

Figure S1. Expression of various transcripts of *GmLACS2-3* in Col-0, *GmLACS2-3* OE1, *GmLACS2-3* OE2 and *atlacs2*/GmLACS2-3 C1 and *atlacs2*.

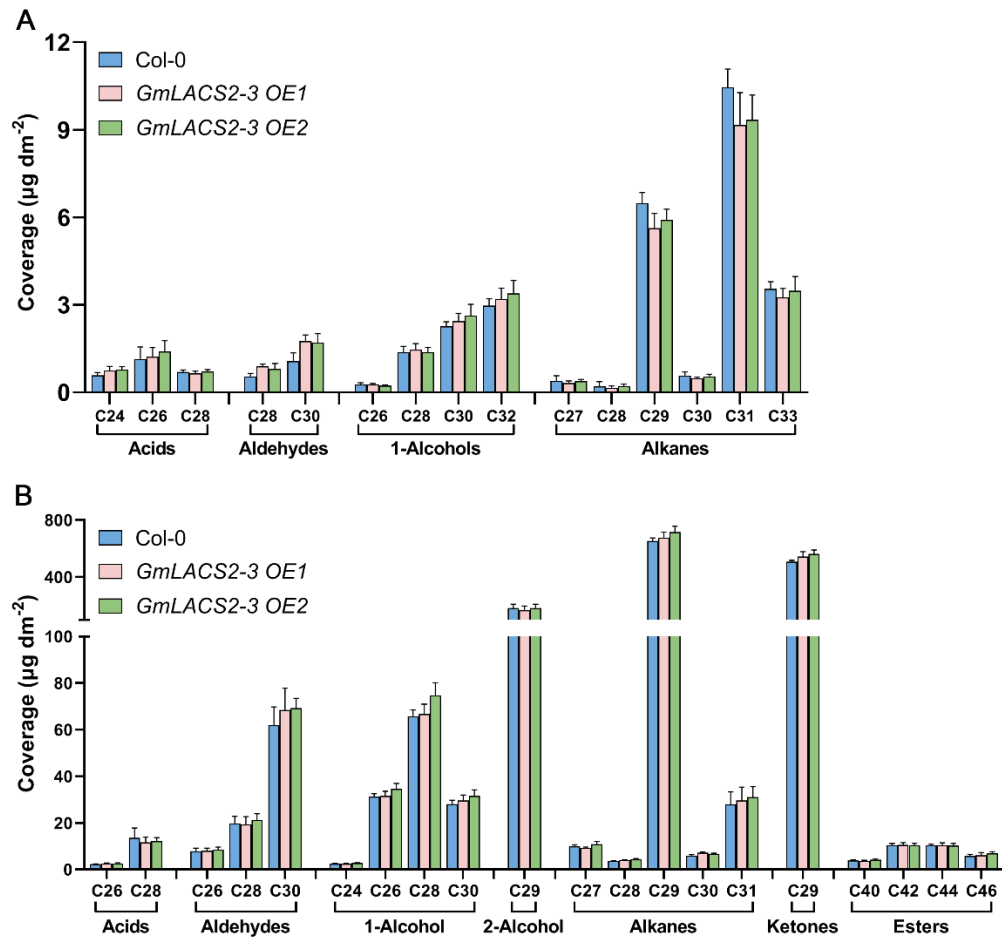


Figure S2. Wax composition of leaf and stem of *Arabidopsis* wild-type Col-0, *GmLACS2-3 OE1* and *GmLACS2-3 OE2*. (A) Wax profile in leaves of Col-0, *GmLACS2-3 OE1* and *GmLACS2-3 OE2*. (B) Wax profile in stems of Col-0, *GmLACS2-3 OE1* and *GmLACS2-3 OE2*. Wax coverage is expressed as wax amounts per leaf/stem surface area (mg.dm^{-2}). Each wax constituent is designated by carbon chain length and is labeled by chemical class along the x axis. Values shown are means \pm SD ($n=4$).

Table S1. List of Primers used in this study.

