

## Product datasheet for RC207772

### FFAR3 (NM\_005304) Human Tagged ORF Clone

#### Product data:

Product Type: Expression Plasmids  
 Product Name: FFAR3 (NM\_005304) Human Tagged ORF Clone  
 Tag: Myc-DDK  
 Symbol: FFAR3  
 Synonyms: FFA3R; GPR41; GPR42  
 Mammalian Cell Selection: Neomycin  
 Vector: pCMV6-Entry (PS100001)  
 E. coli Selection: Kanamycin (25 ug/mL)  
 ORF Nucleotide Sequence: >RC207772 ORF sequence  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGATCGCC**

ATGGATACAGGCCCGACCAGTCTACTTCTCCGGCAATCACTGGTTCGTCTTCTCGGTGTACCTTCTCA  
 CTTTCTGGTGGGGCTCCCCCTCAACCTGCTGGCCCTGGTGGTCTTCGTGGGCAAGCTGCAGCGCCGCC  
 GGTGGCCGTGGACGTGCTCCTGCTCAACCTGACCGCTCGGACCTGCTCCTGCTGCTGTTCTGCCTTC  
 CGCATGGTGGAGGAGCCAATGGCATGCACTGGCCCTGCCCTTCATCCTCTGCCACTCTCTGGATTCA  
 TCTTCTCACCACCATCTATCTCACCGCCCTTCTCCTGGCAGCTGTGAGCATTGAACGCTTCTGAGTGT  
 GGCCACCCACTGTGGTACAAGACCCGGCCGAGGCTGGGGCAGGCAGGTCTGGTGAAGTGTGCCTGCTGG  
 CTGTTGGCCTCTGCTCACTGCAGCGTGGTCTACGTATAGAAATCTCAGGGGACATCTCCACAGCCAGG  
 GCACCAATGGGACCTGCTACCTGGAGTTCGGGAAGGACCAGCTAGCCATCCTCCTGCCCGTGGCGGTGGA  
 GATGGCTGTGGTCTCTTGTGGTCCCGCTGATCATCACCAGCTACTGCTACAGCCCGCTGGTGTGGATC  
 CTCGGCAGAGGGGGCAGCCACCGCCGGCAGAGGAGGGTGGCGGGCTGTTGGCGGCCACGCTGCTCAACT  
 TCCTTGTCTGCTTGGGCCCTACAACGTGTCCCATGTCTGGGCTATATCTGCGGTGAAAGCCCGCGTG  
 GAGGATCTACGTGACGCTTCTCAGCACCTGAACTCCTGTGTCGACCCCTTTGTCTACTACTTCTCCTCC  
 TCCGGGTTCCAAGCCGACTTTCATGAGCTGCTGAGGAGTGTGTGGGCTCTGGGCCAGTGGCAGCAGG  
 AGAGCAGCATGGAGCTGAAGGAGCAGAAGGGAGGGAGGAGCAGAGAGCGGACCGACAGCTGAAAGAAA  
 GACCAGTGAACACTCACAGGGCTGTGAACTGGTGGCCAGGTGGCCTGTGCTGAAAGC

**ACGCGT**ACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAATGATATCCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA



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**Protein Sequence:** >RC207772 protein sequence  
Red=Cloning site Green=Tags(s)

MDTGPDQSYFSGNHWFVFSVYLLTFLVGLPLNLLALVVFVGLQRRPVAVDVLLNLNTASDLLLFLPF  
 RMVEAANGMHWLPLFILCPLSGFIFFTTIYLTALFLAAVSIERFLSVAHPLWYKTRPRLGQAGLVSACW  
 LLASAHCSVVYVIEFSGDISHSQGTNGTCYLEFRKQDLAILLVRLMAVVLVPLIITSYCYSRLVWI  
 LGRGGSHRRQRRVAGLLAATLLNFLVCFGPYNVSHVVGYICGESPAWRIYVTLSTLNSCVDPFVYVYFSS  
 SGFQADFHELLRRLCGLWGQWQEQESSMELKEQKGGEEQRADRP AERKTSEHSQCCGTGGQVACAES

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

**Chromatograms:** [https://cdn.origene.com/chromatograms/mk6136\\_a07.zip](https://cdn.origene.com/chromatograms/mk6136_a07.zip)

**Restriction Sites:** SgfI-MluI

**Cloning Scheme:**



**ACCN:** NM\_005304

**ORF Size:** 1038 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).

**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\\_005304.5](#)

**RefSeq Size:** 1709 bp

**RefSeq ORF:** 1041 bp

**Locus ID:** 2865

**UniProt ID:** [O14843](#)

**Cytogenetics:** 19q13.12

**Domains:** 7tm\_1

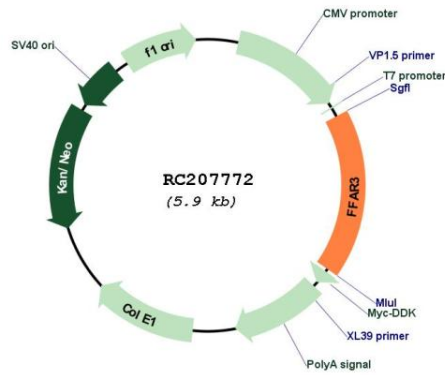
**Protein Families:** Druggable Genome, GPCR, Transmembrane

**MW:** 38.6 kDa

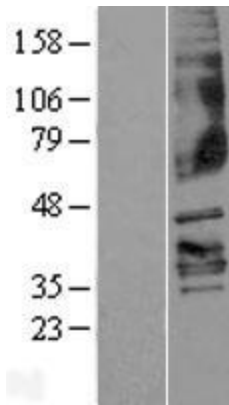
**Gene Summary:**

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 (PubMed:12711604). 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. 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. 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. Among SCFAs, the fatty acids containing less than 6 carbons, the most potent activators are probably propionate, butyrate and pentanoate while acetate is a poor activator (PubMed:12496283, PubMed:12711604).[UniProtKB/Swiss-Prot Function]

Product images:



Circular map for RC207772



Western blot validation of overexpression lysate (Cat# [LY401634]) using anti-DDK antibody (Cat# [TA50011-100]). Left: Cell lysates from untransfected HEK293T cells; Right: Cell lysates from HEK293T cells transfected with RC207772 using transfection reagent MegaTran 2.0 (Cat# [TT210002]).