CBS siRNA – Cystathionine Beta-Synthase Isoform 2 (Mouse)

PRODUCT OVERVIEW

Product Name	CBS, siRNA
Full Product Name	CBS siRNA (Mouse)
Product Gene Name	CBS sirna
Product Synonym Names	Cystathionine beta-synthase; Beta-thionase; Serine sulfhydrase
Host	Synthetic
Species Reactivity	Mouse
Form/Format	Lyophilized powder
Purity/Purification	> 97%
Specificity	CBS siRNA (Mouse) 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	60,193 Da
3D Structure	ModBase 3D Structure for Q91WT9
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 mouse CBS 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 CBS sirna	RNA Interference (RNAi)
Related Product Information for CBS sirna	MBS8224440 is an siRNA targeting CBS. Also known as CBS siRNA (Mouse). Reactive in Mouse. Host: Synthetic. siRNA to inhibit CBS expression using RNA interference
Other Notes	Small volumes of CBS 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 CBS. It may not necessarily be applicable to this product.

NCBI GI #	405778333

NCBI GeneID	12411
NCBI Accession #	NP_001258282.1
UniProt Primary Accession #	Q91WT9
UniProt Secondary Accession #	Q91WU3
UniProt Related Accession #	Q91WT9
GenBank Nucleotide #	NM_001271353.1
NCBI Official Full Name	cystathionine beta-synthase isoform 2
NCBI Official Synonym Full Names	cystathionine beta-synthase
NCBI Official Symbol	Cbs
NCBI Official Synonym Symbols	HIP4; AI047524; AI303044
UniProt Protein Name	Cystathionine beta-synthase
UniProt Synonym Protein Names	Beta-thionase; Serine sulfhydrase
Protein Family	Cystathionine beta-synthase
UniProt Gene Name	Cbs
UniProt Entry Name	CBS_MOUSE
NCBI Protein Information	cystathionine beta-synthase
UniProt Comments for CBS	CBS: Only known pyridoxal phosphate-dependent enzyme that contains heme. Important regulator of hydrogen sulfide, especially in the brain, utilizing cysteine instead of serine to catalyze the formation of hydrogen sulfide. Hydrogen sulfide is a gastratransmitter with signaling and cytoprotective effects such as acting as a neuromodulator in the brain to protect neurons against hypoxic injury. Defects in CBS are the cause of cystathionine beta- synthase deficiency (CBSD). CBSD is an enzymatic deficiency resulting in altered sulfur metabolism and homocystinuria. The clinical features of untreated homocystinuria due to CBS deficiency include myopia, ectopia lentis, mental retardation, skeletal anomalies resembling Marfan syndrome, and thromboembolic events. Light skin and hair can also be present. Biochemical features include increased urinary homocystine and methionine. Belongs to the cysteine synthase/cystathionine beta- synthase family. 2 isoforms of the human protein are produced by alternative splicing. Protein type: Lyase; Amino Acid Metabolism - glycine, serine and threonine; EC 4.2.1.22; Other Amino Acids Metabolism - selenoamino acid; Amino Acid Metabolism - cysteine and methionine Cellular Component: intracellular membrane-bound organelle; cytoplasm; nucleolus; cytosol; nucleus Molecular Function: identical protein binding; enzyme binding; protein homodimerization activity; cystathionine beta-synthase activity; metal ion binding; ubiquitin protein ligase binding; heme binding; lyase activity; pyridoxal phosphate binding Biological Process: maternal process involved in pregnancy; transsulfuration; cysteine biosynthetic process; cysteine biosynthetic process from serine; superoxide metabolic process; cerebellum morphogenesis; homocysteine metabolic process; cysteine biosynthetic process via cystathionine; response to folic acid; regulation of JNK activity; blood vessel remodeling; regulation of cGMP metabolic process; amino acid biosynthetic process; regulation of blood vessel size; negative regulation of apoptosis; endochondral ossification
Research Articles on CBS	**1.** CBS disruption causes embryo retention and developmental delay in the mouse oviduct.
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