

Product datasheet for **SC109276**

G protein alpha S (GNAS) (NM_016592) Human Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	G protein alpha S (GNAS) (NM_016592) 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:	>NCBI ORF sequence for NM_016592, the custom clone sequence may differ by one or more nucleotides

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ATGGATCGGAGGTCCCGGGCTCAGCAGTGGCGCCGAGCTCGCCATAATTACAACGACCTGTGCCCGCCA  
TAGGCCGCGGGCAGCCACCGCGCTCCTCTGGCTCCTGCTCCATCGCGCTCCTCCGCGCCTTGCCAC  
CTCCAACGCCCGTGCCAGCAGCGCGGGCTGCCAACAGCGCCGGAGCTTCTTAACGCCACCACCGC  
TCCGGCGCCAGGTATTCCTGAGTCCCCGAATCGGAATCTGACCACGAGCAGGAGGCAGACCTTG  
AGCTGTCCCTCCCGAGTGCCTAGAGTACGAGGAAGATTGACTACGAGACCGAGAGCGAGACCGAGT  
CGAAATCGAGTCCGAGACCGACTTCGAGACCGAGCCTGAGACCGCCCCACCCTGAGCCCGAGACCGAG  
CCTGAAGACGATCGCGGCCGGTGGTGCCCAAGCACTCCACCTTCGGCCAGTCCCTCACCAGCGTCTGC  
ACGCTCTCAAGTTGCGAAGCCCCGACGCTCCCCAAGTCGCGCGCGCCAGCACTCAGGAGCCCCAGAG  
CCCCAGGGAAGGGGAGGAGCTCAAGCCCCGAGGACAAAGATCCAAGGGACCCCGAAGAGTCGAAGGAGCC  
AAGGAGGAGAAGCAGCGCGTGCCTGCAAGCCAAAGAAGCCACCGCCGTGACGCGTCCCCGGAGTCCC  
CTTCAAAAAGGGACCCATCCCCATCCGGCGTCACTAA
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5' Read Nucleotide Sequence:	<p>>OriGene 5' read for NM_016592 unedited</p> <pre> AAAGGTACAAATTTGTATACGACTCATATAGGCGGCNCGGAATTCGCACGAGGAAGAGG ACCGGGCGGAGGCACCTCTCTCGAGTCTTAGGCTGCGGAATCTAAGACTCAGCGAGAGGAG CCCGGGAGGAGACAGAATTTCCCTTTTTTCCCATCCCTTCTTCTTGTCTCAGAGAGGCA AGCAAGGCGCGGAGCTTTAGAAAGTTCTTAAGTGGTCAGGAAGGTAGGTGCTTCCCTTTT TCTCCTCACAAAGGAGGTGAGGCTGGGACCTCCGGGCCAGCTTCTCACCTCATAGGGTGTG CCTTTCCCGGCTCCAGCAGCCAATGTGCTTCGGAGCCGCTCTCTGCAGAGCCAGAGGGCA GGCCGGCTTCTCGGTGTGTGCTAAGAGGATGGATCGGAGGTCCCGGGCTCAGCAGTGGC GCCGAGCTCGCCATAATTACAACGACCTGTGCCCGCCATAGGCCGCGGGCAGCCACCG CGCTCCTCTGGCTCTCCTGCTCCATCGCGCTCCTCCGCGCCCTTGCCACCTCCAACGCC GTGCCAGCAGCGCGGGCTGCCAACAGCGCCGGAGCTTCTTAAACGCCACCACCGCT CCGGCGCCAGGTATTCCCTGAGTCCCCGAATCGGAATCTGACCACGAGCAGGAGGAG CAGACCTTGAGCTGTCCCTCCCGAGTGCCTAGAGTACGAGGAAGAGTTCGACTACGAGA CCGAGAGCGAGACCGAGTCCGANATCGAGTCCGAGACCGACTTCGAGACCGAGCCTGAGA CCGCCCCCACCCTGAGCCCGAGACCGAGCCTGAAGACGATCGCGGGCCCGTGGTGCCCA AGCACTCCACCCTCGGGCAGTCTCACCCACGTCTGACGCTCTCAAGTGN </pre>
