SPTA1 siRNA – Spectrin Alpha Chain, Erythrocytic 1 (Human)

PRODUCT OVERVIEW

Product Name	SPTA1, siRNA
Full Product Name	SPTA1 siRNA (Human)
Product Gene Name	SPTA1 sirna
Product Synonym Names	SPTA; Spectrin alpha chain. erythrocytic 1; Erythroid alpha-spectrin
Host	Synthetic
Species Reactivity	Human
Form/Format	Lyophilized powder
Purity/Purification	> 97%
Specificity	SPTA1 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	279,674 Da
OMIM	130600
3D Structure	ModBase 3D Structure for P02549
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 SPTA1 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 SPTA1 sirna	RNA Interference (RNAi)
Related Product Information for SPTA1 sirna	MBS8227259 is an siRNA targeting SPTA1. Also known as SPTA1 siRNA (Human). Reactive in Human. Host: Synthetic. siRNA to inhibit SPTA1 expression using RNA interference
Other Notes	Small volumes of SPTA1 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 SPTA1. It may not necessarily be applicable to this product.

NCBI GI #	115298659
NCBI GeneID	6708
NCBI Accession #	NP_003117.2
UniProt Primary Accession #	P02549
UniProt Secondary Accession #	Q15514; Q5VYL1; Q5VYL2; Q6LDY5
UniProt Related Accession #	P02549
GenBank Nucleotide #	NM_003126.2
NCBI Official Full Name	spectrin alpha chain, erythrocytic 1
NCBI Official Synonym Full Names	spectrin, alpha, erythrocytic 1
NCBI Official Symbol	SPTA1
NCBI Official Synonym Symbols	EL2; HPP; HS3; SPH3; SPTA
UniProt Protein Name	Spectrin alpha chain, erythrocytic 1
UniProt Synonym Protein Names	Erythroid alpha-spectrin
Protein Family	Spectrin
UniProt Gene Name	SPTA1
UniProt Synonym Gene Names	SPTA
UniProt Entry Name	SPTA1_HUMAN
NCBI Protein Information	spectrin alpha chain, erythrocytic 1
NCBI Summary for SPTA1	Spectrin is an actin crosslinking and molecular scaffold protein that links the plasma membrane to the actin cytoskeleton, and functions in the determination of cell shape, arrangement of transmembrane proteins, and organization of organelles. It is a tetramer made up of alpha-beta dimers linked in a head-to-head arrangement. This gene is one member of a family of alpha-spectrin genes. The encoded protein is primarily composed of 22 spectrin repeats which are involved in dimer formation. It forms weaker tetramer interactions than non-erythrocytic alpha spectrin, which may increase the plasma membrane elasticity and deformability of red blood cells. Mutations in this gene result in a variety of hereditary red blood cell disorders, including elliptocytosis type 2, pyropoikilocytosis, and spherocytic hemolytic anemia. [provided by RefSeq, Jul 2008]

UniProt Comments for SPTA1	SPTA1: Spectrin is the major constituent of the cytoskeletal network underlying the erythrocyte plasma membrane. It associates with band 4.1 and actin to form the cytoskeletal superstructure of the erythrocyte plasma membrane. Defects in SPTA1 are the cause of elliptocytosis type 2 (EL2). EL2 is a Rhesus-unlinked form of hereditary elliptocytosis, a genetically heterogeneous, autosomal dominant hematologic disorder. It is characterized by variable hemolytic anemia and elliptical or oval red cell shape. Defects in SPTA1 are a cause of hereditary pyropoikilocytosis (HPP). HPP is an autosomal recessive disorder characterized by hemolytic anemia, microspherocytosis, poikilocytosis, and an unusual thermal sensitivity of red cells. Defects in SPTA1 are the cause of spherocytosis type 3 (SPH3); also known as hereditary spherocytosis type 3 (HS3). Spherocytosis is a hematologic disorder leading to chronic hemolytic anemia and characterized by numerous abnormally shaped erythrocytes which are generally spheroidal. SPH3 is characterized by severe hemolytic anemia. Inheritance is autosomal recessive. Belongs to the spectrin family. 2 isoforms of the human protein are produced by alternative splicing. Protein type: Cytoskeletal; Motility/polarity/chemotaxis Chromosomal Location of Human Ortholog: 1q21 Cellular Component: spectrin; cytosol; actin cytoskeleton Molecular Function: actin filament binding; protein binding; structural constituent of cytoskeleton; protein heterodimerization activity; calcium ion binding Biological Process: axon guidance; regulation of cell shape; plasma membrane organization and biogenesis; positive regulation of protein binding; actin filament capping; actin filament organization; hemopoiesis; positive regulation of T cell proliferation; porphyrin biosynthetic process; lymphocyte homeostasis Disease: Elliptocytosis 2; Pyropoikilocytosis, Hereditary; Spherocytosis, Type 3
Research Articles on SPTA1	**1.** In this review, we summarize the state of knowledge about interactions between spectrin and membrane lipids
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