

Table 1 Suppl. The individual values of relative expressions of tomato *PIP* genes in dry *7B-1* mutant seeds analyzed by reverse transcription (RT)-PCR. The expressions of *PIP1;3* and *PIP2;4* were not detected in dry seeds. The relative expression was quantified against both the expression from WT seed sample (which equals 1.00), and expression of two reference genes (*GAPDH* and *EF1*). Values represent geometrical mean (of expression relative to *GAPDH* and expression relative to *EF1*).

gene	1 st exp.	2 nd exp.	3 rd exp.
<i>PIP1;1</i>	0.56	0.00	0.57
<i>PIP1;2</i>	0.44	0.93	0.97
<i>PIP1;4</i>	0.80	0.62	0.42
<i>PIP1;5</i>	0.49	1.02	0.74
<i>PIP2;1</i>	0.49	0.55	0.65
<i>PIP2;2</i>	0.47	0.00	0.18
<i>PIP2;3</i>	0.66	0.57	0.68

Table 2 Suppl. The individual expressions of investigated *PIPs* during wild type (WT, cv. Rutgers) and *7B-1* mutant seed germination and early growth in the dark or under blue-light. RNA was isolated from seeds harvested 24 h, 72 h (seedlings with radicle 1 - 3 mm long), and 96 h (seedlings with radicle 1 - 10 mm long) after sowing on MS medium. The expression was analyzed by RT-qPCR. The relative expression was relative to *PP2Acs* and *TIP41like* genes. These values were used to calculate average relative gene expressions presented in Fig. 3 Suppl. and in Fig. 4.

Stage	Gene	Dark								Blue light											
		WT				7B-1				WT				7B-1							
24	PIP1;1	0.07	0.06	0.08		0.05	0.06	0.06		0.09	0.09	0.03		0.04	0.08	0.05					
	PIP1;2	5.63	4.68	4.24		5.35	3.71	4.57		6.46	5.03	6.05		5.22	5.37	4.42					
	PIP1;3	0.05	0.04	0.06		0.02	0.02	0.03		0.04	0.03	0.02		0.03	0.03	0.04					
	PIP1;4	1.65	1.08	1.09		0.99	0.83	0.87		1.20	0.78	0.98		0.91	0.67	0.67					
	PIP1;5	8.27	6.31	5.61		7.58	7.28	6.82		6.98	5.41	5.34		7.74	7.77	7.16					
	PIP2;1	9.10	7.67	7.13		7.54	7.92	6.90		9.54	7.01	6.45		6.69	7.64	6.94					
	PIP2;2	0.35	3.32	0.18		0.21	0.21	0.12		0.26	0.14	0.17		0.21	0.14	0.12					
	PIP2;3	4.37	4.42	3.29		5.67	4.22	7.07		3.24	2.78	3.43		4.51	3.63	4.99					
72	PIP1;1	0.10	0.18	0.14		0.09	0.15	0.09		0.20	0.32	0.21		0.14	0.15	0.14					
	PIP1;2	9.24	8.76	9.81		8.69	10.37	16.67		11.05	11.32	10.81		11.70	11.80	12.86					
	PIP1;3	0.05	0.07	0.06		0.05	0.04	0.03		0.05	0.04	0.08		0.05	0.04	0.04					
	PIP1;4	1.57	1.07	1.15		1.50	1.08	1.71		1.40	0.94	1.04		1.45	0.93	1.43					
	PIP1;5	10.53	8.20	6.81		11.30	9.93	10.50		9.55	8.71	7.03		13.62	9.82	8.51					
	PIP2;1	14.14	11.05	11.71		12.17	11.43	18.91		12.03	11.22	10.73		13.88	11.07	11.68					
	PIP2;2	0.75	0.38	0.47		0.65	0.45	1.87		0.72	0.55	0.54		0.87	0.64	0.61					
	PIP2;3	6.17	4.06	4.14		4.65	5.36	4.80		6.25	3.51	4.62		0.77	4.23	3.81					
96	PIP1;1	0.07	0.05	0.08	0.01	0.02	0.09	0.10	0.13	0.03	0.02	0.31	0.13	0.37	0.09	0.06	0.25	0.15	0.32	0.07	0.05
	PIP1;2	9.44	8.52	7.88	7.11	8.00	8.30	7.92	7.03	8.14	7.41	7.67	8.96	10.04	10.50	9.86	8.98	8.68	6.43	9.94	9.04
	PIP1;3	0.68	0.45	0.85	0.54	0.20	0.47	0.31	0.64	0.24	0.65	0.29	0.27	0.49	0.45		0.53	0.22	0.51	0.30	
	PIP1;4	1.57	1.63	2.82	0.82	0.87	1.75	2.20	2.26	0.91	1.10	1.67	1.64	1.31	0.75		2.36	2.09	2.35	1.01	1.02
	PIP1;5	14.79	10.69	14.51	9.39	10.05	14.16	8.78	14.55	12.09	11.03	14.71	8.83	16.46	16.22	11.25	14.07	10.88	15.25	13.76	10.46
	PIP2;1	9.44	10.73	10.46	9.46	8.05	9.40	10.67	8.88	10.29	8.02	9.69	9.81	9.53	11.27	9.55	10.13	8.56	8.43	11.80	7.76
	PIP2;2	1.13	0.81	1.41	0.84	0.75	0.88	0.92	1.07	1.17	0.75	0.96	0.84	1.85	1.17	0.86	1.46	0.78	1.51	0.81	0.83
	PIP2;3	9.05	7.27	11.34	8.83	7.22	7.75	8.68	13.46	10.75	8.31	7.25	6.70	11.90	12.41	9.03	9.16	7.33	10.00	9.70	8.38

