Supporting Information Figs S1-S5 and Table S1

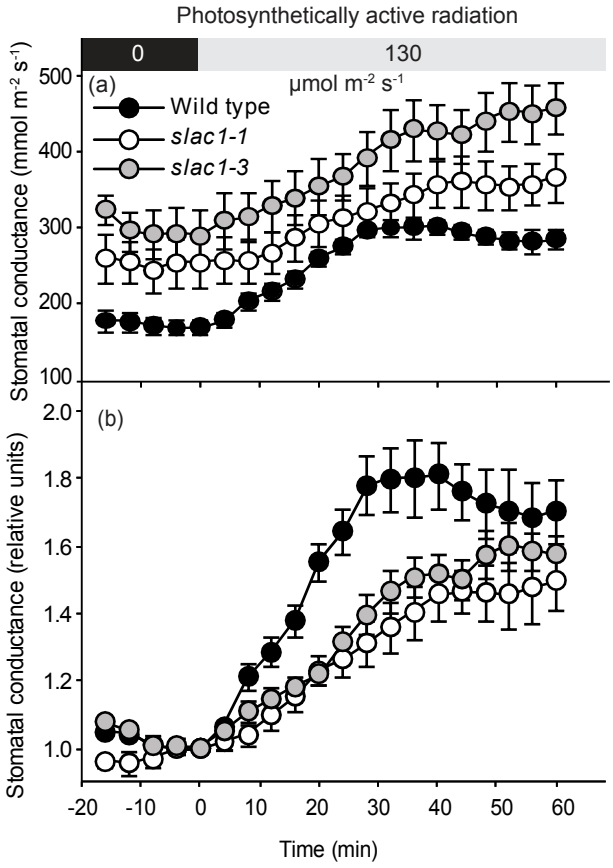

Figure S1

Figure S1. Light-induced increase in whole-plant stomatal conductance is reduced in *slac1* mutants.
Stomatal conductance patterns of wild type, *slac1-1*, and *slac1-3* plants kept in darkness at normal air humidity (65 %) for two hours and then exposed to 130 µmol m^{-2} s^{-1} light as indicated in upper panel are shown. Values normalized to stomatal conductance at time 0 (a) as well as absolute values (b) are presented. Error bars indicate ±SEM, *n*=7-8.

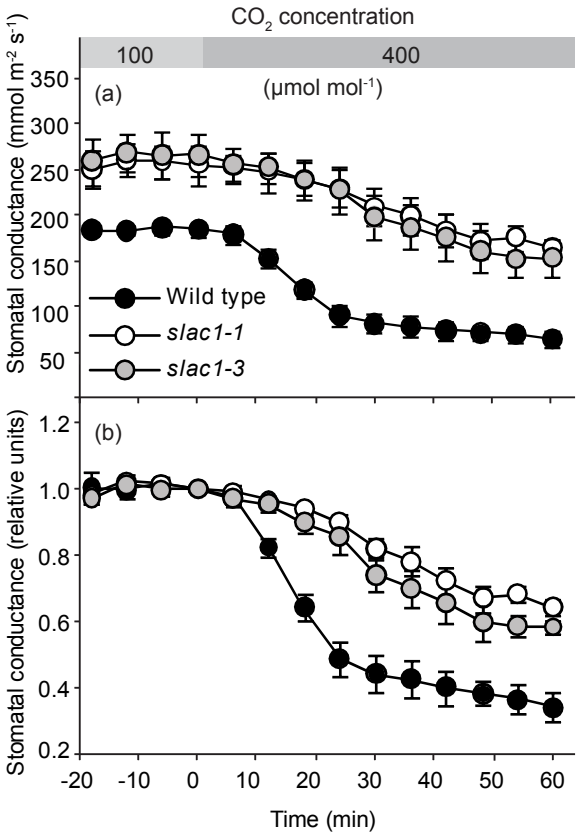

Figure S2

Figure S2. CO_2-induced stomatal closure in *slac1* mutants occurs at below-ambient CO_2 concentrations.
(a, b) Stomatal closure was induced by increasing CO_2 from 100 μmol mol^{-1} to 400 μmol mol^{-1} for 60 min, at air relative humidity of 56% (±SEM, *n* = 4). Patterns of average stomatal conductance in absolute values (a) and normalized to time 0 (b) are shown.

