GARS Blocking Peptide – The purity is >90%,tested by HPLC and MS. Purity

PRODUCT OVERVIEW

Product Name	GARS, Blocking Peptide
Full Product Name	GARS Blocking Peptide
Product Gene Name	GARS blocking peptide
Product Synonym Names	AP 4 A synthetase; Charcot Marie Tooth neuropathy 2D; Charcot Marie Tooth neuropathy neuronal type D; CMT2D; Diadenosine tetraphosphate synthetase; DSMAV; EC 6.1.1.14; Glycine tRNA ligase; Glycyl tRNA synthetase; GlyRS; HMN5; SMAD1
Form/Format	Synthetic peptide was lyophilized with 100% acetonitrile and is supplied as a powder. Reconstitute with 0.1 ml DI water for a final concentration of 10 mg/ml.
Purity/Purification	The purity is >90%,tested by HPLC and MS.
Preparation and Storage	Maintain refrigerated at 2-8 degree C for up to 6 months. For long term storage store at -20 degree C.
Antibody/Peptide Pairs	GARS peptide (MBS9626689) is used for blocking the activity of GARS antibody (MBS9607977)
Molecular Weight	83,166 Da
OMIM	600287
Supply Chain Verification	Manufactured in a lab with traceable raw materials manufactured on site. Coordinated product portfolio of antibodies, pairs, conjugates, recombinant proteins, and immunoassay materials available, please inquire.
Notes	For phospho antibody, we provide phospho peptide (0.5mg) and non-phospho peptide (0.5mg)
ISO Certification	Manufactured in an ISO 9001:2015 Certified Laboratory.
Applications Tested/Suitable for GARS blocking peptide	Blocking/Control
Related Product Information for GARS blocking peptide	Blocking peptides are peptides that bind specifically to the target antibody and block antibody binding. These peptide usually contains the epitope recognized by the antibody. Antibodies bound to the blocking peptide no longer bind to the epitope on the target protein. This mechanism is useful when non-specific binding is an issue, for example, in Western blotting (immunoblot) and immunohistochemistry (IHC). By comparing the staining from the blocked antibody versus the antibody alone, one can see which staining is specific; Specific binding will be absent from the western blot or immunostaining performed with the neutralized antibody.
Other Notes	Small volumes of GARS blocking peptide vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for GARS purchase	MBS9626689 is a blocking peptide targeting GARS.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for GARS. It may not necessarily be applicable to this product.

NCBI GI #	943350815
NCBI GeneID	2617
NCBI Accession #	NP_001303701.1
UniProt Primary Accession #	P41250
UniProt Secondary Accession #	Q969Y1; B3KQA2; B4DIA0

UniProt Related Accession #	P41250
GenBank Nucleotide #	NM_001316772.1
NCBI Official Full Name	glycine--tRNA ligase isoform 2
NCBI Official Synonym Full Names	glycyl-tRNA synthetase
NCBI Official Symbol	GARS
NCBI Official Synonym Symbols	HMN5; CMT2D; DSMAV; GlyRS; SMAD1
UniProt Protein Name	Glycine--tRNA ligase
UniProt Synonym Protein Names	Diadenosine tetraphosphate synthetase; AP-4-A synthetase; Glycyl-tRNA synthetase; GlyRS
Protein Family	Glycine--tRNA ligase
UniProt Gene Name	GARS
UniProt Synonym Gene Names	AP-4-A synthetase; GlyRS
UniProt Entry Name	SYG_HUMAN
NCBI Protein Information	glycine--tRNA ligase
NCBI Summary for GARS	This gene encodes glycyl-tRNA synthetase, one of the aminoacyl-tRNA synthetases that charge tRNAs with their cognate amino acids. The encoded enzyme is an (alpha)2 dimer which belongs to the class II family of tRNA synthetases. It has been shown to be a target of autoantibodies in the human autoimmune diseases, polymyositis or dermatomyositis. Two transcript variants encoding different isoforms have been found for this gene. [provided by RefSeq, Oct 2015]
UniProt Comments for GARS	GARS: Catalyzes the attachment of glycine to tRNA(Gly). Is also able produce diadenosine tetraphosphate (Ap4A), a universal pleiotropic signaling molecule needed for cell regulation pathways, by direct condensation of 2 ATPs. Defects in GARS are the cause of Charcot-Marie-Tooth disease type 2D (CMT2D). CMT2D is a form of Charcot-Marie-Tooth disease, the most common inherited disorder of the peripheral nervous system. Charcot-Marie-Tooth disease is classified in two main groups on the basis of electrophysiologic properties and histopathology: primary peripheral demyelinating neuropathy or CMT1, and primary peripheral axonal neuropathy or CMT2. Neuropathies of the CMT2 group are characterized by signs of axonal regeneration in the absence of obvious myelin alterations, normal or slightly reduced nerve conduction velocities, and progressive distal muscle weakness and atrophy. CMT2D is characterized by a more severe phenotype in the upper extremities (severe weakness and atrophy, absence of tendon reflexes) than in the lower limbs. CMT2D inheritance is autosomal dominant. Defects in GARS are a cause of distal hereditary motor neuronopathy type 5A (HMN5A); also known as distal hereditary motor neuropathy type V (DSMAV). A disorder characterized by distal muscular atrophy mainly affecting the upper extremities, in contrast to other distal motor neuronopathies. These constitute a heterogeneous group of neuromuscular diseases caused by selective degeneration of motor neurons in the anterior horn of the spinal cord, without sensory deficit in the posterior horn. The overall clinical picture consists of a classical distal muscular atrophy syndrome in the legs without clinical sensory loss. The disease starts with weakness and wasting of distal muscles of the anterior tibial and peroneal compartments of the legs. Later on, weakness and atrophy may expand to the proximal muscles of the lower limbs and/or to the distal upper limbs. Belongs to the class-II aminoacyl-tRNA synthetase family. Protein type: Translation; Mitochondrial; Ligase; EC 6.1.1.14 Chromosomal Location of Human Ortholog: 7p15 Cellular Component: nucleoplasm; mitochondrial matrix; cytoplasm; cytosol; secretory granule Molecular Function: protein dimerization activity; glycine-tRNA ligase activity; ATP binding Biological Process: tRNA aminoacylation for protein translation; glycyl-tRNA aminoacylation; gene expression; diadenosine tetraphosphate biosynthetic process Disease: Neuronopathy, Distal Hereditary Motor, Type Va; Charcot-marie-tooth Disease, Axonal, Type 2d
Research Articles on GARS	**1.** At the active site, a glycyl-AMP molecule is synthesized and is waiting for the transfer of the glycyl moiety to occur.

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