OriGene Technologies, Inc.
9620 Medical Center Drive, Ste 200
Rockville, MD 20850, US
Phone: +1-888-267-4436
https://www.origene.com
techsupport@origene.com
EU: info-de@origene.com
CN: techsupport@origene.cn

Product datasheet for SC116811

FFAR3 (NM_005304) Human Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	FFAR3 (NM_005304) Human Untagged Clone
Tag:	Tag Free
Symbol:	FFAR3
Synonyms:	FFA3R; GPR41; GPR42
Mammalian Cell Selection:	None
Vector:	pCMV6-XL4
E. coli Selection:	Ampicillin (100 ug/mL)

Fully Sequenced ORF:

>OriGene ORF within SC116811 sequence for NM_005304 edited (data generated by NextGen Sequencing)

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ATGGATACAGGCCCCGACCAGTCCTACTTCTCCGGCAATCACTGGTTCGTCTTCTCGGTG
TACCTTCTCACTTTCCTGGTGGGGCTCCCYCTCAACCTGCTGGCCCTGGTGGTCTTCGTG
GGCAAGCTGCAGCGCCGCCCGGTGGCCGTGGACGTGCTCCTGCTCAACCTGACCGCCTCG
GACCTGCTCCTGCTGCTGTTCCTGCCTTTCCGCATGGTGGAGGCAGCCAATGGCATGCAC
TGGCCCCTGCCCTTCATCCTCTGCCCACTCTCTGGATTCATCTTCTTCACCACCATCTAT
CTCACCGCCCTCTTCCTGGCAGCTGTGAGCATTGAACGCTTCCTGAGTGTGGCCCACCCA
CTGTGGTACAAGACCCGGCCGAGGCTGGGGCAGGCAGGTCTGGTGAGTGTGGCCTGCTGG
CTGTTGGCCTCTGCTCACTGCAGCGTGGTCTACGTCATAGAATTCTCAGGGGACATCTCC
CACAGCCAGGGCACCAATGGGACCTGCTACCTGGAGTTCCGGAAGGACCAGCTAGCCATC
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AGCTACTGCTACAGCCGCCTGGTGTGGATCCTCGGCAGAGGGGGCAGCCACCGCCGGCAG
AGGAGGGTGGCGGGGCTGTTGGCGGCCACGCTGCTCAACTTCCTTGTCTGCTTTGGGCCC
TACAACGTGTCCCATGTCGTGGGCTATATCTGCGGTGAAAGCCCGGCGTGGAGGATCTAC
GTGACGCTTCTCAGCACCCTGAACTCCTGTGTCGACCCCTTTGTCTACTACTTCTCCTCC
TCCGGGTTCCAAGCCGACTTTCATGAGCTGCTGAGGAGGTTGTGTGGGCTCTGGGGCCAG
TGGCAGCAGGAGAGCAGCATGGAGCTGAAGGAGCAGAAGGGAGGGGAGGAGCAGAGAGCG
GACCGACCAGCTGAAAGAAAGACCAGTGAACACTCACAGGGCTGTGGAACTGGTGGCCAG
GTGGCCTGTGCTGAAAGCTAG

Clone variation with respect to NM_005304.3
90 c=>y
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5' Read Nucleotide Sequence:

