

Product datasheet for **RR213635**

Fads2 (NM_031344) Rat Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Fads2 (NM_031344) Rat Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Fads2
Synonyms:	Fadsd6
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
Cell Selection:	Neomycin



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ORF Nucleotide Sequence:

>RR213635 representing NM_031344
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGCATCGCC**

ATGGGGAAGGGAGGTAACCAGGGAGAGGGGAGCACCCAGCTCCAGGCTCCGATGCCACCTTCCGCTGGG
 AGGAGATTCAGAAGCACAACTGCGCACCGACCGGTGGCTCGTCATCGACCGCAAGGTCTACAACGTTAC
 CAAATGGTCCCAGCGGCACCCAGGGGGCACCGTGTTCATCGGACACTATTCGGGAGAAGATGCTACGGAT
 GCCTTCGGTGCCTTCCACCTGGACCTGGATTTCTGGGCAAGTCTTGAAGCCCTGCTGATTGGTGAAGC
 TGGCCCCAGAGGAGCCAGCCTGGACCGGGGCAAAAGCTCTCAGATCACCGAGGACTTCAGGGCCCTGAA
 GAAGACTGCTGAGGACATGAACCTTTTCAAACCAACCACCTGTTCTTTCTCCTCCTGTCCACATC
 ATCGTCATGGAAGCATCGCTGGTTCATCCTCTCGTACTTCGGCAATGGCTGGATCCCACCGTCATCA
 CGGCTTTGTCCTTGTACCTCCAGGCCCAAGCTGGATGGCTACAACATGATTATGGCCACCTTTCTGT
 CTATAAGAAATCCATATGGAACCACATTGTCCACAAGTTGTCTTGGCCACTTAAGGGTGCCTCCGCC
 AACTGGTGAACCATCGACATTTCCAGCACCATGCGAAGCCCAACATCTTCCACAAGGACCCCGACATAA
 AGAGCCTGCACGTGTTTGTCTTGGAGAGTGGCAGCCCTCGAGTATGGCAAGAAGAAGTGAAATATCT
 GCCCTACAACCACCAGCATGAATACTTCTCTGTATCGGACCACCGCTGCTCATCCCTATGTAATCCAG
 TACCAGATCATATGACCATGATCAGACGAGACTGGGTGGACTTGGCCTGGGCCATCAGCTACTATG
 CACGTTTCTTCTACACCTATATCCCTTTCTATGGCATCTTGGGAGCCCTGGTTTTCTCACTTTATCAG
 GTTCTGGAGAGCCACTGGTTTGTGTGGTCCACAGATGAACCACATTGTCATGGAGATTGATCTTGAT
 CACTACCGGACTGGTTCAGCAGCCAGCTGGCAGCCACCTGCAATGTGGAGCAGTCTTCTTCAATGACT
 GGTTCAGCGGGCACCTCAATTTCCAGATTGAGCACCCCTTCCCCACTATGCCAAGACACAACCTTGCA
 CAAGATTGCCCCACTGGTGAAGTCTCTCTGCGCCAAGCATGGCATTGAATACCAAGAGAAGCCGCTGCTG
 AGGGCCCTGCTCGACATTGTGAGTTCAGTGAAGAAGTCTGGGAGCTGTGGCTGGATGCCTACCTCCACA
 AA

ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
 ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence:

>RR213635 representing NM_031344
 Red=Cloning site Green=Tags(s)

MKGKGNQGEESTELQAPMPTFRWEEIQKHNLRTDRWLVIDRKVYVNTKWSQRHPGGHRVIGHYSGEDATD
 AFRAFHLDLDFVGKFLKPLLIGELAPEEPSLDRGKSSQITDFRALKKAEDMNLFKTNHLFFLLLSHI
 IVMESIAWFILSYFNGWIPTVITAFVLATSQAQAGWLQHDYGHLSVYKKSINWNIHVHKFVIGHLKGASA
 NWWNHRHFQHHAKPNIFHKDPDIKSLHVFVLEGEWQPLEYGKKKLYLPYNHQHEYFFLIGPPLLIPMYFQ
 YQIIMTMIRRRDWDLAWAISYYARFFYTYIPFYGILGALVFLNFIREFLESHWFVWVTQMNHIVMEIDLD
 HYRDWFSQLAATCNVEQSFFNDWFSGLHNFQIEHHLFPTMPRHNLHKIAPLVKSLCAKHGIEYQEKPLL
 RALLDIVSSLKSGELWLDAYLHK

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

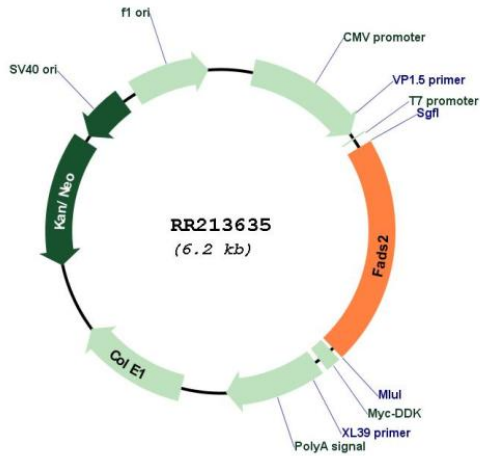
Restriction Sites:

Sgfl-MluI

Cloning Scheme:



Plasmid Map:



ACCN: NM_031344
 ORF Size: 1332 bp

OTI Disclaimer:	<p>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.</p> <p>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</p>
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:	<ol style="list-style-type: none"> 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_031344.2 , NP_112634.1
RefSeq Size:	1706 bp
RefSeq ORF:	1335 bp
Locus ID:	83512
UniProt ID:	Q9Z122
Cytogenetics:	1q43
MW:	52.4 kDa

Gene Summary:

Acts as a fatty acyl-coenzyme A (CoA) desaturase that introduces a cis double bond at carbon 6 of the fatty acyl chain. Involved in biosynthesis of highly unsaturated fatty acids (HUFA) from the essential polyunsaturated fatty acids (PUFA) linoleic acid (LA) (18:2n-6) and alpha-linolenic acid (ALA) (18:3n-3) precursors. Catalyzes the first and rate limiting step in this pathway which is the desaturation of LA (18:2n-6) and ALA (18:3n-3) into gamma-linoleate (GLA) (18:3n-6) and stearidonate (18:4n-3), respectively (PubMed:10049752, PubMed:14563830, PubMed:22216341, PubMed:11988075). Subsequently, in the biosynthetic pathway of HUFA n-3 series, desaturates tetracosapentaenoate (24:5n-3) to tetracosahexaenoate (24:6n-3), which is then converted to docosahexaenoate (DHA)(22:6n-3), an important lipid for nervous system function (PubMed:11988075). Also desaturates (11E)-octadecenoate (trans-vaccenoate)(18:1n-9), a metabolite in the biohydrogenation pathway of LA (18:2n-6) (PubMed:24070791).[UniProtKB/Swiss-Prot Function]