GNAS siRNA – Protein GNAS Isoform F (Mouse)

PRODUCT OVERVIEW

Product Name	GNAS, siRNA
Full Product Name	GNAS siRNA (Mouse)
Product Gene Name	GNAS sirna
Product Synonym Names	GNAS1; Guanine nucleotide-binding protein G(s) subunit alpha isoforms XLas; Adenylate cyclase-stimulating G alpha protein; Extra large alphas protein; XLalphas
Host	Synthetic
Species Reactivity	Mouse
Form/Format	Lyophilized powder
Purity/Purification	> 97%
Specificity	GNAS 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	45,664 Da
3D Structure	ModBase 3D Structure for Q6R0H7
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 GNAS 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 GNAS sirna	RNA Interference (RNAi)
Related Product Information for GNAS sirna	MBS8241398 is an siRNA targeting GNAS. Also known as GNAS siRNA (Mouse). Reactive in Mouse. Host: Synthetic. siRNA to inhibit GNAS expression using RNA interference
Other Notes	Small volumes of GNAS 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 GNAS. It may not necessarily be applicable to this product.

NCBI GI #	117959921

NCBI GeneID	14683
NCBI Accession #	NP_001070975.1
UniProt Primary Accession #	Q6R0H7
UniProt Secondary Accession #	Q6R0H4; Q6R0H5; Q6R2J5; Q9JJX0; Q9Z1N8; A2A607; A2A608
UniProt Related Accession #	P63094; Q6R0H6; Q6R0H7; Q9Z0F1
GenBank Nucleotide #	NM_001077507.2
NCBI Official Full Name	protein GNAS isoform f
NCBI Official Synonym Full Names	GNAS (guanine nucleotide binding protein, alpha stimulating) complex locus
NCBI Official Symbol	Gnas
NCBI Official Synonym Symbols	P1; P2; P3; GSP; Gsa; POH; GPSA; Nesp; SCG6; Gnas1; Nespl; PHP1A; PHP1B; Gnasxl; Nesp55; Oedsml; Galphas; Oed-Sml; Gs-alpha; 5530400H20Rik; A930027G11Rik; C130027O20Rik
UniProt Protein Name	Guanine nucleotide-binding protein G(s) subunit alpha isoforms XLas
UniProt Synonym Protein Names	Adenylate cyclase-stimulating G alpha protein; Extra large alphas protein; XLalphas
Protein Family	Neuroendocrine secretory protein
UniProt Gene Name	Gnas
UniProt Synonym Gene Names	XLalphas
UniProt Entry Name	GNAS1_MOUSE
NCBI Protein Information	protein ALEX; protein GNAS; protein SCG6 (secretogranin VI)
NCBI Summary for GNAS	This locus has a highly complex imprinted expression pattern. It gives rise to maternally, paternally, and biallelically expressed transcripts that are derived from four alternative promoters and 5' exons. Some transcripts contain a differentially methylated region (DMR) at their 5' exons, which is commonly found in imprinted genes and correlates with transcript expression. This gene has an antisense transcript. One of the transcripts produced from this locus, and the antisense transcript, are both paternally expressed noncoding RNAs, and may regulate imprinting in this region. In addition, one of the transcripts contains a second overlapping ORF, which encodes a structurally unrelated protein - Alex. Alternative splicing of downstream exons is also observed, which results in different forms of the stimulatory G-protein alpha subunit, a key element of the classical signal transduction pathway linking receptor-ligand interactions with the activation of adenylyl cyclase and a variety of cellular reponses. Additional transcript variants have been found for this gene, but the full-length nature and/or biological validity of some variants have not been determined. [provided by RefSeq, Jun 2015]

UniProt Comments for GNAS	G-alpha(s) iso10: a guanine nucleotide-binding protein of the G12 class of G-alpha proteins. Agonist binding to Gq-coupled receptors may block Akt activation via the release of active G-alpha(q) subunits that inhibit phosphatidylinositol 3-kinase. Heterotrimeric G proteins are composed of 3 units; alpha, beta and gamma. The alpha chain contains the guanine nucleotide binding site. Protein type: G protein, heterotrimeric; G protein, heterotrimeric alpha G(s); Vesicle; Oncoprotein; Membrane protein, peripheral; G protein Cellular Component: dendrite; extracellular region; cytosol; lipid raft; ruffle; cell projection; membrane; perinuclear region of cytoplasm; cytoplasm; plasma membrane; heterotrimeric G-protein complex; trans-Golgi network membrane; intrinsic to membrane; cytoplasmic vesicle; nucleus; vesicle; endosome; sarcolemma Molecular Function: corticotropin-releasing hormone receptor 1 binding; GTPase activity; protein domain specific binding; GTP binding; guanyl nucleotide binding; metal ion binding; nucleotide binding; G-protein alpha-subunit binding; G-protein beta-subunit binding; insulin-like growth factor receptor binding; ionotropic glutamate receptor binding; signal transducer activity; protein binding; mu-type opioid receptor binding; beta-2 adrenergic receptor binding; G-protein beta/gamma-subunit binding; D1 dopamine receptor binding; alpha-tubulin binding Biological Process: skin development; developmental growth; positive regulation of osteoclast differentiation; signal transduction; G-protein signaling, adenylate cyclase activating pathway; embryonic hindlimb morphogenesis; post-embryonic development; calcium ion homeostasis; positive regulation of cAMP biosynthetic process; tissue homeostasis; DNA methylation; negative regulation of blood pressure; skeletal development; endochondral ossification; dopamine receptor, adenylate cyclase activating pathway; post-embryonic body morphogenesis; response to drug; sensory perception of chemical stimulus; negative regulation of multicellular organism growth; multicellular organism growth; embryonic cranial skeleton morphogenesis; regulation of transcription from RNA polymerase II promoter; G-protein coupled receptor protein signaling pathway; positive regulation of osteoblast differentiation; cartilage development; energy reserve metabolic process; positive regulation of protein amino acid phosphorylation; cognition
Research Articles on GNAS	**1.** Gsalpha mutations are sufficient to cause FD, and are per se compatible with germline transmission and normal embryonic development in mice. Our novel murine lines constitute the first model of FD.
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