

## Product datasheet for **TG312729**

### G protein alpha 12 (GNA12) Human shRNA Plasmid Kit (Locus ID 2768)

#### Product data:

|                           |   |
|---------------------------|---|
| Product Type:             | shRNA Plasmids  |
| Product Name:             | G protein alpha 12 (GNA12) Human shRNA Plasmid Kit (Locus ID 2768)  |
| Locus ID:                 | 2768  |
| Synonyms:                 | gep; NNX3; RMP  |
| Vector:                   | pGFP-V-RS (TR30007)   |
| E. coli Selection:        | Kanamycin   |
| Mammalian Cell Selection: | Puromycin   |
| Format:                   | Retroviral plasmids   |
| Components:               | GNA12 - Human, 4 unique 29mer shRNA constructs in retroviral GFP vector(Gene ID = 2768).<br>5µg purified plasmid DNA per construct<br>29-mer scrambled shRNA cassette in pGFP-V-RS Vector, TR30013, included for free.  |
| RefSeq:                   | <a href="#">NM_001282440</a> , <a href="#">NM_001282441</a> , <a href="#">NM_001293092</a> , <a href="#">NM_007353</a> , <a href="#">NM_007353.2</a> ,<br><a href="#">NM_001282440.1</a> , <a href="#">NM_001293092.1</a> , <a href="#">BC111464</a> , <a href="#">BC111464.1</a> , <a href="#">BC007400</a> , <a href="#">BC009457</a> , <a href="#">BC063396</a> ,<br><a href="#">BC087537</a> , <a href="#">BM557907</a> , <a href="#">NM_007353.3</a> , <a href="#">NM_001293092.2</a> , <a href="#">NM_001282441.2</a> |
| UniProt ID:               | <a href="#">Q03113</a>  |



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**Summary:** 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]

**shRNA Design:** These shRNA constructs were designed against multiple splice variants at this gene locus. To be certain that your variant of interest is targeted, please contact [techsupport@origene.com](mailto:techsupport@origene.com). If you need a special design or shRNA sequence, please utilize our [custom shRNA service](#).

**Performance Guaranteed:** OriGene guarantees that the sequences in the shRNA expression cassettes are verified to correspond to the target gene with 100% identity. One of the four constructs at minimum are guaranteed to produce 70% or more gene expression knock-down provided a minimum transfection efficiency of 80% is achieved. Western Blot data is recommended over qPCR to evaluate the silencing effect of the shRNA constructs 72 hrs post transfection. To properly assess knockdown, the gene expression level from the included scramble control vector must be used in comparison with the target-specific shRNA transfected samples.

For non-conforming shRNA, requests for replacement product must be made within ninety (90) days from the date of delivery of the shRNA kit. To arrange for a free replacement with newly designed constructs, please contact Technical Services at [techsupport@origene.com](mailto:techsupport@origene.com). Please provide your data indicating the transfection efficiency and measurement of gene expression knockdown compared to the scrambled shRNA control (Western Blot data preferred).