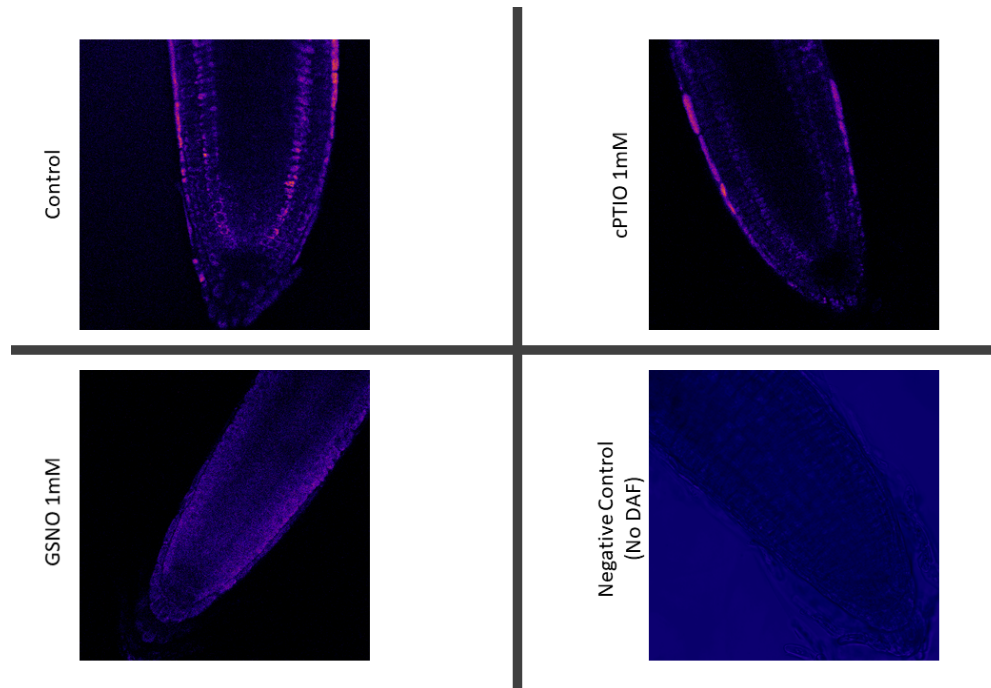


A



B

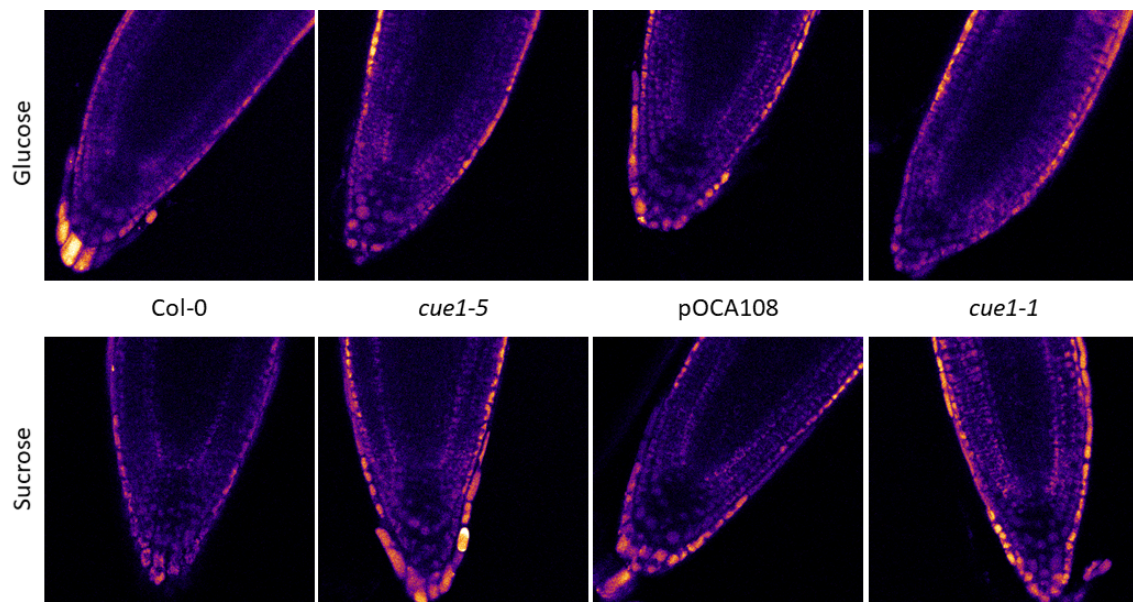


Figure S1. NO content by *in vivo* imaging. (A) Detection of NO by confocal microscopy using root tips of 7-day-old Col-0 seedlings stained with DAF-FM DA incubation after treatment with NO scavenger (cPTIO) and donor (GSNO). cPTIO is able to scavenge DAF and GSNO increases local maxima. (B) DAF fluorescence by confocal microscopy using root tips of 7-day-old seedlings from Col-0, pOCA108 and *cue1* alleles grown on MS-Root medium supplemented with either 2%(w/v) glucose or 0.75%(w/v) sucrose. FIRE LUT was used as a fluorescence heatmap.