Table 3 Suppl. The relative expression of *PIP1;1*, *PIP1;3*, *PIP1;4* and *PIP2;2* genes in WT and *7B-1* mutant seeds harvested 24, 72, and 96 h after seed germination on MS medium in the dark (D) or under blue-light (BL). The expression was measured by RT-qPCR. The relative expression was quantified against the expression of WT seeds incubated for 24 h in the dark which is 1.00. Presented values were used to present expressions in Fig. 4 Suppl.

Genotype	Growth	Stage	<i>PIP1;1</i>				<i>PIP1;3</i>				<i>PIP1;4</i>				<i>PIP2;2</i>			
WT	D	24	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
		72	1.49	3.01	1.69	1.06	1.89	0.91	1.04	0.98	0.95	2.63	1.73	2.16				
		96	2.43	2.51	2.03	9.38	9.04	6.44	2.62	1.53	1.29	8.07	3.70	3.30				
	BL	24	1.26	1.48	0.36	0.57	0.73	0.60	0.89	0.72	0.96	0.98	0.65	0.75				
		72	2.94	5.44	2.56	0.95	1.43	1.23	0.94	0.86	0.85	3.08	2.47	2.10				
		96	5.82	7.21	5.89	9.77	5.00	3.15	2.68	1.54	1.41	3.02	3.85	2.86				
<i>7B-1</i>	D	24	0.68	0.98	0.74	0.44	0.54	0.48	0.79	0.76	0.59	0.66	0.95	0.61				
		72	1.29	2.57	1.12	1.00	1.08	0.42	1.61	0.99	0.91	1.80	2.02	1.87				
		96	1.65	1.93	2.50	7.66	7.82	7.70	2.11	2.06	1.51	6.17	4.22	2.57				
	BL	24	0.57	1.31	0.66	0.69	0.73	0.61	0.61	0.62	0.55	0.69	0.65	0.61				
		72	2.02	2.45	1.69	1.00	1.04	0.71	1.31	0.85	0.88	3.46	2.86	2.50				
		96	5.46	5.42	5.77	6.04	6.79	2.79	2.19	1.95	2.01	8.68	3.53	4.26				

Table 4 Suppl. The relative expressions of *PIP1;2*, *PIP1;4*, *PIP1;5*, *PIP2;1*, *PIP2;2*, and *PIP2;3* genes in WT and *7B-1* mutant seeds after 96-h cultivation on the basal MS medium (MS) or on medium with 30 μ M mercuric chloride (HgCl₂) in the dark (D) or blue-light (BL). The relative expression was quantified against both the expression from WT seed sample (which equals 1.00), and expression of two reference genes (*GAPDH* and *EF1*). Values represent geometrical mean of expression relative to *GAPDH* and expression relative to *EF1*.

