

a		WT Mock			WT ABA			P value	<i>pyrpy112458</i> Mock			<i>pyrpy112458</i> ABA			P value
	<i>FEZ</i>	1.086	0.861	1.053	0.253	0.304	0.333	0.0007	0.736	1.174	1.089	1.020	0.601	1.007	0.5548
	<i>SMB</i>	0.844	1.022	1.134	0.345	0.506	0.399	0.0038	0.844	1.059	1.097	0.861	1.186	0.910	0.9164
	<i>BRN2</i>	1.157	1.141	0.702	0.315	0.431	0.554	0.0261	1.303	0.784	0.913	0.945	0.729	1.235	0.8942
	<i>CEL5</i>	0.952	0.961	1.087	0.349	0.400	0.201	0.0008	1.204	0.805	0.991	0.995	1.204	1.095	0.4932
	<i>XTH5</i>	0.944	0.931	1.125	0.324	0.344	0.220	0.0007	1.109	0.873	1.019	0.857	1.052	0.773	0.3786
	<i>PE11</i>	1.213	0.965	0.822	0.464	0.365	0.418	0.0077	1.133	0.816	1.052	0.973	0.896	1.076	0.8717
	<i>RNS3</i>	1.114	1.009	0.877	0.344	0.414	0.574	0.0045	0.955	1.183	0.862	0.910	1.063	0.727	0.5033
	<i>MC9</i>	1.104	0.849	1.047	0.741	0.581	0.714	0.0248	1.057	0.868	1.075	0.754	0.954	1.034	0.4642
	<i>KIN1</i>	0.872	1.299	0.829	49.112	54.965	62.523	0.0001	1.054	1.103	0.843	1.647	1.098	1.056	0.2655

b		WT(+3MBiP) Mock			WT(+3MBiP) ABA			P value	<i>icpk</i> (+3MBiP) Mock			<i>icpk</i> (+3MBiP) ABA			P value
	<i>FEZ</i>	1.199	0.869	0.932	0.296	0.381	0.288	0.0030	0.998	1.141	0.861	0.376	0.350	0.320	0.0014
	<i>SMB</i>	0.878	0.891	1.231	0.317	0.298	0.385	0.0049	1.122	0.887	0.991	0.970	0.728	0.696	0.1402
	<i>BRN2</i>	1.249	0.901	0.850	0.429	0.438	0.565	0.0170	0.761	0.993	1.246	0.418	0.478	0.801	0.0773
	<i>CEL5</i>	0.865	1.094	1.041	0.305	0.192	0.203	0.0006	1.180	0.946	0.874	0.336	0.252	0.311	0.0019
	<i>XTH5</i>	0.905	0.792	1.303	0.198	0.243	0.209	0.0073	0.801	1.026	1.172	0.234	0.248	0.175	0.0021
	<i>PE11</i>	0.810	0.801	1.389	0.416	0.325	0.266	0.0290	0.774	1.048	1.178	0.828	0.728	1.198	0.6822
	<i>RNS3</i>	1.101	0.792	1.107	0.554	0.611	0.405	0.0169	1.010	0.862	1.128	0.666	0.933	0.789	0.1345
	<i>MC9</i>	0.857	1.203	0.940	0.403	0.699	0.601	0.0335	0.862	1.038	1.100	0.879	1.457	1.094	0.4775
	<i>KIN1</i>	0.802	0.953	1.245	50.402	40.961	51.637	0.0002	0.944	0.927	1.130	27.549	33.591	34.629	0.0002

Extended Data Fig. 7 | RT-qPCR analysis of the root cap cycle genes in response to ABA.

The analysis was conducted with 5-day-old WT and *pyrpy112458* (a) or *icpk* (b) root tips in response to ABA (10 μ M, 4 h). The gene expression levels were normalized to the expression of *UBQ10* in each sample. The gene expression level without ABA treatment was valued as 1 in WT or the mutant. The ratio of each marker gene expression was determined. The triplate sample data are presented. The average gene expression from triplicate samples was calculated and is presented in Fig. 5d and Fig. 5e. The statistical P-value was analyzed by comparing the results between Mock and ABA treatment.