

## Product datasheet for **MG223870**

### Gnat3 (NM\_001081143) Mouse Tagged ORF Clone

#### Product data:

**Product Type:** Expression Plasmids  
**Product Name:** Gnat3 (NM\_001081143) Mouse Tagged ORF Clone  
**Tag:** TurboGFP  
**Symbol:** Gnat3  
**Synonyms:** Ggust; Gtn  
**Mammalian Cell Selection:** Neomycin  
**Vector:** pCMV6-AC-GFP (PS100010)  
**E. coli Selection:** Ampicillin (100 ug/mL)  
**ORF Nucleotide Sequence:** >MG223870 representing NM\_001081143  
Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
GCC**CGATCGCC**

ATGGGAAGTGAATTAGTTCAGAGAGCAAGGAATCAGCCAGAAGGTCCAAGAAGCTGGAGAAGAAGCTTC  
AGGAGGATGCTGAGCGGGATGCAAGAAGTGTGAAGTTACTGCTACTAGGAGCAGGTGAATCTGGGAAAAG  
CACTATTGTTAAACAAATGAAGATCATCCATAAGAATGGTTACAGCAAACAAGAATGCATGGAGTTTAA  
GCAGTGATTTACAGTAACACATTGCAGTCCATCCTAGCTATTGTGAAAGCCATGGCTACACTGGGGATTG  
ATTATGTCAATCCTAGGAGCCGAGAGGACCAAGAACAACCTTCACTCAATGGCAAATACACTAGAAGATGG  
TGATATGACTCCACAGCTGGCTGAAATCATTAAACGACTGTGGGGGATCCAGGAATCCAAGCCTGCTTT  
GAAAGGGCATCTGAATACCAGCTCAATGACTCTGCAGCTTACTACCTTAATGACTTAGACAGACTCACAG  
CCCCTGGGTACGTGCCAAATGAGCAAGATGTTCTACATCCCAGGTGAAAACCACTGGTATCATTGAAAC  
TCAATTCTCCTTTAAAGACTTGAAGTTCAGAAATGTTTGTAGTGTAGGTGGCCAGAGATCAGAGAGAAAAAA  
TGGATCCACTGCTTTGAAGGAGTCACCTGCATTATTTTTGCGCAGCGCTAAGTGCTATGACATGGTGC  
TTGTAGAAGATGAGGAGGTGAACAGAATGCATGAAAGTCTTCACTGTTTAAACAGCATATGTAATCATAA  
GTACTTCGCAACCACTCCATTGTTCTGTTTCTTAAACAAGAAAGATCTCTCCAGGAGAAAGTGGCTAAG  
GTGCACCTCAGCATTGCTTTCCAGAATACTGGACCAACACATTTGAAGATGCAGGGAACATCA  
AGAACCAGTTTCTAGACCTGAACTTAAAAAAGAAGATAAGGAAATCTATTCTCACATGACCTGTGCTAC  
TGACACACAAAATGTCAAATTTGTGTTTGTAGTGCAGTGACAGATATAATAATAAAAGAGAACCTCAAAGAC  
TGTGGGCTCTTC

**ACGCGT**ACGCGGCCGCTCGAG - GFP Tag - GTTTAA



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MGSGISSSESKESARRSKELEKLLQEDAERDARTVKLLLLGAGESGKSTIVKQMKIIHKNKGYSKQECMEFK  
 AVIYSNTLQSI LAIVKAMATLGIDYVNP RSREDQEQ LHS MANTLEDGDMTPQLAEI IKRLWGD PGIQACF  
 ERA SEYQLNDSAAYYLNDLDR L TAPGYVPNEQDVLHSRVKTTGI IETQF SFDLNF R MFDVGGQR SERKK  
 WIHCFEGVTCIIFCAALSAYDMVLVEDEEVNRMHESLHLFNSICNHKYFATT SIVLFLNKKDLFQEKVAK  
 VHLSICFPEYTGPNTFEDAGNYIKNQFLDLNLKKEDKEIYSHMTCATDTQNVKVFVDAVTDII IKENLKD  
 CGLF

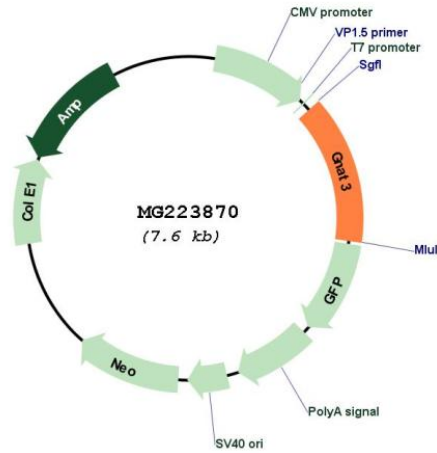
TRTRPLE - GFP Tag - V

**Restriction Sites:** SgfI-MluI

**Cloning Scheme:**



**Plasmid Map:**



**ACCN:** NM\_001081143

<b>ORF Size:</b>	1062 bp
<b>OTI Disclaimer:</b>	<p>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 <a href="mailto:custsupport@origene.com">custsupport@origene.com</a> or by calling 301.340.3188 option 3 for pricing and delivery.</p> <p>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. <a href="#">More info</a></p>
<b>OTI Annotation:</b>	This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.
<b>Components:</b>	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).
<b>Reconstitution Method:</b>	<ol style="list-style-type: none"> <li>1. Centrifuge at 5,000xg for 5min.</li> <li>2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.</li> <li>3. Close the tube and incubate for 10 minutes at room temperature.</li> <li>4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.</li> <li>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.</li> </ol>
<b>RefSeq:</b>	<a href="#">NM_001081143.1</a> , <a href="#">NP_001074612.1</a>
<b>RefSeq Size:</b>	1174 bp
<b>RefSeq ORF:</b>	1065 bp
<b>Locus ID:</b>	242851
<b>UniProt ID:</b>	<a href="#">Q3V3I2</a>
<b>Cytogenetics:</b>	5 A3

**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<sup>+</sup>-glucose transporter SGLT1 in response to dietary 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]