GNAS cDNA Clone – GNAS Complex Locus (Human)

PRODUCT OVERVIEW

Product Name	GNAS, cDNA Clone
Full Product Name	GNAS cDNA Clone
Product Gene Name	GNAS cdna clone
Sequence	atgggctgcc tcgggaacag taagaccgag gaccagcgca acgaggagaa ggcgcagcgt gaggccaaca aaaagatcga gaagcagctg cagaaggaca agcaggtcta ccgggccacg caccgcctgc tgctgctggg tgctggagaa tctggtaaaa gcaccattgt gaagcagatg aggatcctgc atgttaatgg gtttaatgga gagggcggcg aagaggaccc gcaggctgca aggagcaaca gcgatggtga gaaggcaacc aaagtgcagg acatcaaaaa caacctgaaa gaggcgattg aaaccattgt ggccgccatg agcaacctgg tgccccccgt ggagctggcc aaccccgaga accagttcag agtggactac attctgagtg tgatgaacgt gcctgacttt gacttccctc ccgaattcta tgagcatgcc aaggctctgt gggaggatga aggagtgcgt gcctgctacg aacgctccaa cgagtaccag ctgattgact gtgcccagta cttcctggac aagatcgacg tgatcaagca ggctgactat gtgccgagcg atcaggacct gcttcgctgc cgtgtcctga cttctggaat ctttgagacc aagttccagg tggacaaagt caacttccac atgtttgacg tgggtggcca gcgcgatgaa cgccgcaagt ggatccagtg cttcaacgat gtgactgcca tcatcttcgt ggtggccagc agcagctaca acatggtcat ccgggaggac aaccagacca accgcctgca ggaggctctg aacctcttca agagcatctg gaacaacaga tggctgcgca ccatctctgt gatcctgttc ctcaacaagc aagatctgct cgctgagaaa gtccttgctg ggaaatcgaa gattgaggac tactttccag aatttgctcg ctacactact cctgaggatg ctactcccga gcccggagag gacccacgcg tgacccgggc caagtacttc attcgagatg agtttctgag gatcagcact gccagtggag atgggcgtca ctactgctac cctcatttca cctgcgctgt ggacactgag aacatccgcc gtgtgttcaa cgactgccgt gacatcattc agcgcatgca ccttcgtcag tacgagctgc tctaa
Molecular Weight	111,025 Da
OMIM	102200
Vector	pENTR223.1
Clone Sequence Report	Provided with product shipment
ISO Certification	Manufactured in an ISO 9001:2015 Certified Laboratory.
Related Product Information for GNAS cdna clone	MBS1272083 is a cDNA clone targeting GNAS.
Other Notes	Small volumes of GNAS cdna clone 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 #	33877079
NCBI GeneID	2778
NCBI Accession #	BC002722
UniProt Secondary Accession #	P04895; Q12927; Q14433; Q32P26; Q5JWD2; Q5JWD4; Q5JWD5; Q6NR75; Q6NXS0; A6NI00; E1P5G5
UniProt Related Accession #	P63092; O95467; P84996; Q5JWF2
NCBI Official Full Name	Homo sapiens GNAS complex locus, mRNA
NCBI Official Synonym Full Names	GNAS complex locus
NCBI Official Symbol	GNAS
NCBI Official Synonym Symbols	AHO; GSA; GSP; POH; GPSA; NESP; SCG6; SgVI; GNAS1; C20orf45

UniProt Protein Name	Guanine nucleotide-binding protein G(s) subunit alpha isoforms short
UniProt Synonym Protein Names	Adenylate cyclase-stimulating G alpha protein
Protein Family	Neuroendocrine secretory protein
UniProt Gene Name	GNAS
UniProt Synonym Gene Names	GNAS1; GSP
UniProt Entry Name	GNAS2_HUMAN
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, 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 reponses. 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 osseus heteroplasia, polyostotic fibrous dysplasia of bone, and some pituitary tumors. [provided by RefSeq, Aug 2012]
UniProt Comments for GNAS	G-alpha(s): 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; G protein, heterotrimeric; G protein, heterotrimeric alpha G(s); Membrane protein, peripheral; Oncoprotein; Vesicle Chromosomal Location of Human Ortholog: 20q13.3 Cellular Component: cytosol; membrane Molecular Function: beta-2 adrenergic receptor binding; corticotropin-releasing hormone receptor 1 binding; D1 dopamine receptor binding; insulin-like growth factor receptor binding; ionotropic glutamate receptor binding; mu-type opioid receptor binding; protein binding Biological Process: cognition; developmental growth; dopamine receptor, adenylate cyclase activating pathway; G-protein signaling, adenylate cyclase activating pathway; sensory perception of chemical stimulus Disease: Acth-independent Macronodular Adrenal Hyperplasia; Mccune-albright Syndrome; Osseous Heteroplasia, Progressive; Pituitary Adenoma, Growth Hormone-secreting; Pseudohypoparathyroidism, Type Ia; Pseudohypoparathyroidism, Type Ib; Pseudohypoparathyroidism, Type Ic; Pseudopseudohypoparathyroidism
Research Articles on GNAS	**1.** GNAS mutations are highly specific for fibrous dysplasia and occur rarely, if ever, in parosteal and other low-grade osteosarcomas.
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