

Product datasheet for **SC109275**

G protein alpha S (GNAS) (NM_000516) Human Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	G protein alpha S (GNAS) (NM_000516) Human Untagged Clone
Tag:	Tag Free
Symbol:	G protein alpha S
Synonyms:	AHO; C20orf45; GNAS1; GPSA; GSA; GSP; NESP; PITA3; POH; SCG6; SgVI
Mammalian Cell Selection:	None
Vector:	<u>pCMV6-XL5</u>
E. coli Selection:	Ampicillin (100 ug/mL)
Fully Sequenced ORF:	>OriGene ORF within SC109275 sequence for NM_000516 edited (data generated by NextGen Sequencing)

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ATGGGCTGCCTCGGGAACAGTAAGACCGAGGACCAGCGCAACGAGGAGAAGGCGCAGCGT
GAGGCCAACAAAAAGATCGAGAAGCAGCTGCAGAAGGACAAGCAGGTCTACCGGGCCACG
CACCGCCTGCTGCTGCTGGGTGCTGAGAAATCTGGTAAAAGCACCATTTGTAAGCAGATG
AGGATCCTGCATGTTAATGGGTTAATGGAGAGGGCGGCGAAGAGGACCCGCAGGCTGCA
AGGAGCAACAGCGATGGTGAGAAGGCAACCAAAGTGCAGGACATCAAAAAACAACCTGAAA
GAGGCGATTGAAACCATTTGGCCGCCATGAGCAACCTGGTGCCCCCGTGGAGCTGGCC
AACCCCGAGAACCAGTTCAGAGTGGACTACATTCTGAGTGTGATGAACGTGCCTGACTTT
GACTTCCCTCCGAATTCTATGAGCATGCCAAGGCTCTGTGGGAGGATGAAGGAGTGCCT
GCCTGCTACGAACGCTCCAACGAGTACCAGCTGATTGACTGTGCCAGTACTTCTCTGGAC
AAGATCGACGTGATCAAGCAGGCTGACTATGTGCCGAGCGATCAGGACCTGCTTCGCTGC
CGTGCTCCTGACTTCTGGAATCTTTGAGACCAAGTTCCAGGTGGACAAAAGTCAACTCCAC
ATGTTTGACGTGGGTGGCCAGCGCGATGAACGCCGCAAGTGGATCCAGTCTTCAACGAT
GTGACTGCCATCATCTTCGTGGTGGCCAGCAGCAGCTACAACATGGTCATCCGGGAGGAC
AACCAGACCAACCGCCTGCAGGAGGCTCTGAACCTCTTCAAGAGCATCTGGAACAACAGA
TGGCTGCGCACCATCTCTGTGATCCTGTTCCCTCAACAAGCAAGATCTGCTCGCTGAGAAA
GTCCTTGCTGGGAAATCGAAGATTGAGGACTACTTTCCAGAATTTGCTCGCTACACTACT
CCTGAGGATGCTACTCCCGAGCCCGAGAGGACCCACGCGTGACCCGGGCAAGTACTTC
ATTCGAGATGAGTTTCTGAGGATCAGCACTGCCAGTGGAGATGGGCGTCACTACTGCTAC
CCTCATTTACCTGCGCTGTGGACACTGAGAACATCCGCCGTGTGTTCAACGACTGCCGT
GACATCATTACGCGCATGCACCTTCGTCAGTACGAGCTGCTCTAA

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Clone variation with respect to NM_000516.4
393 c=>t



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5' Read Nucleotide Sequence:

>OriGene 5' read for NM_000516 unedited
 CAGAATTTTGTAAACGACTCACTATAGGGGCGGCCGCGAATTCGCACGAGGCGCCCGCG
 CCCGCGCCGCGCCAGCCCGGCCGCGCCCGCCGCGCCCGCCGCGCCATGGGCTGCCTC
 GGGAACAGTAAGACCGAGGACCAGCGCAACGAGGAGAAGGCGCAGCGTGAGGCCAACAAA
 AAGATCGAGAAGCAGCTGCAGAAGGACAAGCAGGTCTACCGGGCCACGCACCGCCTGCTG
 CTGCTGGGTGCTGGAGAATCTGGTAAAAGCACCATTGTGAAGCAGATGAGGATCCTGCAT
 GTTAATGGGTAAATGGAGAGGGCGCGAAGAGGACCCGACGGCTGCAAGGAGCAACAGC
 GATGGCAGTGAGAAGGCAACCAAAGTGCAGGACATCAAAAACAACCTGAAAGAGGCGATT
 GAAACCATTGTGGCCGCCATGAGCAACCTGGTGCCCCCGTGGAGCTGGCCAACCCCGAG
 AACCAAGTTCAGAGTGACTACATTCTGAGTGTGATGAACGTGCCTGACTTTGACTTCCCT
 CCCGAATTCTATGAGCATGCCAAGGCTCTGTGGGAGGATGAAGGAGTGCCTGCCTGCTAC
 GAACGCTCCAACGAGTACCAGCTGATTGACTGTGCCAGTACTTCTGGACAAGATCGAC
 GTGATCAAGCAGGCTGACTATGTCCGAGCGATCAGGACCTGCTTCGCTGCCGTGCTCTG
 ACTTCTGGAATCTTTGAGACCAAGTTCAGGTGGACAAAGTCAACTTCCACATGNTTTGA
 CGTGGTGGCCAGCGCGATGAACGCCNGCAGTGGGATCCAGTGCTTTCACGATGTGACTGC
 CATCATCTTCGTGGTGGCCAGCAGCAGCTACACATGGTCATCC