3' Read Nucleotide Sequence:	<p>>OriGene 3' read for NM_016592 unedited</p> <pre> ATGTACCGCGGCCCGCACTTCTATATCGAGTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT TTTTTTTTTTTTTTTTTTTTTTTTTTTTTCTTGGCCAACAATTAATTTTATATTTGGA TTTTTTAAAGGCGGCCAACACAATTAATTTCTTGGTTTTTTAATTCCTTAAATTG GCTGGCGCGCGGTTTTATTTTTTTTTCCGAAAGGAAAGGGAACCTTGGGGGCCTTT TTTCTTTTTCTGAAGGCCGCTTAACCTTTCAAATTTGGAACCTCAAACCAACCTGAA GGAAAAAGGGGGTTCCCCAAAACCCCGGGAAAGGAAAGGTCCCTTTGTTAATCATC CCCTAGGGGGGGGATAAACGGCTGGAACAATAACGTTAAACTTTAAATAAATGGGCTA AAGGCTTAAATAAAATTTGGGGGTCCCCTTCTTAAACCACCCCAACCGCAAAGGGCCA CCCCCAAAGATGCCCGGAATCCTTTAAACCCCGGGGATGTTCTCAGGGCCACAG CCCAGGGAAAAGGAGGTACCATTAGGGACCCCTTCCCCCGGGCAGGGCGGACCTAA AAAACCATCCTCAAAGAAGACCTTGGCCCGGCCACCCGGGGCCCTCCCCGGCTGG GAATTAGCTCCCCAGGAGTAGGGAACCGACCAATTCGGGAAAGAAGCCCAATTTCTT GATTTCCAAAGGGACTTTCTAAGAGAGCAAATTTTGTGTTGGAGAACAGGACCAAAA AAAGGGCGCCACCCCTCTGTGGTCCACAAAGCCCTTGAAGAGTTAAAAGCCCTCTGAAG GCGGTTGCCGGGTTGGCCCCCGAAGACCCTGTTGAACCTGCCGCGGCCCCCAAATAG ATGCCNGCCCATCGGTAAAACCTGAATCCACTTGGGGGTTACTGCCCTGCGCCCCACGGA AAATGGGGATTTCGGCTTGCCACCCGAAACTGCCCAAAATTCAG </pre>
Restriction Sites:	NotI-NotI
ACCN:	NM_016592
Insert Size:	2650 bp
OTI Disclaimer:	Our molecular clone sequence data has been matched to the reference identifier above as a point of reference. Note that the complete sequence of our molecular clones may differ from the sequence published for this corresponding reference, e.g., by representing an alternative RNA splicing form or single nucleotide polymorphism (SNP).
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:	<ol style="list-style-type: none">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_016592.1 , NP_057676.1
RefSeq Size:	2566 bp
RefSeq ORF:	738 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 (4) is maternally expressed and encodes secretogranin VI (SCG6, also known as NESP55), which localizes to large secretory vesicles of endocrine cells and neurons. Its coding region is within the 5'-most exon and does not overlap the coding regions used by other transcripts; thus SCG6 has no similarity to isoforms of the G-protein alpha subunit. This variant has an antisense transcript, GNAS-AS1. CCDS Note: This CCDS ID represents the protein described in PMIDs: 20443919 and 19412439. This transcript is supported by AF106697.1. It should be noted this transcript is predicted to undergo nonsense-mediated mRNA decay (NMD). However, the protein is represented because it was detected endogenously in cow in PMIDs: 9111083 and 10729789. It is likely that the majority of transcripts representing this variant will undergo NMD, while some low level of NMD escape may allow for the expression of this protein.