

## Product datasheet for **RC402278**

### G protein alpha S (GNAS) (NM\_000516) Human Mutant ORF Clone

#### Product data:

Product Type:	Mutant ORF Clones
Product Name:	G protein alpha S (GNAS) (NM_000516) Human Mutant ORF Clone
Mutation Description:	R231H
Affected Codon#:	231
Affected NT#:	692
Nucleotide Mutation:	GNAS Mutant (R231H), Myc-DDK-tagged ORF clone of Homo sapiens GNAS complex locus (GNAS), transcript variant 1 as transfection-ready DNA
Effect:	Pseudohypoparathyroidism 1
Symbol:	GNAS
Synonyms:	AHO; C20orf45; GNAS1; GPSA; GSA; GSP; NESP; PITA3; POH; SCG6; SgVI
E. coli Selection:	Kanamycin (25 ug/mL)
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
Tag:	Myc-DDK
ACCN:	NM_000516
ORF Size:	1182 bp
Restriction Sites:	Sgfl-NotI



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**ORF Nucleotide Sequence:**

>RC402278 representing NM\_000516  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**GCGATCGCC**

ATGGGCTGCCTCGGGAACAGTAAGACCGAGGACCAGCGCAACGAGGAGAAGGCGCAGCGTGAGGCCAACA  
 AAAAGATCGAGAAGCAGCTGCAGAAGGACAAGCAGGTCTACCGGCCACGCACCGCCTGCTGCTGCTGGG  
 TGCTGGAGAATCTGGTAAAAGCACCATTTGTGAAGCAGATGAGGATCCTGCATGTTAATGGGTTTAAATGGA  
 GAGGGCGGCGAAGAGGACCCGCAGGCTGCAAGGAGCAACAGCGATGGTGAGAAGGCAACCAAAAGTGCAGG  
 ACATCAAAAACAACCTGAAAGAGGGCATTGAAACCATTGTGGCCGCCATGAGCAACCTGGTGCCCCCGT  
 GGAGCTGGCAACCCCGAGAACCAGTTCAAGTGGACTACATCCTGAGTGTGATGAACGTGCCTGACTTT  
 GACTTCCCTCCGAATTCATGAGCATGCCAAGGCTCTGTGGGAGGATGAAGGAGTGCCTGCCTGCTACG  
 AACGCTCAACGAGTACCAGCTGATTGACTGTGCCAGTACTTCTGGACAAGATCGACGTGATCAAGCA  
 GGCTGACTATGTGCCGAGCGATCAGGACCTGCTTCGCTGCCGTGCTCTGACTTCTGGAATCTTTGAGACC  
 AAGTTCAGGTGGACAAAGTCAACTTCCACATGTTTGACGTGGGTGGCCAGCGCATGAACACCGCAAGT  
 GGATCCAGTGTCTCAACGATGTGACTGCCATCATCTTCTGTTGGTGGCCAGCAGCAGCTACAACATGGTCAT  
 CCGGGAGGACAACCAGACCAACCGCCTGCAGGAGGCTCTGAACCTCTCAAGAGCATCTGGAACAACAGA  
 TGGCTGCGCACCATCTCTGTGATCCTGTTCTCAACAAGCAAGATCTGCTCGCTGAGAAAGTCTTTGCTG  
 GGAAATCGAAGATTGAGGACTACTTCCAGAATTTGCTCGCTACACTACTCTGAGGATGCTACTCCCGA  
 GCCCGGAGAGGACCCACGCGTGACCCGGGCCAAGTACTTCATTCGAGATGAGTTTCTGAGGATCAGCACT  
 GCCAGTGGAGATGGGCGTCACTACTGCTACCCTCATTTACCTGCGCTGTGGACTGAGAACATCCGCC  
 GTGTGTTCAACGACTGCCGTGACATCATTACGCGCATGCACCTTCGTCACTACGAGCTGCTC

AG**GCGACCG**ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCC  
 TGGATTACAAGGATGACGACGA TAAGGTTTAA

**Protein Sequence:**

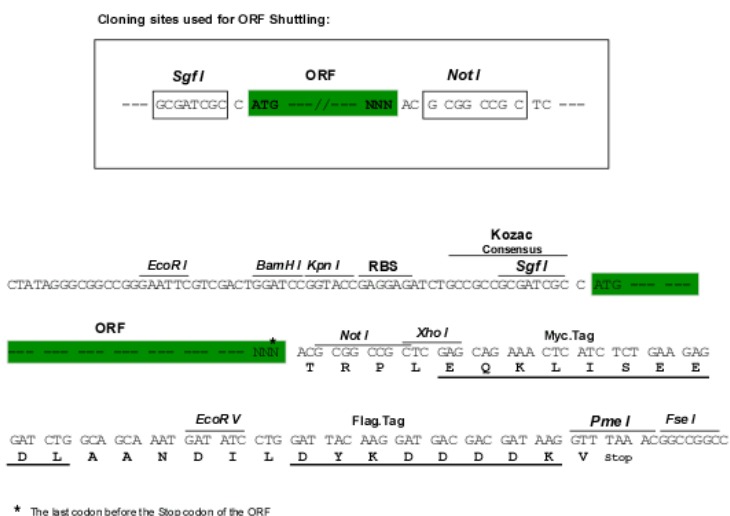
>RC402278 representing NM\_000516  
 Red=Cloning site Green=Tags(s)

MGCLGNSKTEDQRNEEKAQREANKKIEKQLQKDKQVYRATHRLLLLGAGESGKSTIVKQMRILHVNGFNG  
 EGGEEDPQAARSNSDGEKATKVQDIKNNLKEAIETIVAAMSNLVPPVELANPENQFRVDYILSVMNVPDF  
 DFPPEFYEHAKALWEDEGVRACYERSNEYQLIDCAQYFLDKIDVIKQADYVPSDQDLLRCRVLTSGIFET  
 KFQVDKVNFMFDVGGQRDEHRKWIQCFNDVTAIIFVVASSSYNMVIREDNQTNRLQEALNLFKSIWNNR  
 WLRTISVILFLNKQDLLAEKVLGKSKIETYFPEFARYTTPEDATPEPGEPRVTRAKYFIRDEFRLIST  
 ASGDGRHYCYPHFTCAVDTENIRRVFNDCRDI IQRMHLRQYELL

SGP**TRRRLEQKLI**SEEDLAANDILDYKDDDDKV

**Restriction Sites:**

Sgfl-NotI

**Cloning Scheme:**

**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](mailto: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](#)

**OTI Annotation:**

This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.

**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).

**RefSeq:**

[NP\\_000507](#)

**RefSeq Size:**

1182 bp

**RefSeq ORF:**

1185 bp

**Locus ID:**

2778

**Cytogenetics:**

20q13.32

**Domains:**

G-alpha

**Protein Families:**

Druggable Genome, Secreted Protein

<b>Protein Pathways:</b>	Calcium signaling pathway, Dilated cardiomyopathy, Gap junction, GnRH signaling pathway, Long-term depression, Melanogenesis, Taste transduction, Vascular smooth muscle contraction, Vibrio cholerae infection
<b>MW:</b>	43.3 kDa
<b>Gene Summary:</b>	<p>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]</p>