Name	Sequence	Purpose
GABI368C02-LP	GAGGCTGTGAAGAAATATCCG	For genotyping lacs2-3 T-DNA insertion lines
GABI368C02-RP	GTACTCGAGACTTCCCCGAAG	For genotyping lacs2-3 T-DNA insertion lines
o8409	ATATTGACCATCATACTCATTGC	T-DNA left-border primer
LACS2.3-F	ACAATTACATTTACAATTACGATG CCAGAGGTTTATACTGT	Amplification of <i>GmLACS2-3</i> (G.max 20G007900)
LACS2.3-R	AGCTCCTCGCCCTTGCCCATGAAT TGTGCTCTTTTGCCCAAT	Amplification of <i>GmLACS2-3</i> (G.max 20G007900)
ACTIN-F	CGGTGGTTCTATCTTGGCAT	Amplification of <i>GmACTIN</i>
ACTIN-R	GTCTTTCGCTTCAATAACCCCT	Amplification of <i>GmACTIN</i>
QRT-F1	GTTTCGCCTGTTGTTCCACTT	qRT-PCR, <i>GmLACS2-1</i> (G.max 12G047400)
QRT-R1	GCCATTCTCCAATGTCACCT	qRT-PCR, <i>GmLACS2-1</i> (G.max 12G047400)
QRT-F2	TGCTTCTCGTGGGAAGAGTT	qRT-PCR, <i>GmLACS2-2</i> (G.max 11G122500)
QRT-R2	GTTTCGCCTGTTGTTCCACTT	qRT-PCR, <i>GmLACS2-2</i> (G.max 11G122500)
QRT-F3	GGCTTTCATGGCTGAAGTGT	qRT-PCR, <i>GmLACS2-3</i> (G.max 20G007900)
QRT-R3	CCTATTGATGAGCCCTTGGA	qRT-PCR, <i>GmLACS2-3</i> (G.max 20G007900)
QRT-F4	TTGGATGAGCTCAACAGCAC	qRT-PCR, <i>GmLACS2-4</i> (G.max 07G161900)
QRT-R4	CAAAGGGAATTGGTTCCAGA	qRT-PCR, <i>GmLACS2-4</i> (G.max 07G161900)
RT-F	CTAGGTGGACGTGTTTCGCAT	RT-PCR, <i>GmLACS2-3</i> (G.max 20G007900)
RT-R	ACCACAACAGCCACCAAGAA	RT-PCR, <i>GmLACS2-3</i> (G.max 20G007900)
ACTIN2-F	GTTGGTGATGAAGCACAAATCCAAG	RT-PCR (AT3G18780)
ACTIN2-R	CTGGAACAAGACTTCTGGGCATCT	RT-PCR (AT3G18780)

Table S2. The sequences characteristics of identified *LACSs* genes in *Glycine max*.

S. No	Gene Id*	Molecular weight	Theoretical <i>pI</i>	AA length	Grand average of hydropathicity (GRAVY)
1.	G_max_01G225200	75365.95	6.88	671	-0.164
2.	G_max_02G010300	74382.04	6.54	660	-0.215
3.	G_max_03G221400	74409.94	6.78	662	-0.194
4.	G_max_05G216600	74670.93	6.10	665	-0.204
5.	G_max_06G112900	76017.50	8.24	694	-0.066
6.	G_max_07G161900	73852.74	6.20	660	-0.197
7.	G_max_10G010800	74516.20	6.73	660	-0.220
8.	G_max_10G249700	76880.03	7.86	696	-0.124
9.	G_max_11G017900	74031.44	7.76	663	-0.153
10.	G_max_11G122500	73788.63	6.23	656	-0.223
11.	G_max_12G047400	73843.48	5.58	656	-0.229
12.	G_max_13G010100	79550.53	7.83	725	-0.107
13.	G_max_13G079900	76131.58	5.91	696	-0.021
14.	G_max_14G149700	70974.48	5.90	647	0.016
15.	G_max_15G220900	69692.28	5.55	625	-0.034
16.	G_max_19G218300	74643.20	6.50	662	-0.231
17.	G_max_20G007900	73831.71	6.39	660	-0.208
18.	G_max_20G060300	74317.36	6.53	674	-0.092
19.	G_max_20G143900	76907.96	6.77	698	-0.134

* G_max indicates Glyma., while number indicates the accession number.

Table S3. Cuticular wax composition of both inflorescence stems and leaves of *Arabidopsis* Col-0, *GmLACS2-3 OE1* and *GmLACS2-3 OE2*. Values shown are means \pm SD ($\mu\text{g dm}^{-2}$), total wax amounts, and coverage of individual compound classes (n = 4). –, Undetectable.

Sample	Total	Fatty Acids	Aldehydes	1-Alcohols	2-Alcohol	Alkanes	Ketone	Esters
Inflorescence stems								
Col-0	1655 \pm 89	16.0 \pm 4.3	89.7 \pm 12.1	127.4 \pm 5.95	182 \pm 128	701 \pm 27	509 \pm 10	30.5 \pm 2.2
<i>GmLACS2-3 OE1</i>	1711 \pm 136	14.3 \pm 2.5	95.9 \pm 13.8	130.1 \pm 9	169 \pm 28	727 \pm 45	544 \pm 35	30.8 \pm 3.4
<i>GmLACS2-3 OE2</i>	1801 \pm 127	14.7 \pm 1.8	98.9 \pm 8.2	143.4 \pm 11	184 \pm 26	767 \pm 48	561 \pm 29	31.8 \pm 2.9
Rosette leaves								
Col-0	41.6 \pm 3.7	2.44 \pm 0.56	1.62 \pm 0.37	6.86 \pm 0.67	-	21.7 \pm 1.7	-	-
<i>GmLACS2-3 OE1</i>	42.1 \pm 5.0	2.61 \pm 0.53	2.64 \pm 0.30	7.35 \pm 0.89	-	19 \pm 2.1	-	-
<i>GmLACS2-3 OE2</i>	44.3 \pm 5.4	2.89 \pm 0.55	2.50 \pm 8.2	7.63 \pm 10.2	-	19.9 \pm 1.9	-	-