>OriGene 5' read for NM_005304 unedited
ATGATTTGTATACCATTACTATAGGCGGCCGCGCAATTCGCACGAGCCCCTTTTAGCATG
CTGACCAGCCCTGGCAACGGAGCTCAAGGCATCTATGTGCCACTGCTCAACAGTGAGTGA
CGTCATGGGCACGGCCAGGTCTTTATCAGTTCTGCCGGATAAATAGCCAACTGCACTAGG
TCTGGAGAGACAGCAAGGTGCTGTGCGGCAGAGCATTTGGGGTCTCAAAGAAGCAGTGGC
CACCACCATGGATACAGGCCCCGACCAGTCCTACTTCTCCGGCAATCACTGGTTCGTCTT
CTCGGTGTACCTTCTCACTTTCCTGGTGGGGCTCCCTCTCAACCTGCTGGCCCTGGTGGT
CTTCGTGGGCAAGCTGCAGCGCCGCCCGGTGGCCGTGGACGTGCTCCTGCTCAACCTGAC
CGCCTCGGACCTGCTCCTGCTGCTGTTCCTGCCTTTCCGCATGGTGGAGGCAGCCAATGG
CATGCACTGGCCCCTGCCCTTCATCCTCTGCCCACTCTCTGGATTCATCTTCTTCACCAC
CATCTATCTCACCGCCCTCTTCCTGGCAGCTGTGAGCATTGAACGCTTCCTGAGTGTGGC
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CCTGCTGGCCTGTGGCCTCTGCTCCTGCAGCGTGGTCTACGTCATAGCATTCTCAGGGGA
CATCTTCCACCAGCCAGGCACCCATTGGGACCTGCTACCTGNAGTTTCGGGAAGACCAGC
TAGCCATCCTCCTGCCCGTGCGGTTGAAGATGCGTGTGGTCCTTTTGGGGGCCCGGTGAA
TATTACCAGTTCTGTTACAGCCGCCTGGGGGTGGACCTCGGCCAAGGGGGCACCCCCCGC
CGCACAAGAAGGGTGCGGGGGTTTTTGGTGGCCCCCTGTCAACTTTCTGGCTGCTTGGGC
CCTCACCGGCCG

3' Read Nucleotide Sequence:

>OriGene 3' genomic read for NM_005304 unedited
NTTTCCCTATTTTTGGGTATTTTTCTTCGTCTTGTTCTAATGTCTCTGAGATCCCATTTA
TTGAGCAATGGGAACTTTCTGGAAAAGCACNGNGGGAGCANAATGCGGNCTNATNCCTGG
AGCCCTGTCTCCCCTGCTCCTGACTCGCTGGCTGGGAGCAGCTCTGAGGATGGGGTTCTC
CCCTCTCCTGCCCCTGCCACTCACTGGGCAGCCCCCTCANACCCTGGGCACTGCTCTTAG
CTCCTCTGCCACCCTCAAGAAAACACAGGAGCTGCCTGCTGCTATGAGGACCTCATTGTT
CTCCAGAGCAGCCTCTCACCCTGACCCCTTCCCAGAGCCCAATCCATAGTGTGTGGGTGG
ATGGGGATGGAGGTGAGATCGAGAGCTGGGCTTTAGCGCGCATACCCTTAGGGAGGCTAG
ATGTCTACTCTGCCCCCAAGCCCCATCGGGCCCCAGCTCGCCACTCCAAGTCCCTCCTGG
CGTGAGCGAGGAAGCGCCCTGAGGATGACATGCCAGCTACACCCTCCTCCCCCGGAGGAC
CTAGCTTTCAGCACAGGCCACCTGGCCACCAGTTCCACAGCCCTGTGAGTGTTCACTGGT
CTTTCTTTCAGCTGGTCGGTCCGCTCTCTGCTCCTCCCCTCCCTTCTGCTCCTTCAGCTC
CATGCTGCTCTCCTGCTGCCACTGGCCCCAGAGCCCACACAACCTCCTCAGCAGCTCATG
AAAGTCGGCTTGGAACCCGGAGGAGGAGAAGTAGTAGACANAGGGGTCGACACAGGAGTT
CAGGGTGCTGAGAAGCGTCACGTAGATCCTCCACGCCCCGGCTTTCACCGCAGATATAGC
CCACGACATGGGACACGTTGTAGGGCCCAAAGCAGACAAGGAAGTTGAGCACCGTGGCCC
GTCACAGC

Restriction Sites: NotI-NotI

ACCN: NM_005304

Insert Size: 2000 bp

OTI Disclaimer: Our molecular clone sequence data has been matched to the reference identifier above as a point of reference. Note that the complete sequence of our molecular clones may differ from the sequence published for this corresponding reference, e.g., by representing an alternative RNA splicing form or single nucleotide polymorphism (SNP).

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_005304.2, NP_005295.1
RefSeq Size:	1694 bp
RefSeq ORF:	1041 bp
Locus ID:	2865
UniProt ID:	O14843
Cytogenetics:	19q13.12
Domains:	7tm_1
Protein Families:	Druggable Genome, GPCR, Transmembrane

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]