Gene		<i>PIP1;2</i>				<i>PIP1;4</i>				<i>PIP1;5</i>				<i>PIP2;1</i>				<i>PIP2;2</i>				<i>PIP2;3</i>				
MS	D	WT	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
		7B-1	0.93	0.87	0.83	0.89	1.00	1.08	0.93	0.90	0.94	0.88	0.84	1.00	1.01	0.96	0.85	0.98	0.83	0.87	0.96	0.68	1.04	1.38	0.78	0.84
	BL	WT	0.98	1.15	1.28	0.99	1.05	1.00	0.94	0.92	1.14	1.01	0.94	0.87	1.01	0.95	0.72	1.00	1.06	0.90	1.31	0.87	1.05	1.32	0.68	0.87
		7B-1	1.02	1.18	1.60	1.15	0.96	0.93	0.92	0.95	1.01	1.03	0.98	0.94	1.05	0.93	0.86	1.20	0.71	1.18	1.14	0.73	1.01	1.32	0.77	0.95
HgCl ₂	D	WT	0.99	1.37	1.20	0.79	0.61	1.73	0.93	0.84	0.45	1.05	1.32	1.08	0.31	0.81	1.09	1.00	0.54	1.68	0.93	0.78	0.36	1.68	0.83	0.83
		7B-1	1.30	1.40	1.15	1.01	0.73	1.71	0.94	1.09	0.60	1.03	1.10	1.36	0.41	1.06	2.01	1.29	0.73	1.44	0.81	1.02	0.48	2.15	0.85	0.87
	BL	WT	2.44	1.55	2.02	0.88	2.02	1.48	1.06	1.00	1.70	1.16	1.77	1.10	1.16	0.49	1.09	1.00	2.05	1.71	1.84	1.13	1.36	2.23	0.90	0.90
		7B-1	1.23	1.61	0.91	1.10	1.01	1.40	1.04	1.14	1.19	1.12	1.30	1.19	0.81	0.91	1.94	1.43	1.43	2.22	0.87	0.82	0.95	1.76	0.84	1.15

Table 5 Suppl. The relative expressions of *PIP1;1* and *PIP1;3* genes in WT and *7B-1* mutant seeds after 96-h cultivation on the basal MS medium (MS) or on medium with 30 μ M mercuric chloride (HgCl₂) in the dark (D) or under blue-light (BL). The relative expression was quantified against the expression from sample of WT seeds incubated for 24 hours in the dark (which is 1.00).

Gene			<i>PIP1;1</i>				<i>PIP1;3</i>							
MS	D	WT	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
		<i>7B-1</i>	1.23	0.77	0.68	1.48	0.59	1.33	0.82	0.52	0.69	0.70	0.77	
	BL	WT	2.90	2.87	2.40	3.19	0.49	0.85	1.04	0.44	0.42	0.61	0.58	
		<i>7B-1</i>	2.84	2.16	2.25	3.40	0.43	1.16	0.64	0.51	0.77	0.49	0.60	
HgCl ₂	D	WT	0.85	0.84	0.46	1.09	0.38	0.33	0.08	0.27				
		<i>7B-1</i>	0.59	0.75	0.51	0.82	0.44	0.56	0.55	0.14				
	BL	WT	2.44	2.72	5.78	5.92	0.11	0.08	0.29	0.50				
		<i>7B-1</i>	1.79	1.81	1.59	5.06	0.64	0.77	0.16	0.33				

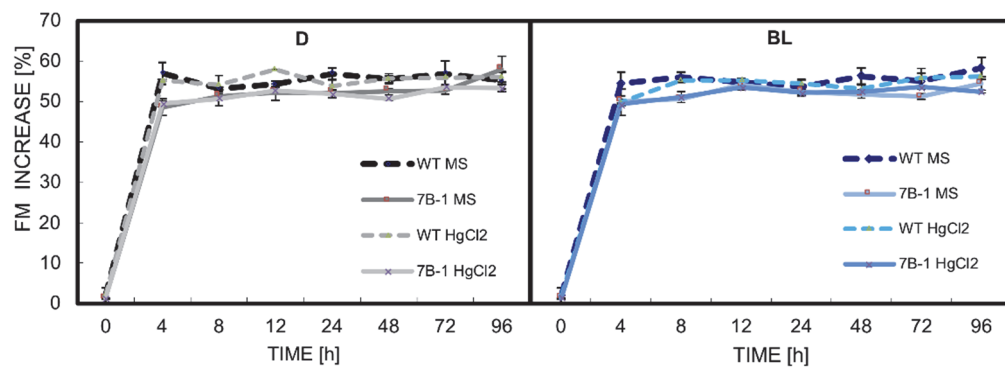


Fig. 1 Suppl. The effect of 30 μ M HgCl₂ on imbibition of water in tomato WT and 7B-1 mutant seeds incubated in the dark (D) or under blue light (BL). Means $\pm$ SEs from 2 independent experiments.