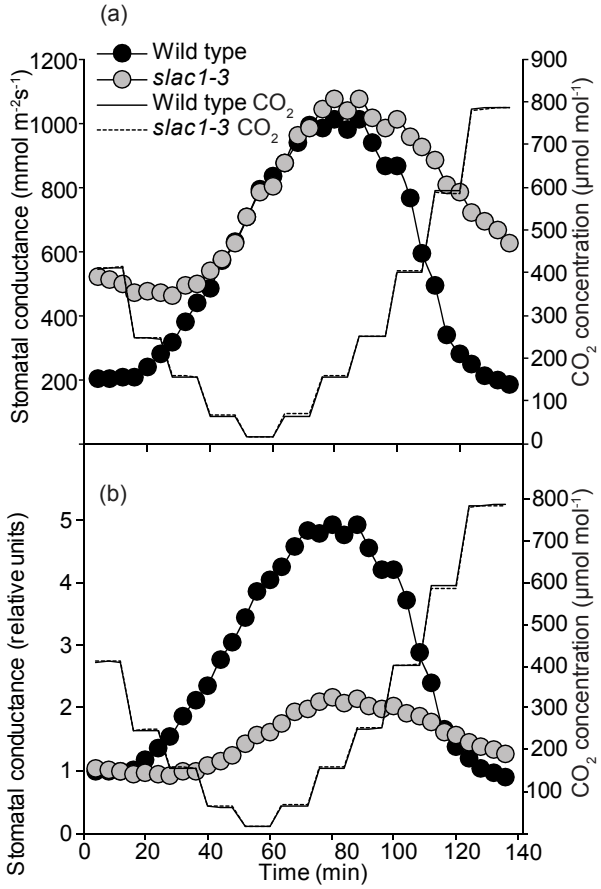

Figure S3

Figure S3. CO_2-induced changes in stomatal conductance of wild type and *slac1-3* plants. After acclimatization of plants at normal air humidity (65 %) and CO_2 concentration of 400 µmol mol^{-1}, CO_2 was stepwise decreased to 0 µmol mol^{-1} as shown by solid (wild type) and dashed line (*slac1-3*). Patterns of average stomatal conductance in absolute values (a) and normalized to time 0 (b) are shown. Experiment was repeated three times with similar results.

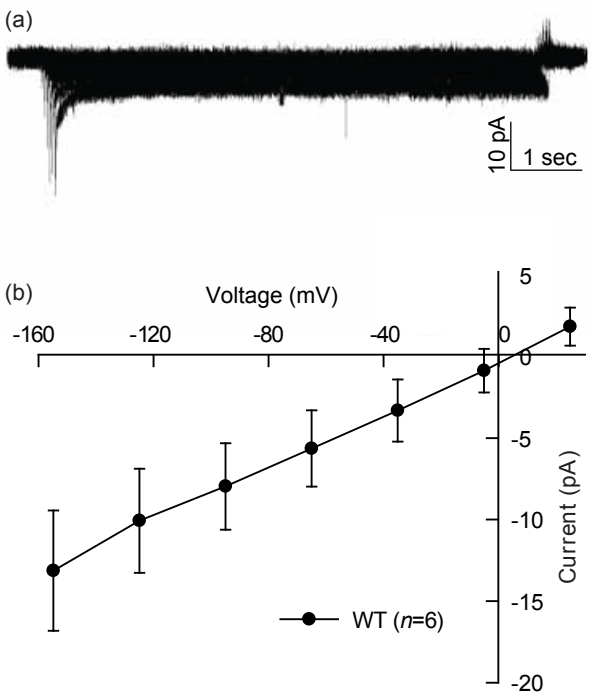

Figure S4

Figure S4. Whole-cell patch clamp recordings of wild-type Arabidopsis guard cells showing that S-type anion channels do not mediate large malate efflux currents (-13 pA at -155 mV) activity comparing to chloride efflux currents (-94 pA at -145 mV) (Vahisalu *et al.*, 2008). (a) Whole-cell recordings in response to voltage steps from -145 mV to +35 mV. (b) Average current voltage curve of guard cells recorded as in (a). Pipette solution contained 150 mM Cs-malate and bath solution contained 30 mM Cs-malate. Error bars indicate ±SEM, *n*=6.