3' Read Nucleotide Sequence:

>OriGene 3' read for NM_000516 unedited
 TTTGAACCGCGCCGAATCTAGGATCGAGTTTTTTTTTTTTTTTTTTTGTCCACATTTAAT
 TTTTATTTTGATTTTTTTAATGCTGCACAACAATATTTATTTTCAATTTGTTTCTTTTA
 TTTTATTTTATTTGTTTGTCTGCTGCTGTTTTATTTATTTTACTGAAAGTGAGAGGGAAC
 TTTTGTGGCCTTTTTTCTTTTTCTGTAGGCCCGCCTTTTAAACTTTCTAAATTTGGAAC
 ATCTAAGCAAGCTGAAGGAAAAGGGGTTTCGCAAAATCACTCGGGGGAAGGAAAGGT
 TGCTTTGTTAATCATGCCCTATGGTGGGTGATTAAGTCTGTACAATTACGTTTCACTT
 TTAATTAATTGTCTTAAGCTNTAATTAATTTGGGGTTCCCTTCTTAGAGCAGCTCGT
 ACTGACGAAGGTGCATGCGCTGAATGATGTACGGCAGTCGTTGAACACACGGCGGATGT
 TCTCAGTGTCCACAGCGCANGTGAATGANGGTAGCAGTAGTGACGCCCATCTCCACTGG
 CAGTGCTGATCCTCAGAACTCATCTCGAATGAAGTACTTGGNCCCCGGTACGCGNTGG
 TCCCTCTCCGGCTCGGNAGTAGCATCCTCCAGAGTAGTGTANCGAGCAAATCTGGAAGT
 AGTTCTCAATCTTCGATTTCCACCAGGACCTTTAACGAGCAATCTTGCTGGTTGAGGA
 CCAGATCCAGAAAAGGTGCCAGCCTTCTGTGTTCCAGAGCCTTTGAAAAGTTTAAACC
 TCCTGCAGGCGTTGGCCTGGTTGTCCTTCCGGTAAACATGTTGACTTGTGTTGTTGCCCC
 ACCAAAAAATGGCCGTCACCTTTTGAAGACCTGGATCCTTTCGGGGTTATCCGCTGGCCCC
 CCCGTAATAATTGGGAAATTGCTTTGTCCCTGGAACCTGGTCAAATTTCCAAATTGAAC
 ACGGCGAAACAGTTCTGTACCTTGCCAAAAACCTTTTAT

Restriction Sites:

NotI-NotI

ACCN:

NM_000516

Insert Size:

1800 bp

OTI Disclaimer: Due to the inherent nature of this plasmid, standard methods to replicate additional amounts of DNA in E. coli are highly likely to result in mutations and/or rearrangements. Therefore, OriGene does not guarantee the capability to replicate this plasmid DNA. Additional amounts of DNA can be purchased from OriGene with batch-specific, full-sequence verification at a reduced cost. Please contact our customer care team at custsupport@origene.com or by calling 301.340.3188 option 3 for pricing and delivery.

The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in agreement with the reference, but a complete review of all prevailing variants is recommended prior to use. [More info](#)

Components: The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).

Reconstitution Method:

1. Centrifuge at 5,000xg for 5min.
2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.
3. Close the tube and incubate for 10 minutes at room temperature.
4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.
5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.

RefSeq: [NM_000516.3](#), [NP_000507.1](#)

RefSeq Size: 1593 bp

RefSeq ORF: 1185 bp

Locus ID: 2778

UniProt ID: [O95467](#)

Cytogenetics: 20q13.32

Domains: G-alpha

Protein Families: Druggable Genome, Secreted Protein

Protein Pathways: Calcium signaling pathway, Dilated cardiomyopathy, Gap junction, GnRH signaling pathway, Long-term depression, Melanogenesis, Taste transduction, Vascular smooth muscle contraction, Vibrio cholerae infection

Gene Summary:

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, and this DMR is commonly found in imprinted genes and correlates with transcript expression. An antisense transcript is produced from an overlapping locus on the opposite strand. One of the transcripts produced from this locus, and the antisense transcript, are 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 responses. Multiple transcript variants encoding different isoforms have been found for this gene. Mutations in this gene result in pseudohypoparathyroidism type 1a, pseudohypoparathyroidism type 1b, Albright hereditary osteodystrophy, pseudopseudohypoparathyroidism, McCune-Albright syndrome, progressive osseous heteroplasia, polyostotic fibrous dysplasia of bone, and some pituitary tumors. [provided by RefSeq, Aug 2012]

Transcript Variant: This variant (1) is biallelically expressed and encodes guanine nucleotide binding protein alpha s long (GNASL), also known as alpha-S2, a form of the G-protein alpha subunit.