ARG82373
Rat Agrin ELISA Kit

Package: 96 wells
Store at: 4°C

Component

Cat. No.	Component Name	Package	Temp
ARG82373-001	Antibody-coated microplate	8 X 12 strips	4°C. Unused strips should be sealed tightly in the air-tight pouch.
ARG82373-002	Standard	2 X 10 ng/vial	4°C
ARG82373-003	Standard/Sample diluent	30 ml (Ready to use)	4°C
ARG82373-004	Antibody conjugate concentrate (100X)	1 vial (100 µl)	4°C
ARG82373-005	Antibody diluent buffer	12 ml (Ready to use)	4°C
ARG82373-006	HRP-Streptavidin concentrate (100X)	1 vial (100 µl)	4°C
ARG82373-007	HRP-Streptavidin diluent buffer	12 ml (Ready to use)	4°C
ARG82373-008	25X Wash buffer	20 ml	4°C
ARG82373-009	TMB substrate	10 ml (Ready to use)	4°C (Protect from light)
ARG82373-010	STOP solution	10 ml (Ready to use)	4°C
ARG82373-011	Plate sealer	4 strips	Room temperature

Summary

Product Description	ARG82373 Rat Agrin ELISA Kit is an Enzyme Immunoassay kit for the quantification of Rat Agrin in serum, plasma (EDTA, heparin) and cell culture supernatants.
Tested Reactivity	Rat
Tested Application	ELISA
Target Name	Agrin
Conjugation	HRP
Conjugation Note	Substrate: TMB and read at 450 nm.
Sensitivity	15.6 pg/ml
Sample Type	Serum, plasma (EDTA, heparin) and cell culture supernatants.
Standard Range	31.2 - 2000 pg/ml
Sample Volume	100 µl
Precision	Intra-Assay CV: 4.7% Inter-Assay CV: 6.4%

Alternate Names	C22; CMS8; Agrin; C90; CMSPPD

Application Instructions

Assay Time	~ 5 hours

Properties

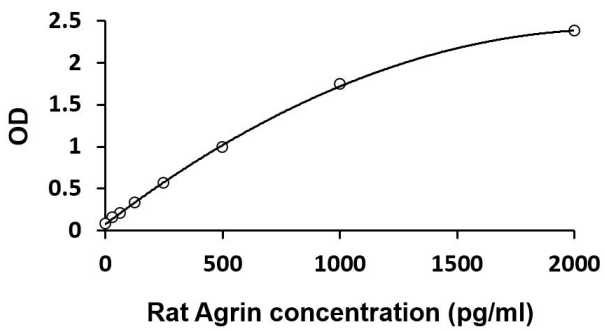
Form	96 well
Storage instruction	Store the kit at 2-8°C. Keep microplate wells sealed in a dry bag with desiccants. Do not expose test reagents to heat, sun or strong light during storage and usage. Please refer to the product user manual for detail temperatures of the components.
Note	For laboratory research only, not for drug, diagnostic or other use.

Bioinformation

Gene Symbol	AGRN
Gene Full Name	agrin
Background	This gene encodes one of several proteins that are critical in the development of the neuromuscular junction (NMJ), as identified in mouse knock-out studies. The encoded protein contains several laminin G, Kazal type serine protease inhibitor, and epidermal growth factor domains. Additional post-translational modifications occur to add glycosaminoglycans and disulfide bonds. In one family with congenital myasthenic syndrome affecting limb-girdle muscles, a mutation in this gene was found. Alternative splicing results in multiple transcript variants encoding different isoforms. [provided by RefSeq, Mar 2015]
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 (By similarity). 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. [UniProt]

Highlight	Related products: New ELISA data calculation tool: Simplify the ELISA analysis by GainData
PTM	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 (By similarity). 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). [UniProt]
Cellular Localization	Isoform 1: Secreted, extracellular space, extracellular matrix. Note=Synaptic basal lamina at the neuromuscular junction. Isoform 2: Cell junction, synapse. Cell membrane; Single-pass type II membrane protein. [UniProt]

Images



ARG82373 Rat Agrin ELISA Kit standard curve image

ARG82373 Rat Agrin ELISA Kit results of a typical standard run with optical density reading at 450 nm.