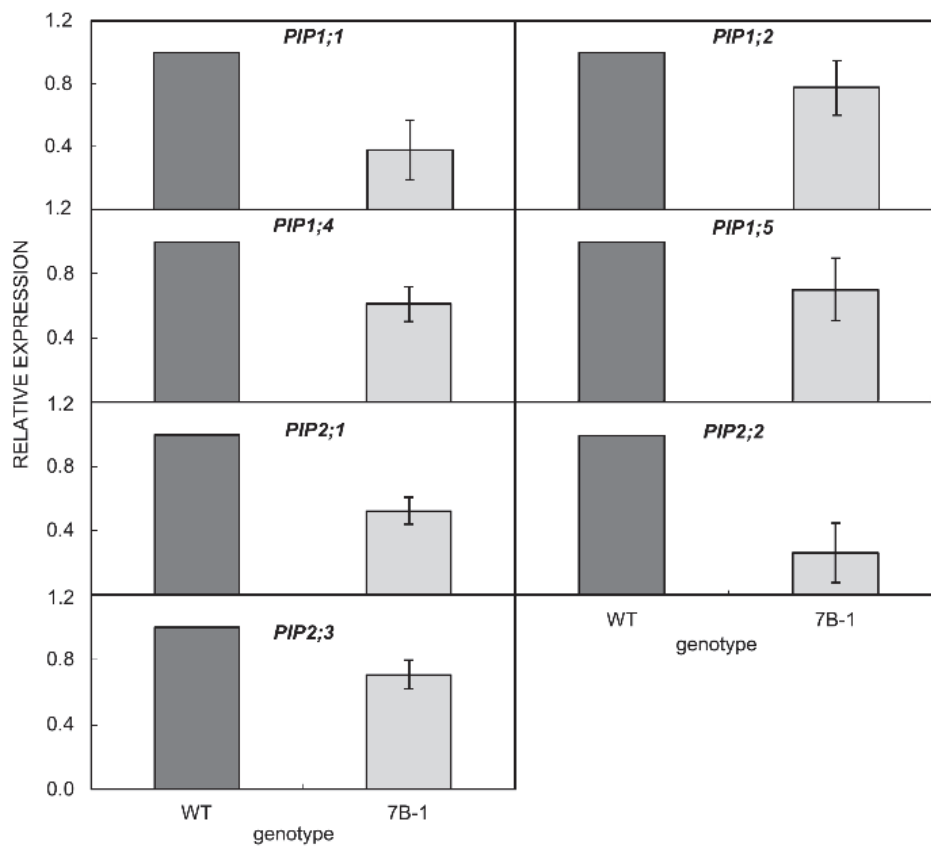


Fig. 2 Suppl. The relative expressions of tomato *PIP* genes in dry WT and 7B-1 mutant seeds analyzed by RT-PCR. The expressions of *PIP1;3* and *PIP2;4* were not detected in dry seeds. The relative expression was quantified against both the expression from WT seed sample and expression of reference genes (*GAPDH* and *EF1*). Values represent geometrical means (of expression relative to *GAPDH* and expression relative to *EF1*) $\pm$ SEs of three experiments.