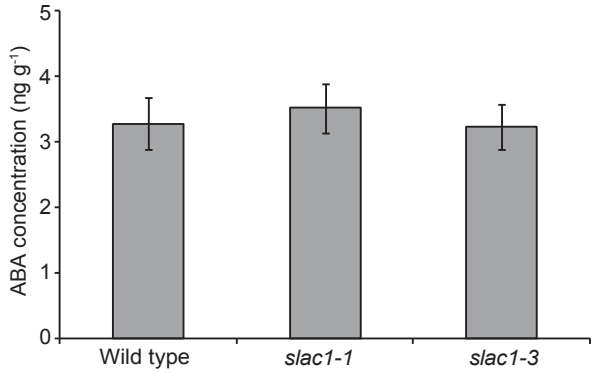

Figure S5

Figure S5. Whole-plant abscisic acid (ABA) concentrations of *slac1-1* and *slac1-3*. The concentrations of ABA were determined according to Forcat *et al.* (2008, Plant Methods, 4:16) in 25 d old plants of wild type, *slac1-1* and *slac1-3* plants. Experiment was carried out in three different sets of plants (*n*=5). Error bars indicate ±SEM, *n*=3.

Supplementary Table 1. Primers used for Real-Time PCR

Protein	Primer efficiency	Primers
at4g34270 (control)	0.86	Forward 5'-GTGAAAACTGTTGGAGAGAAGCAA-3' Reverse 5'-TCAACTGGATACCCTTTCGCA-3'
AHA1	0.88	Forward 5'-CTGGGAGGCTACCAAGCCA-3' Reverse 5'-CTCACACCGAACTTGTCCGA-3'
AHA2	0.82	Forward 5'-CCGGAGTCTTCCCAGAGC-3' Reverse 5'-TTTAGAGCAGGGGCATCATT-3'
AHA5	0.97	Forward 5'-GGCTGTTGCAAGACAGGAA-3' Reverse 5'-CGGAGGATCAAAAAGAGGTAAA-3'
KAT1	0.93	Forward 5'-AGCATGGGATGGGAAGAGTGGAG-3' Reverse 5'-AGAGCAGTGTCGGAAGTCGGAT-3'
KAT2	0.82	Forward 5'-TAGCTCGCTGTTTGCAAGG-3' Reverse 5'-CAAACAGTGTCACCGAAATGA-3'
AKT1	0.73	Forward 5’-ACA TCCTTG TGAACGGAACC-3’ Reverse 5’-CCTCTCTCACAATGCTTTCTGTT-3’
AKT2	0.83	Forward 5'-GCTGCTTTCGACTTCTATCAGT-3' Reverse 5'-ATCAGTCCATGTCTTTCCTTGGT-3'
AtABCB14	0.85	Forward 5'-TTCTCGCGTTTCACAGAATG-3' Reverse 5'-CTGTTTGCATCCAACAAGCA-3'
GORK	0.87	Forward 5'-GCATCAATCCGCGCCAAGATT-3' Reverse 5'-GTGGAGCAGCCTTTGAAGAGA-3'
TPC1	0.84	Forward 5'-CGCTTGATATCGAAGAAAGCTC-3' Reverse 5'-TCTCCAACACATATATCCAACCA-3'
AtALMT12	0.93	Forward 5'-TCGCTCTATAGAAGCATGTGTGGATGA-3' Reverse 5'-AATCCAAAACAGCTTGATACCCTTCGT-3'
AtKC1	0.83	Forward 5'-CTCAAGACATGAAAATGGACAGAT-3' Reverse 5'-GAATCACCATTGTTTTTGTTATCTTG-3'