GART siRNA – Trifunctional Purine Biosynthetic Protein Adenosine-3 Isoform 1 (Human)

PRODUCT OVERVIEW

Product Name	GART, siRNA
Full Product Name	GART siRNA (Human)
Product Gene Name	GART sirna
Product Synonym Names	PGFT; PRGS; Trifunctional purine biosynthetic protein adenosine-3
Host	Synthetic
Species Reactivity	Human
Form/Format	Lyophilized powder
Purity/Purification	> 97%
Specificity	GART siRNA (Human) is a target-specific 19-23 nt siRNA oligo duplexes designed to knock down gene expression.
Preparation and Storage	Shipped at 4 degree C. Store at -20 degree C for one year.
Molecular Weight	46,033 Da
OMIM	138440
3D Structure	ModBase 3D Structure for P22102
Negative Control	siRNA Negative Control (Catalog# MBS8241404) is a non-targeting 21 nt siRNA recommended as a negative control for experiments using targeted siRNA transfection.
Quality Control	Oligonucleotide synthesis is monitored base by base through trityl analysis to ensure appropriate coupling efficiency. The oligo is subsequently purified by affinity-solid phase extraction. The annealed RNA duplex is further analyzed by mass spectrometry to verify the exact composition of the duplex. Each lot is compared to the previous lot by mass spectrometry to ensure maximum lot-to-lot consistency.
Directions for Use	We recommends transfection with 100 nM siRNA 48 to 72 hours prior to cell lysis. Before resuspending, briefly centrifuge the tube to ensure the lyophilized siRNA is at the bottom of the tube. Resuspend the siRNA oligos to an appropriate concentration with DEPC water. For each vial, suitable for 250 transfections in 24 well plate (20 pmol for each well).
Components	We offer pre-designed sets of 3 different target-specific siRNA oligo duplexes of human GART gene. Each vial contains 5 nmol of lyophilized siRNA. The duplexes can be transfected individually or pooled together to achieve knockdown of the target gene, which is most commonly assessed by qPCR or western blot. Our siRNA oligos are also chemically modified (2'-OMe) at no extra charge for increased stability and enhanced knockdown in vitro and in vivo.
Applications Tested/Suitable for GART sirna	RNA Interference (RNAi)
Related Product Information for GART sirna	MBS8240409 is an siRNA targeting GART. Also known as GART siRNA (Human). Reactive in Human. Host: Synthetic. siRNA to inhibit GART expression using RNA interference
Other Notes	Small volumes of GART sirna 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.

ADDITIONAL DETAILS

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

NCBI GI #	4503915
NCBI GeneID	2618
NCBI Accession #	NP_000810.1
UniProt Primary Accession #	P22102
UniProt Secondary Accession #	O14659; Q52M77; A8K945; A8KA32; D3DSF3; D3DSF4
UniProt Related Accession #	P22102
GenBank Nucleotide #	NM_000819.4
NCBI Official Full Name	trifunctional purine biosynthetic protein adenosine-3 isoform 1
NCBI Official Synonym Full Names	phosphoribosylglycinamide formyltransferase, phosphoribosylglycinamide synthetase, phosphoribosylaminoimidazole synthetase
NCBI Official Symbol	GART
NCBI Official Synonym Symbols	AIRS; GARS; PAIS; PGFT; PRGS; GARTF
UniProt Protein Name	Trifunctional purine biosynthetic protein adenosine-3
UniProt Synonym Protein Names	Phosphoribosylamine--glycine ligase (EC:6.3.4.13)Alternative name(s):Glycinamide ribonucleotide synthetase; GARS; Phosphoribosylglycinamide synthetase
Protein Family	Phosphoribosylglycinamide formyltransferase
UniProt Gene Name	GART
UniProt Synonym Gene Names	PGFT; PRGS; GARS; AIRS; GART
UniProt Entry Name	PUR2_HUMAN
NCBI Protein Information	trifunctional purine biosynthetic protein adenosine-3
NCBI Summary for GART	The protein encoded by this gene is a trifunctional polypeptide. It has phosphoribosylglycinamide formyltransferase, phosphoribosylglycinamide synthetase, phosphoribosylaminoimidazole synthetase activity which is required for de novo purine biosynthesis. This enzyme is highly conserved in vertebrates. Alternative splicing of this gene results in two transcript variants encoding different isoforms. [provided by RefSeq, Jul 2008]
UniProt Comments for GART	GART: a highly conserved trifunctional enzyme. It has phosphoribosylglycinamide formyltransferase, phosphoribosylglycinamide synthetase, phosphoribosylaminoimidazole synthetase activity which is required for de novo purine biosynthesis. Inhibition of the de novo purine synthesis by folate analogs blocks the p53-dependent G1 checkpoint in human carcinoma cell lines. Two splice variant isoforms have been described. Protein type: Cofactor and Vitamin Metabolism - one carbon pool by folate; EC 6.3.3.1; Nucleotide Metabolism - purine; Enzyme, cellular metabolism; EC 2.1.2.2; Methyltransferase; Ligase; EC 6.3.4.13; Mitochondrial Chromosomal Location of Human Ortholog: 21q22.11 Cellular Component: cytosol Molecular Function: methyltransferase activity; metal ion binding; phosphoribosylamine-glycine ligase activity; phosphoribosylformylglycinamidine cyclo-ligase activity; phosphoribosylglycinamide formyltransferase activity; ATP binding Biological Process: methylation; response to organic substance; purine ribonucleoside monophosphate biosynthetic process; glycine metabolic process; tetrahydrofolate biosynthetic process; purine base biosynthetic process; response to inorganic substance; nucleobase, nucleoside and nucleotide metabolic process; cerebellum development; cerebral cortex development; purine base metabolic process; 'de novo' IMP biosynthetic process
Research Articles on GART	**1.** most significant association was detected for GART rs8971. Compared with individuals with the TT genotype, the age- and sex-adjusted odds ratio (OR) for developing HCC was 1.44 (95% confidence interval (CI): 1.03-2.02) among those with the CC genotype

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