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Product datasheet for RR207289

Ffar3 (NM_001108912) Rat Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Ffar3 (NM_001108912) Rat Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Ffar3
Synonyms:	Gpr41
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Cell Selection:	Neomycin
ORF Nucleotide Sequence:	>RR207289 representing NM_001108912 Red=Cloning site Blue=ORF Green=Tags(s) TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC GCCGCGATCGCC ATGGACACAAGCTTCTTTCCCGGCAACCACTGGCTTTTCTTTTCAGTGGATCTGTTGGTGTTCCTCGTGG GACTACCCCTCAACGTGATGGCCCTGGTGGTCTTCGTGAACAAGCTGCGTCGCCGCCCGGTGGCCGTGGA CTTACTTTTGCTTAACCTGACCATTTCGGACCTGCTTCTGCTCCTCTTCCTGCCATTCCGTATAGTGGAG GCGGCCTGTGGCATGAAATGGATTCTGCCCTTCATCTTCTGCCCCCTTTCTGGCTTCCTTTTCTTCACCA CCATCTACCTCACCTCCCTCTTCCTGATGACGGTGAGCATAGAACGTTTTCTGAGCGTAGCCTACCCACT GTGGTACAAAACCCGGCCCCGGCTGGCCCAGGCTGGTCTGGTCAGTGGCATCTGTTGGTTCTTGGCATCA GCTCACTGTAGTGTGATTTATGTCACTGAATACTGGGGAAATGCAACCTACAGCCAGGGGACCAACGGAA CCTGCTACCTGGAATTCCGGGAGGACCAGCTGGCCATCCTCCTCCCCGTGCGACTGGAAATGGCTGTGGT CCTTTTCATGGTGCCCCTGTGTATTACCAGTTACTGCTACAGTCGCCTGGTGTGGATTCTGAGCCAGGGA GCCAGCCGGCGCAGGCGCAAGAGAGTGATGGGGCTTCTTGTAGCCACGTTGCTCATCTTCTTTGTCTGCT TCGGCCCCTACAATATGTCCCACGTGGTGGGCTACGTGCGCGGTGAGAGTCCGACCTGGCGGAGCTACGT GCTTCTCCTCAGCACCCTCAACTCTTGTATTGACCCTCTGGTTTTCTACTTTTCATCCTCCAAGTTCCAA GCCGACTTTCATCAGCTCCTGTCTAGGCTGATCAGAGCTTGTGTGCCTTGGACTCAGGAAGTCAGCTTGG AACTGAAGGTAAAGAACGGAGAAGAGCCATCCAAGGAATGTCCGAGC ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT ACAAGGATGACGACGATAAGGTTTAA

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Protein Sequence:

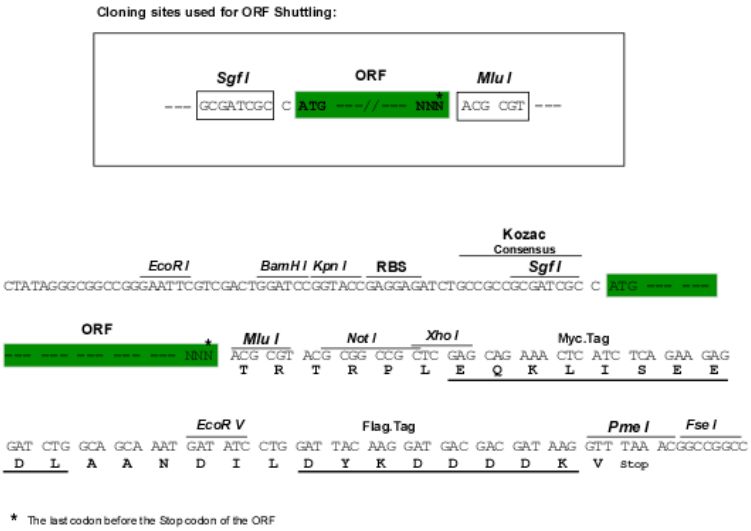
>RR207289 representing NM_001108912
Red=Cloning site Green=Tags(s)

MDTSFFPGNHWLFFSVDLLVFLVGLPLNVMALVVFVNKLRRRPVAVDLLLLNLTISDLLLLLFLPFRIVE
AACGMKWILPFIFCPLSGFLFFTTIYLTSLFLMTVSIERFLSVAYPLWYKTRPRLAQAGLVSGICWFLAS
AHCSVIYVTEYWGNATYSQGTNGTCYLEFREDQLAILLPVRLEMAVVLFMVPLCITSYCYSRLVWILSQG
ASRRRRKRVMGLLVATLLIFFVCFGPYNMSHVVGYVRGESPTWRSYVLLLSTLNSCIDPLVFYFSSSKFQ
ADFHQLLSRLIRACVPWTQEVSLELKVKNGEEPSKECPS

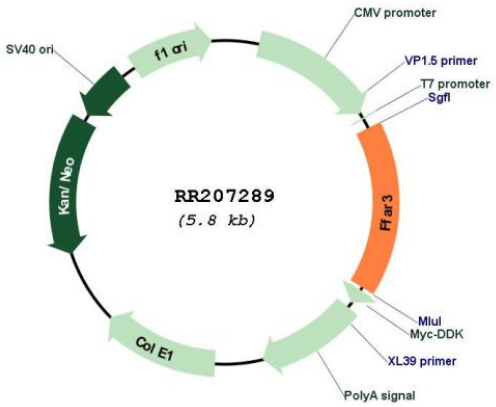
TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Restriction Sites: SgfI-MluI

Cloning Scheme:



Plasmid Map:



ACCN: NM_001108912

ORF Size: 957 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
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).
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_001108912.1, NP_001102382.1
RefSeq Size:	1113 bp
RefSeq ORF:	960 bp
Locus ID:	365228
UniProt ID:	B2GV46
Cytogenetics:	1q21
MW:	36.5 kDa

Gene 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. 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. Activated by SCFAs and by beta-hydroxybutyrate, a ketone body produced by the liver upon starvation, it inhibits N-type calcium channels and modulates the activity of sympathetic neurons through a signaling cascade involving the beta and gamma subunits of its coupled G protein, phospholipase C and MAP kinases (PubMed:24305827). Thereby, it may regulate energy expenditure through the control of the sympathetic nervous system that controls for instance heart rate. Upon activation by SCFAs accumulating in the intestine, it may also signal to the brain via neural circuits which in turn would regulate intestinal gluconeogenesis (PubMed:24412651). May also control the production of hormones involved in whole-body energy homeostasis. May for instance, regulate blood pressure through renin secretion. May also regulate secretion of the PYY peptide by enteroendocrine cells and control gut motility, intestinal transit rate, and the harvesting of energy from SCFAs produced by gut microbiota. May also indirectly regulate the production of LEP/Leptin, a hormone acting on the CNS to inhibit food intake, in response to the presence of short-chain fatty acids in the intestine. Finally, may also play a role in glucose homeostasis. Besides its role in energy homeostasis, may play a role in intestinal immunity. May mediate the activation of the inflammatory and immune response by SCFAs in the gut, regulating the rapid production of chemokines and cytokines by intestinal epithelial cells.[UniProtKB/Swiss-Prot Function]