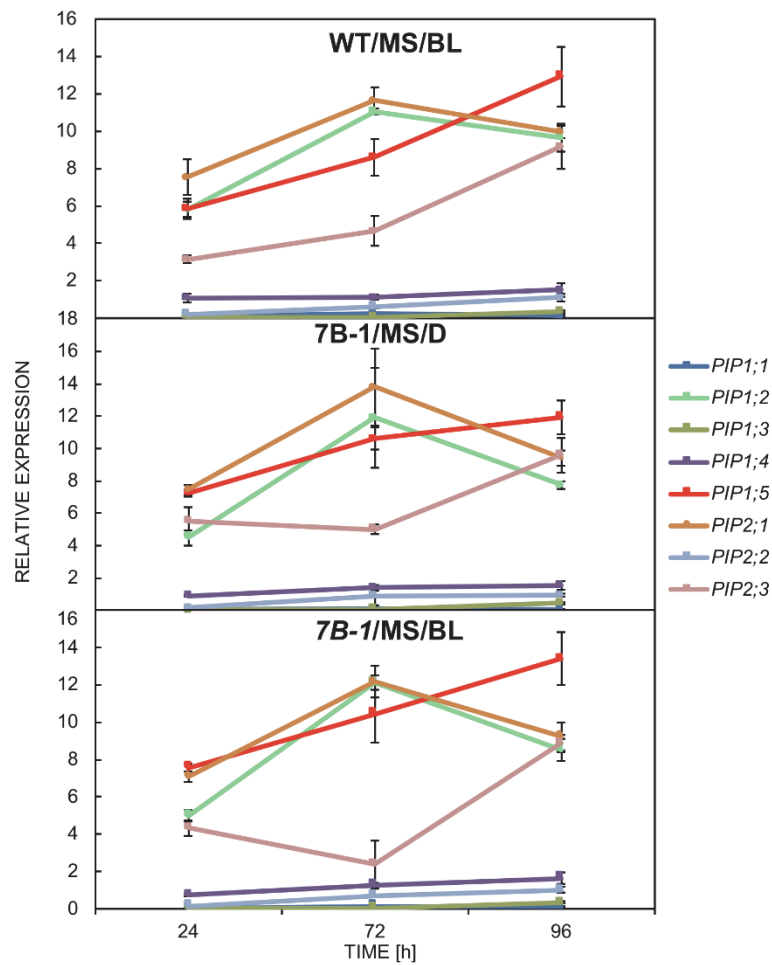


Fig. 3 Suppl. The expression patterns of investigated *PIPs* during seed germination and early growth in WT and *7B-1* mutant seeds incubated in the dark (D) or under blue light (BL). RNA was isolated from seeds harvested 24, 72, and 96 h after seed germination on MS medium. The relative expression was calculated using the expression of reference genes. Geometrical means $\pm$ SEs of three independent experiments.

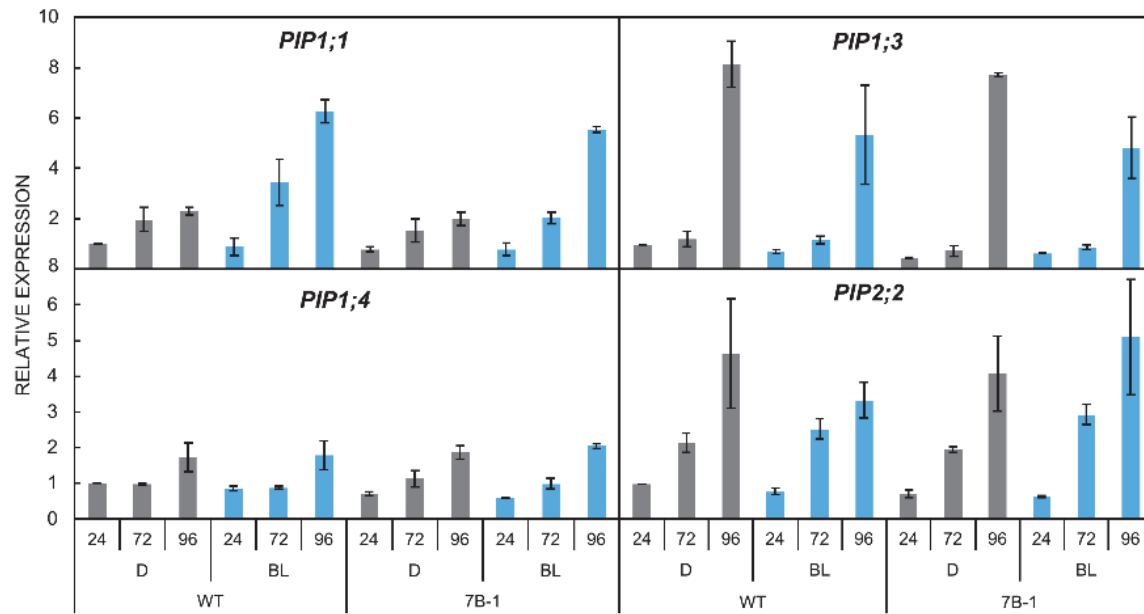


Fig. 4 Suppl. The relative expression of *PIP1;1*, *PIP1;3*, *PIP1;4*, and *PIP2;2* genes in WT and *7B-1* mutant seeds harvested 24, 72, and 96 h after germination on MS medium in the dark (D) or under blue light (BL). The relative expression was quantified against the expression from sample of WT seeds incubated on MS medium in the dark for 24 h and the expression of reference genes. Geometrical means $\pm$ SEs of three experiments.