Table S1. Sugar and NO affect root meristem size. Meristem size parameters of 7-day-old seedlings grown on MS-Root medium supplemented with either 2% glucose or 0.75% sucrose. Values represent the mean $\pm$ CI (N = 104). All units were in μm and 10 roots were analyzed per genotype and carbon source.

	Glucose				Sucrose			
	Col-0	<i>cue1-5</i>	pOCA	<i>cue1-1</i>	Col-0	<i>cue1-5</i>	pOCA	<i>cue1-1</i>
Root Length (mm)	17.26 $\pm$ 0.41	8.61 $\pm$ 0.94	22.03 $\pm$ 0.74	10.06 $\pm$ 0.67	17.75 $\pm$ 0.51	12.00 $\pm$ 0.58	18.52 $\pm$ 0.56	10.97 $\pm$ 0.59
Root Elongation Rate (mm/d)	3.81 $\pm$ 0.28	2.00 $\pm$ 0.83	4.95 $\pm$ 0.47	2.30 $\pm$ 0.32	3.75 $\pm$ 0.88	2.76 $\pm$ 0.57	4.10 $\pm$ 0.62	2.48 $\pm$ 0.52
Meristem Size (μm)	192.92 $\pm$ 23.05	153.36 $\pm$ 13.01	185.20 $\pm$ 14.09	157.58 $\pm$ 17.85	199.27 $\pm$ 18.43	163.83 $\pm$ 19.34	206.57 $\pm$ 21.08	203.21 $\pm$ 29.20
Meristematic Cell Number (cells)	24.8 $\pm$ 2.8	17.4 $\pm$ 1.7	23.4 $\pm$ 1.6	16.4 $\pm$ 2.3	26.1 $\pm$ 1.2	20.7 $\pm$ 2.7	30.0 $\pm$ 2.6	25.4 $\pm$ 1.2
Meristematic Cell Length (μm)	8.16 $\pm$ 0.38	8.87 $\pm$ 0.73	7.95 $\pm$ 0.47	9.74 $\pm$ 0.77	7.72 $\pm$ 0.36	7.98 $\pm$ 0.37	6.89 $\pm$ 0.42	7.98 $\pm$ 0.97
Average Cell Length Cells 1-10	7.93 $\pm$ 0.54	8.63 $\pm$ 0.76	7.77 $\pm$ 0.52	9.37 $\pm$ 0.60	7.01 $\pm$ 0.29	7.44 $\pm$ 0.42	7.01 $\pm$ 0.56	7.5 $\pm$ 0.60
Average Cell Length Cells 11-20	7.83 $\pm$ 0.45	11.94 $\pm$ 2.39	7.76 $\pm$ 0.63	13.94 $\pm$ 3.12	6.95 $\pm$ 0.36	9.11 $\pm$ 1.45	6.39 $\pm$ 1.18	7.46 $\pm$ 1.15
Average Cell Length Cells 21-30	15.03 $\pm$ 2.59	33.28 $\pm$ 9.41	14.55 $\pm$ 2.05	29.51 $\pm$ 6.33	14.87 $\pm$ 1.57	20.40 $\pm$ 3.80	13.16 $\pm$ 8.78	14.35 $\pm$ 3.70

Table S2. Two-way ANOVA statistical parameters and simple main effects results.

ANOVA Table (type II tests) for Figure 1_NO_results.

	Effect	DFn	DFd	F	p	p<.05	ges
1	Genotype	5	24	36.700	1.75e-10	*	0.884
2	Condition	1	24	606.717	1.51e-18	*	0.962
3	Genotype:Condition	5	24	23.125	1.86e-08	*	0.828
Genotype	Effect	DFn	DFd	F	p	p<.05	ges
1 Col-0	Condition	1	24	57.2	8.36e- 8	*	0.705
2 <i>cue1-1</i>	Condition	1	24	78.6	4.88e- 9	*	0.766
3 <i>cue1-5</i>	Condition	1	24	11.7	2.00e- 3	*	0.328
4 <i>cue1-6</i>	Condition	1	24	125.	5.47e-11	*	0.839
5 <i>nox1</i>	Condition	1	24	131.	3.23e-11	*	0.845
6 pOCA	Condition	1	24	319.	2.31e-15	*	0.93
Condition	Effect	DFn	DFd	F	p	p<.05	ges
1 Control	Genotype	5	24	54.5	2.53e-12	*	0.919
2 NaCl	Genotype	5	24	5.28	2.00e- 3	*	0.524

ANOVA Table (type II tests) for Figure 5_NO_results.

