SHMT2 Antibody – Rabbit Polyclonal

PRODUCT OVERVIEW

Product Name	SHMT2, Polyclonal Antibody
Full Product Name	SHMT2 Rabbit pAb
Product Gene Name	anti-SHMT2 antibody
Product Synonym Names	GLYA; SHMT; HEL-S-51e
Clonality	Polyclonal
Isotype	IgG
Host	Rabbit
Species Reactivity	Human, Mouse, Rat
Form/Format	PBS with 0.02% Sodium Azide, 50% Glycerol, pH 7.3.
Purity/Purification	Affinity Purified
Preparation and Storage	Store at -20 degree C. Avoid freeze/thaw cycles.
Molecular Weight	52kDa
OMIM	138450
3D Structure	ModBase 3D Structure for P34897
Immunogen	Recombinant fusion protein containing a sequence corresponding to amino acids 265-504 of human SHMT2 (NP_005403.2).
Cellular Localization	Cytoplasm, Membrane, Mitochondrion, Mitochondrion Inner Membrane, Mitochondrion Nucleoid, Nucleus
ISO Certification	Manufactured in an ISO 9001:2015 Certified Laboratory.
Applications Tested/Suitable for anti-SHMT2 antibody	Western Blot (WB), Immunohistochemistry (IHC), Immunofluorescence (IF)
Application Notes for anti-SHMT2 antibody	WB: 1:500-1:2000 IHC: 1:50-1:200 IF: 1:50-1:200
Related Product Information for anti-SHMT2 antibody	Contributes to the de novo mitochondrial thymidylate biosynthesis pathway via its role in glycine and tetrahydrofolate metabolism. Thymidylate biosynthesis is required to prevent uracil accumulation in mtDNA (PubMed:21876188). Interconversion of serine and glycine (PubMed:25619277). Associates with mitochondrial DNA (PubMed:18063578). Plays a role in the deubiquitination of target proteins as component of the BRISC complex (PubMed:24075985). Required for IFNAR1 deubiquitination by the BRISC complex (PubMed:24075985).
Other Notes	Small volumes of anti-SHMT2 antibody 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 SHMT2 purchase	MBS8544316 is an antibody targeting SHMT2. Also known as SHMT2 Rabbit pAb. Reactive in Human, Mouse, Rat. Host: Rabbit.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for SHMT2. It may not necessarily be applicable to this product.

NCBI GI #	6226865

NCBI GeneID	6472
NCBI Accession #	P34897.3
UniProt Primary Accession #	P34897
UniProt Related Accession #	P34897
NCBI Official Full Name	Serine hydroxymethyltransferase, mitochondrial
NCBI Official Synonym Full Names	serine hydroxymethyltransferase 2
NCBI Official Symbol	SHMT2
NCBI Official Synonym Symbols	GLYA; SHMT; HEL-S-51e
UniProt Protein Name	Serine hydroxymethyltransferase, mitochondrial
UniProt Synonym Protein Names	Glycine hydroxymethyltransferase; Serine methylase
UniProt Gene Name	SHMT2
UniProt Synonym Gene Names	SHMT
UniProt Entry Name	GLYM_HUMAN
NCBI Protein Information	serine hydroxymethyltransferase, mitochondrial
NCBI Summary for SHMT2	This gene encodes the mitochondrial form of a pyridoxal phosphate-dependent enzyme that catalyzes the reversible reaction of serine and tetrahydrofolate to glycine and 5,10-methylene tetrahydrofolate. The encoded product is primarily responsible for glycine synthesis. The activity of the encoded protein has been suggested to be the primary source of intracellular glycine. The gene which encodes the cytosolic form of this enzyme is located on chromosome 17. Alternative splicing results in multiple transcript variants. [provided by RefSeq, Oct 2009]
UniProt Comments for SHMT2	SHMT2: Contributes to the de novo mitochondrial thymidylate biosynthesis pathway. Required to prevent uracil accumulation in mtDNA. Interconversion of serine and glycine. Associates with mitochondrial DNA. Belongs to the SHMT family. 3 isoforms of the human protein are produced by alternative splicing. Protein type: Amino Acid Metabolism - glycine, serine and threonine; Methyltransferase; Energy Metabolism - methane; Cofactor and Vitamin Metabolism - one carbon pool by folate; Mitochondrial; EC 2.1.2.1; Other Amino Acids Metabolism - cyanoamino acid Chromosomal Location of Human Ortholog: 12q12-q14 Cellular Component: microtubule cytoskeleton; mitochondrion; mitochondrial matrix; mitochondrial inner membrane; mitochondrial intermembrane space Molecular Function: L-allo-threonine aldolase activity; identical protein binding; amino acid binding; glycine hydroxymethyltransferase activity; chromatin binding; pyridoxal phosphate binding Biological Process: L-serine biosynthetic process; positive regulation of cell proliferation; one-carbon compound metabolic process; glycine biosynthetic process from serine; protein homotetramerization
Research Articles on SHMT2	**1.** Characterized the serine hydroxymethyltransferase reaction catalyzed by SHMT1 and SHMT2, with a focus on pH dependence and substrate inhibition. SHMT2 maintains a pronounced tetrahydrofolate substrate inhibition even at the alkaline pH characteristic of the mitochondrial matrix, whereas with SHMT1 this is almost abolished. At this pH, SHMT2 also shows a catalytic efficiency that is much higher than that of SHMT1.
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