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Product datasheet for MC213158

Gnat3 (NM_001081143) Mouse Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Gnat3 (NM_001081143) Mouse Untagged Clone
Tag:	Tag Free
Symbol:	Gnat3
Synonyms:	Ggust; Gtn
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)

Fully Sequenced ORF:

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>MC213158 representing NM_001081143
Red=Cloning site Blue=ORF Orange=Stop codon

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCCGCGATCGCC

ATGGGAAGTGGAATTAGTTCAGAGAGCAAGGAATCAGCCAGAAGGTCCAAAGAACTGGAGAAGAAGCTTC
AGGAGGATGCTGAGCGGGATGCAAGAACTGTGAAGTTACTGCTACTAGGAGCAGGTGAATCTGGGAAAAG
CACTATTGTTAAACAAATGAAGATCATCCATAAGAATGGTTACAGCAAACAAGAATGCATGGAGTTTAAA
GCAGTGATTTACAGTAACACATTGCAGTCCATCCTAGCTATTGTGAAAGCCATGGCTACACTGGGGATTG
ATTATGTCAATCCTAGGAGCCGAGAGGACCAAGAACAACTTCACTCAATGGCAAATACACTAGAAGATGG
TGATATGACTCCACAGCTGGCTGAAATCATTAAACGACTGTGGGGGGATCCAGGAATCCAAGCCTGCTTT
GAAAGGGCATCTGAATACCAGCTCAATGACTCTGCAGCTTACTACCTTAATGACTTAGACAGACTCACAG
CCCCTGGGTACGTGCCAAATGAGCAAGATGTTCTACATTCCCGGGTGAAAACCACTGGTATCATTGAAAC
TCAATTCTCCTTTAAAGACTTGAACTTCAGAATGTTTGATGTAGGTGGCCAGAGATCAGAGAGAAAAAAA
TGGATCCACTGCTTTGAAGGAGTCACCTGCATTATATTTTGCGCAGCGCTAAGTGCCTATGACATGGTGC
TTGTAGAAGATGAGGAGGTGAACAGAATGCATGAAAGTCTTCACCTGTTTAACAGCATATGTAATCATAA
GTACTTCGCAACCACCTCCATTGTTCTGTTTCTTAACAAGAAAGATCTCTTCCAGGAGAAAGTGGCTAAG
GTGCACCTCAGCATTTGCTTTCCAGAATATACTGGACCAAACACATTTGAAGATGCAGGGAACTACATCA
AGAACCAGTTTCTAGACCTGAACTTAAAAAAAGAAGATAAGGAAATCTATTCTCACATGACCTGTGCTAC
TGACACACAAAATGTCAAATTTGTGTTTGATGCAGTGACAGATATAATAATAAAAGAGAACCTCAAAGAC
TGTGGGCTCTTCTGA

ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
ACAAGGATGACGACGATAAGGTTTAA
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Restriction Sites: SgfI-MluI

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ACCN:	NM_001081143
Insert Size:	1065 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_001081143.1, NP_001074612.1
RefSeq Size:	1174 bp
RefSeq ORF:	1065 bp
Locus ID:	242851
UniProt ID:	Q3V3I2
Cytogenetics:	5 A3

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Gene Summary: Guanine nucleotide-binding protein (G protein) alpha subunit playing a prominent role in bitter and sweet taste transduction as well as in umami (monosodium glutamate, monopotassium glutamate, and inosine monophosphate) taste transduction. Transduction by this alpha subunit involves coupling of specific cell-surface receptors with a cGMP-phosphodiesterase; Activation of phosphodiesterase lowers intracellular levels of cAMP and cGMP which may open a cyclic nucleotide-suppressible cation channel leading to influx of calcium, ultimately leading to release of neurotransmitter. Indeed, denatonium and strychnine induce transient reduction in cAMP and cGMP in taste tissue, whereas this decrease is inhibited by GNAT3 antibody. Gustducin heterotrimer transduces response to bitter and sweet compounds via regulation of phosphodiesterase for alpha subunit, as well as via activation of phospholipase C for beta and gamma subunits, with ultimate increase inositol trisphosphate and increase of intracellular Calcium. GNAT3 can functionally couple to taste receptors to transmit intracellular signal: receptor heterodimer TAS1R2/TAS1R3 senses sweetness and TAS1R1/TAS1R3 transduces umami taste, whereas the T2R family GPCRs act as bitter sensors. Functions also as lumenal sugar sensors in the gut to control the expression of the Na+-glucose transporter SGLT1 in response to dietaty sugar, as well as the secretion of Glucagon-like peptide-1, GLP-1 and glucose-dependent insulinotropic polypeptide, GIP. Thus, may modulate the gut capacity to absorb sugars, with implications in malabsorption syndromes and diet-related disorders including diabetes and obesity.[UniProtKB/Swiss-Prot Function]

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