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# Product datasheet for TG507022

## Ffar2 Mouse shRNA Plasmid (Locus ID 233079)

### Product data:

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|---|---|
| **Product Type:** | shRNA Plasmids |
| **Product Name:** | Ffar2 Mouse shRNA Plasmid (Locus ID 233079) |
| **Locus ID:** | 233079 |
| **Synonyms:** | GPCR43; Gpr43 |
| **Vector:** | pGFP-V-RS (TR30007) |
| **E. coli Selection:** | Kanamycin |
| **Mammalian Cell Selection:** | Puromycin |
| **Format:** | Retroviral plasmids |
| **Components:** | Ffar2 - Mouse, 4 unique 29mer shRNA constructs in retroviral GFP vector(Gene ID = 233079).<br>5µg purified plasmid DNA per construct<br>29-mer scrambled shRNA cassette in pGFP-V-RS Vector, TR30013, included for free. |
| **RefSeq:** | BC019570, NM_001168509, NM_001168510, NM_001168511, NM_001168512, NM_146187, NM_146187.1, NM_146187.2, NM_146187.3, NM_146187.4, NM_001168510.1, NM_001168512.1, NM_001168511.1, NM_001168509.1 |
| **UniProt ID:** | Q8VCK6 |

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**Summary:**

G protein-coupled receptor that is activated by a major product of dietary fiber digestion, the short chain fatty acids (SCFAs), and that plays a role in the regulation of whole-body energy homeostasis and in intestinal immunity. In omnivorous mammals, the short chain fatty acids acetate, propionate and butyrate are produced primarily by the gut microbiome that metabolizes dietary fibers. SCFAs serve as a source of energy but also act as signaling molecules. That G protein-coupled receptor is probably coupled to the pertussis toxin-sensitive, G(i/o)-alpha family of G proteins but also to the Gq family (PubMed:23589301). Its activation results in the formation of inositol 1,4,5-trisphosphate, the mobilization of intracellular calcium, the phosphorylation of the MAPK3/ERK1 and MAPK1/ERK2 kinases and the inhibition of intracellular cAMP accumulation. May play a role in glucose homeostasis by regulating the secretion of GLP-1, in response to short-chain fatty acids accumulating in the intestine (PubMed:22190648, PubMed:23589301). May also regulate the production of LEP/Leptin, a hormone acting on the central nervous system to inhibit food intake (PubMed:20399779). Finally, may also regulate whole-body energy homeostasis through adipogenesis regulating both differentiation and lipid storage of adipocytes (PubMed:16123168, PubMed:23589301). In parallel to its role in energy homeostasis, may also mediate the activation of the inflammatory and immune responses by SCFA in the intestine, regulating the rapid production of chemokines and cytokines (PubMed:23665276). May also play a role in the resolution of the inflammatory response and control chemotaxis in neutrophils (PubMed:19917676, PubMed:19865172). In addition to SCFAs, may also be activated by the extracellular lectin FCN1 in a process leading to activation of monocytes and inducing the secretion of interleukin-8/IL-8 in response to the presence of microbes. [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. 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. Please provide your data indicating the transfection efficiency and measurement of gene expression knockdown compared to the scrambled shRNA control (Western Blot data preferred).