	Effect	DFn	DFd	F	p	p<.05	ges
1	Genotype	3	24	206.038	2.94e-17	*	0.963
2	Condition	1	24	336.363	1.27e-15	*	0.933
3	Genotype:Condition	3	24	33.987	8.37e-09	*	0.809
Genotype	Effect	DFn	DFd	F	p	p<.05	ges
1 Col-0	Condition	1	24	13.6	1.00e- 3	*	0.363
2 <i>cue1-1</i>	Condition	1	24	82.1	3.26e- 9	*	0.774

3	<i>cue1-5</i>	Condition	1	24	298.	4.85e-15	*	0.926
4	pOCA	Condition	1	24	44.3	6.97e-7	*	0.649
	Condition	Effect	DFn	DFd	F	p	p<.05	ges
1	Glucose	Genotype	3	24	201.	4.02e-17	*	0.962
2	Sucrose	Genotype	3	24	39.5	1.94e-9	*	0.832

ANOVA Table (type II tests) for Figure 6_MeristemCellNumber_results.

		Effect	DFn	DFd	F	p	p<.05	ges
1		Genotype	3	70	40.279	3.08e-15	*	0.633
2		Condition	1	70	15.787	1.70e-04	*	0.184
3		Genotype:Condition	3	70	6.161	8.88e-04	*	0.209
	Genotype	Effect	DFn	DFd	F	p	p<.05	ges
1	Col-0	Condition	1	70	0.022	0.881	""	0.00032
2	<i>cue1-1</i>	Condition	1	70	26.3	0.00000252	"**"	0.273
3	<i>cue1-5</i>	Condition	1	70	6.94	0.01	"**"	0.09
4	pOCA	Condition	1	70	1.03	0.312	""	0.015
	Condition	Effect	DFn	DFd	F	p	p<.05	ges
1	Glucose	Genotype	3	70	36.3	2.93e-14	*	0.609
2	Sucrose	Genotype	3	70	10.2	1.23e-5	*	0.303

ANOVA Table (type II tests) for Figure 6_MeristemSize_results.

		Effect	DFn	DFd	F	p	p<.05	ges
1		Genotype	3	70	27.330000	8.22e-12	*	5.39e-01
2		Condition	1	70	0.000408	9.84e-01		5.83e-06
3		Genotype:Condition	3	70	6.650000	5.13e-04	*	2.22e-01
	Genotype	Effect	DFn	DFd	F	p	p<.05	ges
1	Col-0	Condition	1	70	2.48	0.12	""	0.034
2	<i>cue1-1</i>	Condition	1	70	10.5	0.002	"**"	0.13
3	<i>cue1-5</i>	Condition	1	70	1.62	0.207	""	0.023
4	pOCA	Condition	1	70	5.35	0.024	"**"	0.071
	Condition	Effect	DFn	DFd	F	p	p<.05	ges
1	Glucose	Genotype	3	70	29.0	2.59e-12	*	0.555
2	Sucrose	Genotype	3	70	4.93	4.00e-3	*	0.174

Table S3. Protein content of 4-day-old and 7-day-old seedlings (µg/ml).

Protein Content of 4-day-old seedlings (µg/ml).

	Col-0	<i>cue1-5</i>	<i>cue1-6</i>	<i>nox1</i>	pOCA108	<i>cue1-1</i>
Control	5.27 ± 0.10	5.34 ± 0.24	5.48 ± 0.07	5.14 ± 0.09	5.37 ± 0.27	4.87 ± 0.13
NaCl	4.48 ± 0.15	4.94 ± 0.06	4.96 ± 0.04	5.30 ± 0.01	5.34 ± 0.13	4.92 ± 0.28

Protein Content of 7-day-old seedlings (µg/ml).

	Col-0	<i>cue1-5</i>	pOCA108	<i>cue1-1</i>
Glucose	3.37 ± 0.04	2.98 ± 0.17	3.18 ± 0.18	2.77 ± 0.09
Sucrose	3.33 ± 0.13	2.87 ± 0.25	3.43 ± 0.07	3.04 ± 0.13