

## Product datasheet for **RG237337**

### G protein alpha 12 (GNA12) (NM\_001282440) Human Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	G protein alpha 12 (GNA12) (NM_001282440) Human Tagged ORF Clone
Tag:	TurboGFP
Symbol:	G protein alpha 12
Synonyms:	gep; NNX3; RMP
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)
ORF Nucleotide Sequence:	>RG237337 representing NM_001282440. Blue=ORF Red=Cloning site Green=Tag(s)

```
GCTCGTTT TAGTGAACCGTCAGAATTTTGT AATACGACTCACTATAGGGCGCCGGGAATTCGTCGACTG
GATCCGGTACCGAGGAGATCTGCCGCC GCGATCGCC
ATGGCTCCACGAGCAGGGCTCGGAGCTGGCCCTCTCCTGCTTCGGAGCCGCGCTGACTGGGTGTGTGGC
GGATGGGAGGCCGCCCTGAGTGTCTCCTCCCTTTTGTACAGCCTGGGTGGAAAGGACGGGCCTGGTG
CACTTCTGCGGGAGGGAGGACATGGGGCCTGCTCCCTCTGGCGCTCCTCCACCCGGGCAGCGTGGTT
TCTTTCCAAATGATTTATCCTCTCATCGTCTGCCGCTGTGCTTCATGGCATTGGGGTCTTATCCGG
AAGGGATTGTCCTTTTGGGGGAGTCGGTGAAGTACTTCTGGACAACCTGGACCGGATCGGCCAG
CTGAATTACTTTCTAGTAAGCAAGATATCCTGTGGCTAGGAAAGCCACCAAGGAATTGTGGAGCAT
GACTTCGTTATTAAGAAGATCCCCTTAAGATGGTGGATGTGGCGGCCAGCGGTCCCAGCGCCAGAAG
TGGTTCAGTGCTTCGACGGGATCACGTCCATCCTGTTTCCATGGTCTCCTCCAGCGAGTACGACCAGGTC
CTCATGGAGGACAGGCGCACCAACCGGCTGGTGGAGTCCATGAACATCTTCGAGACCATCGTCAACAAC
AAGCTCTTCTCAACGTCTCCATCATTCTTCTCAACAAGATGGACCTCCTGGTGGAGAAGGTGAAG
ACCGTGAGCATCAAGAAGCACTTCCCGACTTCAGGGGCGACCCGCACAGGCTGGAGGACGTCCAGCGC
TACCTGGTCCAGTGCTTCGACAGGAAGAGACGGAACCGCAGCAAGCCACTTCCACCACCTCACCACC
GCCATCGACACCGAGAACGTCCGCTTCGTGTTCCATGCTGTGAAAGACACCATCCTGCAGGAGAACCTG
AAGGACATCATGCTGCAG
ACGCGTACGCGGCCGCTCGAG - GFP Tag - GTTTAAAC
```



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**Protein Sequence:** >Peptide sequence encoded by RG237337  
 Blue=ORF Red=Cloning site Green=Tag(s)

MAPRAGLGAGPLLLRSRADWVCGGWEAALSAPPPFCTAWVERTGLVHFLREGGHGACFPLALLHPGSVV  
 SFQMIYPLIVLPLCASWHWGLIRKGIWLVFWGVSVKYFLDNLDRIGQLNYFSPKQDILLARKATKGIVEH  
 DFVIKKIPFKMVDVGGQRSQRQKWFQCFDGITSLFMVSSSEYDQVLMEDRRTNRLVESMNIFFETIVNN  
 KLFFNVSIIILFLNKMDLLVEKVKTVSIKKHFPDFRGPDRHLEDVQRYLVQCFDRKRRNRSKPLFHHFTT  
 AIDTENVRVVFHAVKDTILQENLKDIMLQ  
 TRTRPLEMESDESGLPAMEIECRITGTLNGVEFELVGGEGTPEQGRMTNKMSTKGALTFSPYLLSHV  
 MGYGFYHFGTYPSTYENPFLHAINNGGYNTRIEKYEDGGVLHVSFSYRYEAGRVIGDFKVMGTGFPEP  
 SVIFTDKIIRSNAIVEHLHPMGDNDLDGSFTRTFSLRDGGYSSVVDSHMHFKSAIHPSILQNGGPMFA  
 FRRVEEDHSNTELGIVEYQHAFKTPDADAGEERV

**Restriction Sites:** SgfI-MluI

**Cloning Scheme:**



**ACCN:** NM\_001282440

**ORF Size:** 915 bp

**OTI Disclaimer:** 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).

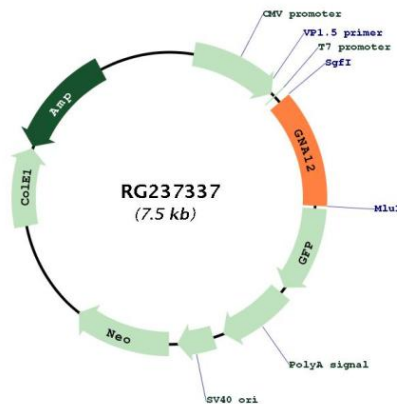
**RefSeq:** [NM\\_001282440.1](#), [NP\\_001269369.1](#)

**RefSeq Size:** 4246 bp

**RefSeq ORF:** 918 bp

<b>Locus ID:</b>	2768
<b>Cytogenetics:</b>	7p22.3-p22.2
<b>Protein Families:</b>	Druggable Genome
<b>Protein Pathways:</b>	Long-term depression, MAPK signaling pathway, Regulation of actin cytoskeleton, Vascular smooth muscle contraction
<b>MW:</b>	35.6 kDa
<b>Gene Summary:</b>	Guanine nucleotide-binding proteins (G proteins) are involved as modulators or transducers in various transmembrane signaling systems (PubMed:22609986, PubMed:15525651, PubMed:15240885, PubMed:17565996, PubMed:12515866, PubMed:16787920, PubMed:16705036, PubMed:23762476, PubMed:27084452). Activates effector molecule RhoA by binding and activating RhoGEFs (ARHGEF12/LARG) (PubMed:15240885, PubMed:12515866, PubMed:16202387). GNA12-dependent Rho signaling subsequently regulates transcription factor AP-1 (activating protein-1) (By similarity). GNA12-dependent Rho signaling also regulates protein phosphatase 2A activation causing dephosphorylation of its target proteins (PubMed:15525651, PubMed:17565996). Promotes tumor cell invasion and metastasis by activating RhoA/ROCK signaling pathway and up-regulating proinflammatory cytokine production (PubMed:23762476, PubMed:16787920, PubMed:16705036, PubMed:27084452). Inhibits CDH1-mediated cell adhesion in process independent from Rho activation (PubMed:11976333, PubMed:16787920). Together with NAPA promotes CDH5 localization to plasma membrane (PubMed:15980433). May play a role in the control of cell migration through the TOR signaling cascade (PubMed:22609986).[UniProtKB/Swiss-Prot Function]

### Product images:



Circular map for RG237337