

1 **SUPPLEMENTAL DATA**

2 **Supplemental Table S1.** TOP65CytK genes that overlap with As(V)-downregulated genes.  
 3 The data are supplementary to those shown in Table 1.  
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Downregulated after As(V) -1.5 h		Downregulated after As(V) -8 h	
AGI	Protein encoded	AGI	Protein encoded
At1g31320	LOB domain-containing protein 4	At1g04250	AUX/IAA transcriptional regulator family protein
At1g59940	response regulator 3	At1g10470	response regulator 4
At2g01830	CHASE domain containing histidine kinase protein	At1g13420	sulfotransferase 4B
At2g25160	cytochrome P450, family 82, subfamily F, polypeptide 1	At1g16530	ASYMMETRIC LEAVES 2-like 9
At2g34610	unknown	At1g17190	glutathione S-transferase tau 26
At2g40670	response regulator 16	At1g19050	response regulator 7
At3g44990	xyloglucan endo-transglycosylase-related 8	At1g31320	LOB domain-containing protein 4
At3g45700	Major facilitator superfamily protein	At1g59940	response regulator 3
At3g50300	HXXXD-type acyl-transferase family protein	At1g69040	ACT domain repeat 4
At3g57010	Calcium-dependent phosphotriesterase superfamily	At1g69530	expansin A1
At3g57040	response regulator 9	At1g72140	Major facilitator superfamily protein
At5g47950	HXXXD-type acyl-transferase family protein	At2g01830	CHASE domain containing histidine kinase protein
At5g60890	myb domain protein 34	At2g01890	purple acid phosphatase 8
At5g62920	response regulator 6	At2g25160	cytochrome P450, family 82, subfamily F, polypeptide 1
		At3g29250	NAD(P)-binding Rossmann-fold superfamily protein
		At3g44990	xyloglucan endo-transglycosylase-related 8
		At3g50300	HXXXD-type acyl-transferase family protein
		At3g57010	Calcium-dependent phosphotriesterase superfamily protein
		At3g57040	response regulator 9
		At4g11190	Disease resistance-responsive (dirigent-like protein) family protein
		At4g19030	NOD26-like major intrinsic protein 1
		At4g23750	cytokinin response factor 2
		At4g29690	Alkaline-phosphatase-like family protein
		At4g29700	Alkaline-phosphatase-like family protein
		At5g05860	UDP-glucosyl transferase 76C2
		At5g26260	TRAF-like family protein
		At5g47950	HXXXD-type acyl-transferase family protein
		At5g47980	HXXXD-type acyl-transferase family protein
		At5g47990	cytochrome P450, family 705, subfamily A, polypeptide 5
		At5g48000	cytochrome P450, family 708, subfamily A, polypeptide 2
		At5g48010	thalianol synthase 1
		At5g60890	myb domain protein 34

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7 **Supplemental Table S2.** Primers used for qRT-PCR analysis

AGI	Genes	Forward	Reverse
AT1G18070	<i>EF1a</i>	cccaggctgattgtgctgt	gggtggggcatccatcttgg
AT5G43350	<i>PHT1;1</i>	cctcaactctccagagaagtctta	ttcgccatttcttagagc
AT4G23100	<i>γ-ECS</i>	ttccctgtctccctgggtg	tccaagtatcttcaaccgaac
AT5G27380	<i>GSH2</i>	cccgagcatagcttaccatt	gcaatgtcctcttgggtgctc
AT5G44070	<i>PCS1</i>	tcgatctctggacgtaaattg	ttcgagcaatccaacatt
AT2G21045	<i>AtARQ1</i>	ttgatcgctggcttgaacg	ttagccacatggctgaccc
AT3G57040	<i>ARR9</i>	caaccgctgtctgatctacca	tctgcattccctactgaaacca
AT2G01830	<i>AHK4</i>	tacgctcaaaccgctcaagat	tggtactgattccaactccagc
AT2G25160	<i>CYP82F1</i>	gtctatacccaccagtcctct	tcttccatgcactcaccatcaa
AT3G63110	<i>IPT3</i>	ccaagatggatgctaaccgtg	cgacacagatctgtgcttgg
AT5G19040	<i>IPT5</i>	agttacagcgatgaccacca	ggcagagatctccggtagg
AT3G23630	<i>IPT7</i>	actcctttgtctcaaacggtgc	tgaacacttcttacttcttcgagt
AT2G41510	<i>CKX1</i>	ctgagaagcggaaattctgaac	gagtaccctgatccattaacca
AT5G56970	<i>CKX3</i>	tctcaatacacagtcaacgagga	tcgtacataaacctcttacatgg
AT4G29740	<i>CKX4</i>	ccctccattattgaccag	cgaaatagcgaacatctgtacg
AT1G75450	<i>CKX5</i>	ccatggctctcaaatagtaacg	tctgagcatctcatcacctctc
AT5G21482	<i>CKX7</i>	caccagagctagggtttg	catcgaactcgggtataactactct

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9 **Supplemental Figure S1.** Phenotypes of *ipt 3 5 7*, wild-type (Col-0), *cyp735a1 a2*,  
10 *35S:CKX1* and *ahk2 ahk3* plants grown on 12.5 μM Pi for 10 days.

11 **Supplemental Figure S2.** CK-responsive genes are downregulated in response to As(V).  
12 qRT-PCR expression analysis of *ARR9*, *AHK4* and *CYP82F1* in Col-0. Plants were grown in  
13 +Pi medium for 7 d, transferred to -Pi medium for 3 d and then to -Pi liquid medium alone  
14 (-Pi) or with 30 μM As(V) [+As(V)] for 6 h. Expression was analyzed in whole seedlings.  
15 Bars show mean ± SD (*n* = 3). \**P* < 0.01 (Student's *t*-test).

16 **Supplemental Figure S3.** As(V) sensitivity to BSO increased preferentially in cytokinin-  
17 depleted plants. Plants were grown on Johnson medium with 12.5 μM Pi in a vertical position  
18 for 5 d and then transferred to the same medium with increasing concentrations of BSO alone  
19 (top) or with 20 μM As(V) (bottom). Increase in root length was measured in wild-type  
20 (Col-0) and *35S:CKX1*-overexpressing plants 3 d after transfer. Bars show mean ± SD  
21 (*n* ≥ 15). \**P* < 0.01 (Student's *t*-test).