

## Agrin Protein, Human (1073a.a, CHO, His)

Cat. No.:	HY-P79343
Synonyms:	agrin proteoglycan; Agrin; AGRN
Species:	Human
Source:	CHO
Accession:	O00468 (T30-R1102)
Gene ID:	375790
Molecular Weight:	approximately 155.89 kDa

### PROPERTIES

#### AA Sequence

TCPERALERR	EEEANVVL TG	TVEEILNVDP	VQHTYSCKVR
VWRYLKGKDL	VARESLLDGG	NKVVISGFGD	PLICDNQVST
GDTRIFFVNP	APPYLWPAHK	NELMLNSSLM	RITLRNLEEV
EFCVEDKPGT	HFTPVPTPP	DACRGMLCGF	GAVCEPNAEG
PGRASCVCCK	SPCPSVVAPV	CGSDASTYSN	ECELQRAQCS
QQRRI RL LSR	GPCGSRDPCS	NVTCSFGSTC	ARSADGLTAS
CLCPATCRGA	PEGTVCGSDG	ADYPGECQLL	RRACARQENV
FKKFDGPCDP	CQGALPDPSR	SCRVNPRTRR	PEMLLRPESC
PARQAPVCGD	DGVTYENDCV	MGRSGAARGL	LLQKVRSGQC
QGRDQCPEPC	RFNAVCLSRR	GRPRCSCDRV	TCDGAYRPVC
AQDGRTYDSD	CWRQQAECRQ	QRAIPSKHQG	PCDQAPSPCL
GVQCAF GATC	AVKNGQAACE	CLQACSSLYD	PVCGSDGVTY
GSACELEATA	CTLGREIQVA	RKGPCDRCGQ	CRFGALCEAE
TGRCVCPSEC	VALAQVCGS	DGHTYPS ECM	LHVHACTHQI
SLHVASAGPC	ETCGDAVCAF	GAVCSAGQCV	CPRCEHPPPG
PVCGSDGVTY	GSACELREAA	CLQQTQIEEA	RAGPCEQAEC
GSGGSGSGED	GDCEQELCRQ	RGGIWD E DSE	DGPCVCD FSC
QSVPGSPVCG	SDGVTYSTEC	ELKKARCESQ	RGLYVAAQGA
CRGPTFAPLP	PVAPLHCAQT	PYGCCQDNIT	AARGVGLAGC
PSACQCNPHG	SYGGTCDPAT	GQCSCRPGVG	GLRCDRCEPG
FWNFRGIVTD	GRSGCTPCSC	DPQGAVRDDC	EQMTGLCSCK
PGVAGPKCGQ	CPDGRALGPA	GCEADASAPA	TCAEMRCEFG
ARCVEESGSA	HCVCPLM L TCP	EANATKVC GS	DGVTYGN ECQ
LKTIACRQGL	QISIQLG PC	QEAVAPSTHP	TSASVTVTTP
GLLLSQALPA	PPGALPLAPS	STAHSQTTPP	PSSRPRTTAS
VPRTTVWPVL	TVPPTAPSPA	PSLVASAFGE	SGSTDGSSDE
ELSGDQEASG	GGSGGLEPLE	GSSVATPGPP	VER

#### Biological Activity

Measured by the ability of the immobilized protein to support the adhesion of U87 MG human glioblastoma/astrocytoma cells. The ED<sub>50</sub> for this effect is 195.7 ng/ml, corresponding to a specific activity is 5.11×10<sup>3</sup> units/mg.

<b>Appearance</b>	Lyophilized powder.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution of 20 mM PB, 150 mM NaCl, pH 7.4.
<b>Endotoxin Level</b>	<1 EU/µg, determined by LAL method.
<b>Reconstitution</b>	It is not recommended to reconstitute to a concentration less than 500 µg/mL in ddH <sub>2</sub> O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
<b>Storage &amp; Stability</b>	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
<b>Shipping</b>	Room temperature in continental US; may vary elsewhere.

## DESCRIPTION

### Background

Agrin is a heparan sulfate basal lamina glycoprotein crucial for the formation and maintenance of the neuromuscular junction (NMJ), orchestrating key events in postsynaptic differentiation. As a component of the AGRN-LRP4 receptor complex, it induces the phosphorylation and activation of MUSK, leading to NMJ formation by regulating processes such as gene transcription and AChR clustering in the postsynaptic membrane, where calcium ions play a pivotal role. The neuronal function of Agrin is intricately regulated by alternative splicing, glycan binding, and proteolytic processing. In neurons, it modulates calcium ion homeostasis, inducing an increase in cytoplasmic calcium ions. Agrin also acts differentially in the central nervous system (CNS) by inhibiting the alpha(3)-subtype of Na<sup>+</sup>/K<sup>+</sup>-ATPase, evoking depolarization at CNS synapses. The secreted isoform serves as a bridge between motor neurons and the basal lamina by binding laminin, while the transmembrane form, predominant in brain neurons, induces dendritic filopodia and synapse formation in mature hippocampal neurons through glycosaminoglycan chains and the action of Rho-family GTPases.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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