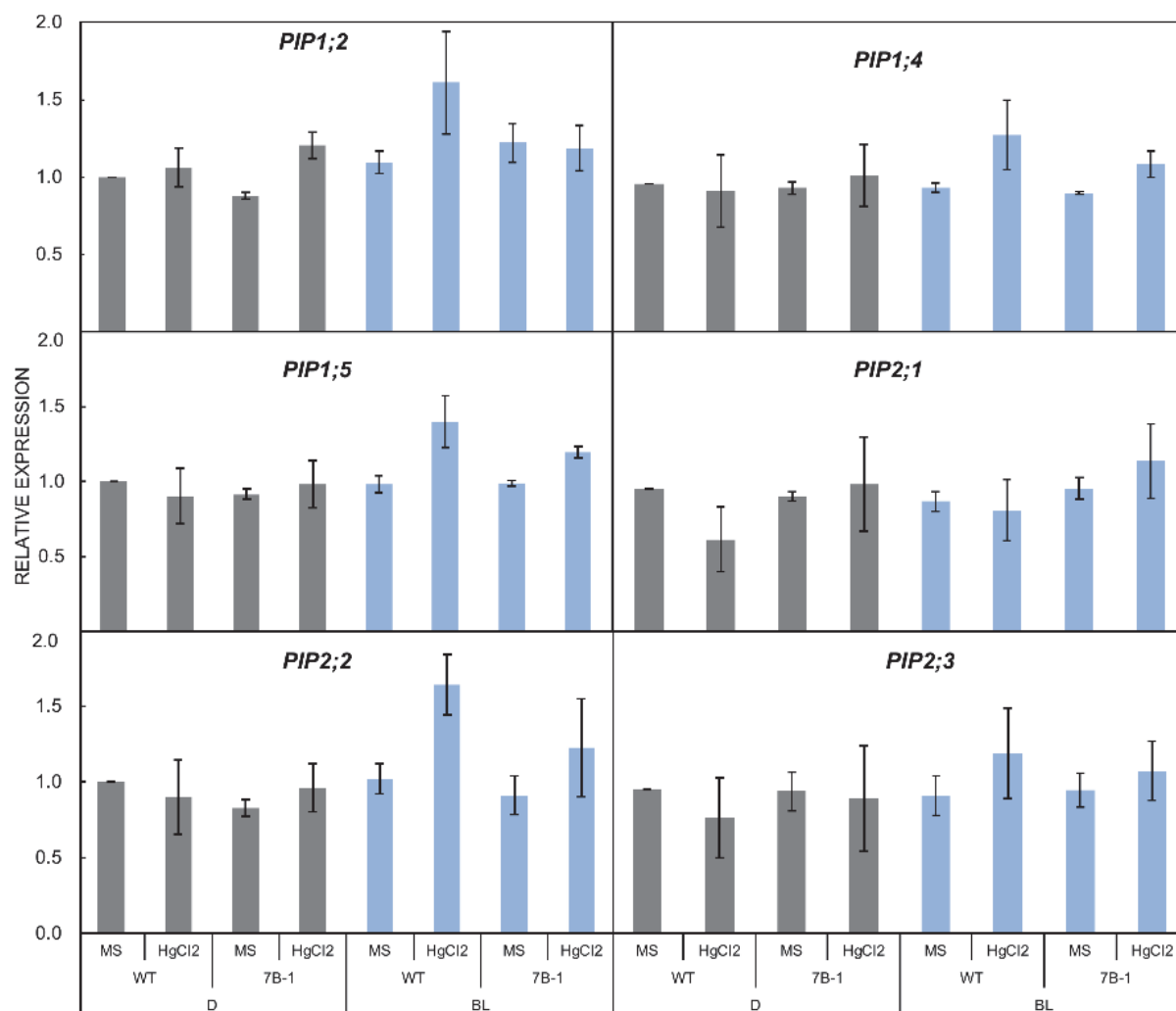


Fig. 5 Suppl. The relative expression of *PIP1;2*, *PIP1;4*, *PIP1;5*, *PIP2;1*, *PIP2;2*, and *PIP2;3* genes in WT and *7B-1* mutant seeds after 96-h germination on the basal MS medium (MS) or on MS medium with 30 μM mercuric chloride (HgCl₂) in the dark (D) or under blue light (BL). The relative expression was quantified against both the expression from WT seed sample in the dark and expression of reference genes. Geometrical means ± SEs of four experiments.