

Table S1 Primers for gene cloning, and qRT-PCR

primer name	ID of PeanutBase	Forward primer sequence (5'-3')	Forward primer sequence (5'-3')
FAD2-7	<i>Arahy.BY45PL</i>	ATGGGAGCTGGCGGCCG AA	ACTTGGACAGCAGCTCT AGTC
FAD2-8	<i>Arahy.SIY1PZ</i>	ATGGGGTCTGGTGGTCA TTCT	CCTCACACTTAAAGCTTA TTATACC
FAD2-9	<i>Arahy.9P5B67</i>	ATGGGGTCTGGGGGTCA TTC	CACTTAAAGCTTATTATA CCAAAGA
AhFAD2A/B	<i>Arahy.42CZAS.1/</i> <i>Arahy.5913QL.1</i>	GATTGAAGCTCAAAAGA AGCCTCT	TGTAGAAGAGTAAGTAG GCCACT
AhFAD2-3		ATGCATGCTTTCTTGTC ATTGAAG	AGAGAACGTTCAAAGCA ATGTGGT
AhFAD2-7	<i>Arahy.BY45PL</i>	AACCTCTGTTCTCCTTCA AACA	ATAGTAGAGGCAAAAGG CTATGGT
AhFAD2-8	<i>Arahy.SIY1PZ</i>	CATCACACTATCAGTTAC TCTCTTT	ATAGAACGCGGCCAGGA CAC
AhFAD2-9	<i>Arahy.9P5B67</i>	CTCTGGAGAGAGGCCA AAGA	AGCCAACTACGATATATA GCGAT

Table S2 Protein information of new members of FAD2

Gene	ORF (bp)	Chromosome	Lenth of Protein/aa	MW/kDa	pI	Location
<i>AhFAD2-7</i>	1152	B06	383	43.8	8.8	Endoplasmic reticulum
<i>AhFAD2-8</i>	1164	A09	387	45.0	8.96	Endoplasmic reticulum
<i>AhFAD2-9</i>	1164	B09	387	45.1	9.04	Endoplasmic reticulum

Table S3 Fatty acid composition of transformed INVSc1

Transformant	Oleic acid (%)	Linoleic acid (%)
pYES2	12.87	1.70
pYFAD2-7	13.42	10.44
pYFAD2-8	47.22	49.14
pYFAD2-9	55.79	57.03

Table S4 Determination of fatty acids in transgenic Arabidopsis

	Oleic acid (%)	Linoleic acid (%)
WT	11.63	31.01
<i>fad2</i>	57.28	2.56
AhFAD2-7	44.23	7.49
AhFAD2-8	51.45	3.82
AhFAD2-9	39.60	13.06