isotype	IgG

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab242962 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
Sandwich ELISA		Use at an assay dependent concentration. Can be paired for Sandwich ELISA with **Rabbit monoclonal [EPR20025-97] to Agrin - BSA and Azide free (Detector) (ab242996)**.

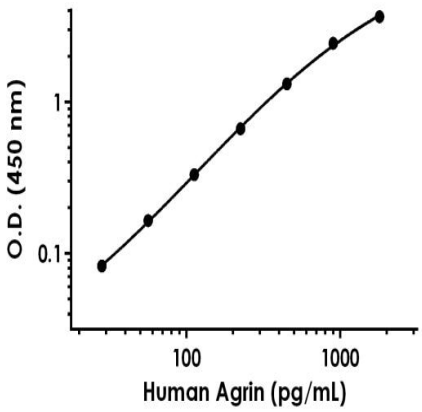
Target

Function

Isoform 1: heparan sulfate basal lamina glycoprotein that plays a central role in the formation and the maintenance of the neuromuscular junction (NMJ) and directs key events in postsynaptic differentiation. Component of the AGRN-LRP4 receptor complex that induces the phosphorylation and activation of MUSK. The activation of MUSK in myotubes induces the formation of NMJ by regulating different processes including the transcription of specific genes and the clustering of AChR in the postsynaptic membrane. Calcium ions are required for maximal AChR clustering. AGRN function in neurons is highly regulated by alternative splicing, glycan binding and proteolytic processing. Modulates calcium ion homeostasis in neurons, specifically by inducing an increase in cytoplasmic calcium ions. Functions differentially in the central nervous system (CNS) by inhibiting the alpha(3)-subtype of Na+/K+-ATPase and evoking depolarization at CNS synapses. This secreted isoform forms a bridge, after release from motor neurons, to basal lamina through binding laminin via the NtA domain.
Isoform 2: transmembrane form that is the predominate form in neurons of the brain, induces

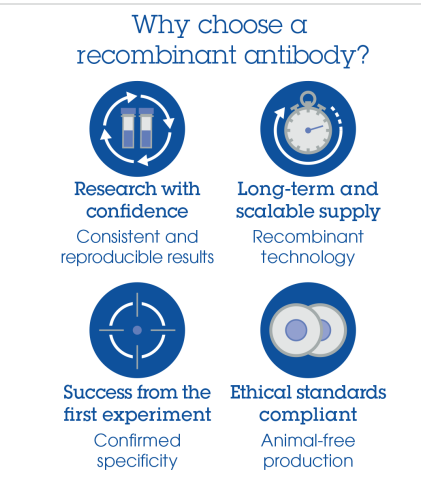
	dendritic filopodia and synapse formation in mature hippocampal neurons in large part due to the attached glycosaminoglycan chains and the action of Rho-family GTPases. Isoform 1, isoform 4 and isoform 5: neuron-specific (z+) isoforms that contain C-terminal insertions of 8-19 AA are potent activators of AChR clustering. Isoform 5, agrin (z+8), containing the 8-AA insert, forms a receptor complex in myotubules containing the neuronal AGRN, the muscle-specific kinase MUSK and LRP4, a member of the LDL receptor family. The splicing factors, NOVA1 and NOVA2, regulate AGRN splicing and production of the 'z' isoforms. Isoform 3 and isoform 6: lack any 'z' insert, are muscle-specific and may be involved in endothelial cell differentiation. Agrin N-terminal 110 kDa subunit: is involved in regulation of neurite outgrowth probably due to the presence of the glycosaminoglcan (GAG) side chains of heparan and chondroitin sulfate attached to the Ser/Thr- and Gly/Ser-rich regions. Also involved in modulation of growth factor signaling. Agrin C-terminal 22 kDa fragment: this released fragment is important for agrin signaling and to exert a maximal dendritic filopodia-inducing effect. All 'z' splice variants (z+) of this fragment also show an increase in the number of filopodia.
Tissue specificity	Expressed in basement membranes of lung and kidney. Muscle- and neuron-specific isoforms are found. Isoforms (y+) with the 4 AA insert and (z+8) isoforms with the 8 AA insert are all neuron-specific. Isoforms (z+11) are found in both neuronal and non-neuronal tissues.
Involvement in disease	Myasthenic syndrome, congenital, 8
Sequence similarities	Contains 4 EGF-like domains. Contains 9 Kazal-like domains. Contains 2 laminin EGF-like domains. Contains 3 laminin G-like domains. Contains 1 NtA (N-terminal agrin) domain. Contains 1 SEA domain.
Domain	The NtA domain, absent in TM-agrin, is required for binding laminin and connecting to basal lamina. Both laminin G-like 2 (G2) and laminin G-like 3 (G3) domains are required for alpha-dystroglycan/DAG1 binding. G3 domain is required for C-terminal heparin, heparan sulfate and sialic acid binding.
Post-translational modifications	Contains heparan and chondroitin sulfate chains and alpha-dystroglycan as well as N-linked and O-linked oligosaccharides. Glycosaminoglycans (GAGs), present in the N-terminal 110 kDa fragment, are required for induction of filopodia in hippocampal neurons. The first cluster (Gly/Ser-rich) for GAG attachment contains heparan sulfate (HS) chains and the second cluster (Ser/Thr-rich), contains chondroitin sulfate (CS) chains. Heparin and heparin sulfate binding in the G3 domain is independent of calcium ions. Binds heparin with a stoichiometry of 2:1. Binds sialic acid with a stoichiometry of 1:1 and binding requires calcium ions. At synaptic junctions, cleaved at two conserved sites, alpha and beta, by neurotrypsin. Cleavage at the alpha-site produces the agrin N-terminal 110-kDa subunit and the agrin C-terminal 110-kDa subunit. Further cleavage of agrin C-terminal 110-kDa subunit at the beta site produces the C-terminal fragments, agrin C-terminal 90 kDa fragment and agrin C-terminal 22 kDa fragment. Excessive cleavage at the beta-site releases large amounts of the agrin C-terminal 22 kDa fragment leading to destabilization at the neuromuscular junction (NMJ).
Cellular localization	Cell junction, synapse. Cell membrane and Secreted, extracellular space, extracellular matrix. Synaptic basal lamina at the neuromuscular junction.

Images



Sandwich ELISA - Anti-Agrin antibody [EPR20025-20] - BSA and Azide free (Capture) (ab242962)

Representative standard curve from corresponding SimpleStep ELISA® Kit (**ab216945**).



Anti-Agrin antibody [EPR20025-20] - BSA and Azide free (Capture) (ab242962)

Our Abpromise to you: Quality guaranteed and expert technical support

- Replacement or refund for products not performing as stated on the datasheet
- Valid for 12 months from date of delivery
- Response to your inquiry within 24 hours
- We provide support in Chinese, English, French, German, Japanese and Spanish
- Extensive multi-media technical resources to help you
- We investigate all quality concerns to ensure our products perform to the highest standards

If the product does not perform as described on this datasheet, we will offer a refund or replacement. For full details of the Abpromise, please visit **https://www.abcam.com/abpromise** or contact our technical team.

Terms and conditions

- Guarantee only valid for products bought direct from Abcam or one of our authorized distributors