

Additional File1

Table S1. Distribution of protein spots whose intensities were altered by clinorotation or hypergravity treatment in *Arabidopsis* wild-type root tips.

Spot No	Obs.	Treatment			Spot No	Obs.	Treatment		
	Mw/ pI	V	H	G		Mw/ pI	V	H	G
9	65/5.66	NC	+	+	7	66/5.11	ND	ND	N
15	60/5.77	NC	+	+	8	66/5.28	+	+	NC
19	54/5.76	NC	+	+	10	62/5.77	+	+	+
21	54/6.00	NC	+	-	11	60/4.56	+	+	+
22	54/6.00	NC	+	+	13	54/5.34	-	-	+
23	44/6.12	NC	+	+	14	54/4.84	-	+	+
24	44/6.42	NC	+	-	16	57/6.08	-	+	-
30	45/5.72	NC	+	+	17	63/6.67	+	+	+
38	32/6.64	NC	p	p	18	52/4.50	+	-	-
39	31/6.62	NC	p	p	27	42/5.03	+	+	NC
40	31/6.63	NC	p	p	28	44/5.34	-	+	-
20	55/5.79	NC	+	NC	29	41/5.30	-	-	+
25	41/6.66	NC	+	NC	31	40/5.13	-	NC	-
26	41/6.79	NC	-	NC	32	38/5.96	-	-	+
42	29/5.01	NC	+	NC	33	36/6.80	-	-	+
46	27/5.18	NC	+	NC	34	38/6.90	-	+	-
47	25/5.73	NC	+	NC	35	32/4.74	-	+	-
53	18/6.58	NC	+	NC	37	36/4.79	+	+	+
2	73/4.95	NC	NC	+	41	29/4.85	-	+	+
3	74/5.02	NC	NC	+	43	29/5.13	-	-	+
5	78/5.61	NC	NC	+	44	29/5.17	-	-	-
36	36/5.48	NC	NC	+	45	27/5.19	+	NC	-
56	73/5.77	NC	NC	+	48	25/6.58	-	-	-
57	68/5.76	NC	NC	+	50	22/4.70	-	+	-
1	68/4.92	+	+	+	51	20/4.59	-	+	-
4	77/5.20	-	-	+	52	21/6.12	+	+	-
6	81/5.65	+	-	+	54	31/5.78	+	+	+
49	23/4.71	-	-	-					

The spot No refers to the respective gel. Obs., observed molecular weights (kDa) and isoelectric points, which were estimated from electrophoretic mobilities. +, upregulated expression; -, downregulated expression; NC, no change; N, detected only after treatment; ND, not determined; p, position changed; V, vertical clinorotation; H, horizontal clinorotation; G, hypergravity treatment.

Table S2. Distribution of protein spots whose intensities were altered by clinorotation or hypergravity treatment in *Arabidopsis* mutant (*pin2*) root tips.

Spot No	Obs. pI/Mw	Treatment			Spot No	Obs. pI/Mw	Treatment		
		V	H	G			V	H	G
9	65/5.66	NC	+	+	50	22/4.7	-	+	+
19	54/5.76	NC	+	-	51	20/4.59	+	+	-
22	54/6.00	NC	+	+	52	21/6.12	+	+	+
23	44/6.12	NC	+	+	55	72/4.85	+	+	+
30	45/5.72	NC	+	+	58	71/5.8	ND	ND	N
36	36/5.48	NC	+	+	59	59/5.11	+	+	+
74	44/5.81	NC	+	+	60	61/5.30	-	+	+
82	31/5.78	NC	+	+	61	64/5.46	+	+	+
12	58/4.56	NC	+	NC	62	63/5.50	+	+	+
16	57/6.08	NC	+	NC	63	64/6.73	-	-	-
24	44/6.42	NC	+	NC	64	63/6.76	-	-	-
47	25/5.73	NC	+	NC	65	48/4.90	-	-	+
2	73/4.95	NC	NC	+	66	45/5.09	-	-	-
3	74/5.02	NC	NC	+	67	47/5.32	-	-	-
5	78/5.61	NC	NC	+	68	45/5.39	+	NC	+
21	54/6.00	NC	NC	-	69	51/5.54	+	NC	-
38	32/6.64	NC	NC	p	70	49/5.72	-	+	-
39	31/6.62	NC	NC	p	71	45/5.68	+	+	-
40	31/6.63	NC	NC	p	72	43/5.61	-	+	-
56	73/5.77	NC	NC	+	73	43/5.63	-	-	+
57	68/5.76	NC	NC	+	75	49/6.7	-	+	+
8	66/5.28	+	-	-	77	45/6.83	-	+	+
10	62/5.77	+	+	+	78	39/4.83	+	+	+
11	60/4.56	+	+	+	79	37/5.57	+	+	+
17	63/6.67	-	-	-	80	33/5.77	-	-	-
18	52/4.50	+	+	NC	81	31/5.50	+	+	-
31	40/5.13	-	+	+	83	30/5.82	-	+	-
35	32/4.74	-	-	-	84	28/5.86	-	-	-
44	29/5.17	+	+	-	85	30/7.28	-	+	+
46	27/5.18	+	+	-	86	30/5.00	-	-	+
49	23/4.71	+	NC	-	87	27/5.61	-	-	-
					88	53/5.68	+	+	-

The spot No refers to the respective gel. Obs., observed molecular weights (kDa) and isoelectric points, which were estimated from electrophoretic mobilities. +, upregulated expression; -, downregulated expression; NC, no change; N, detected only after treatment; ND, not determined; V, vertical clinorotation; H, horizontal clinorotation; G, hypergravity treatment.

Figure S1

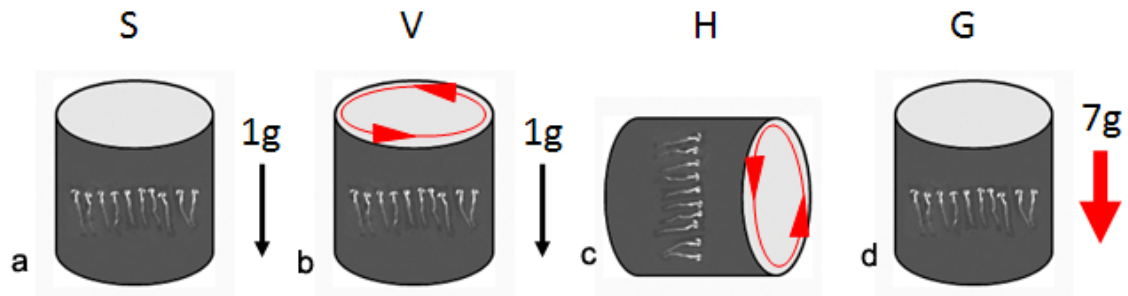


Figure S1. Schematic diagram of the experimental design for the proteomic analysis of the influence of the altered gravitational force on *Arabidopsis* seedlings. Seedlings were grown under 1g stationary condition (a), on a vertical (b) or horizontal (c) clinostat at 5 rpm for 12 h, or on a low-speed centrifuge to impose 7g hypergravity for 30 min (d). All the treatments were performed in the dark. S, 1g stationary control; V, vertical clinostat control; H, horizontal clinostat rotation; G, 7g hypergravity. Arrows indicate direction of gravity.

Figure S2

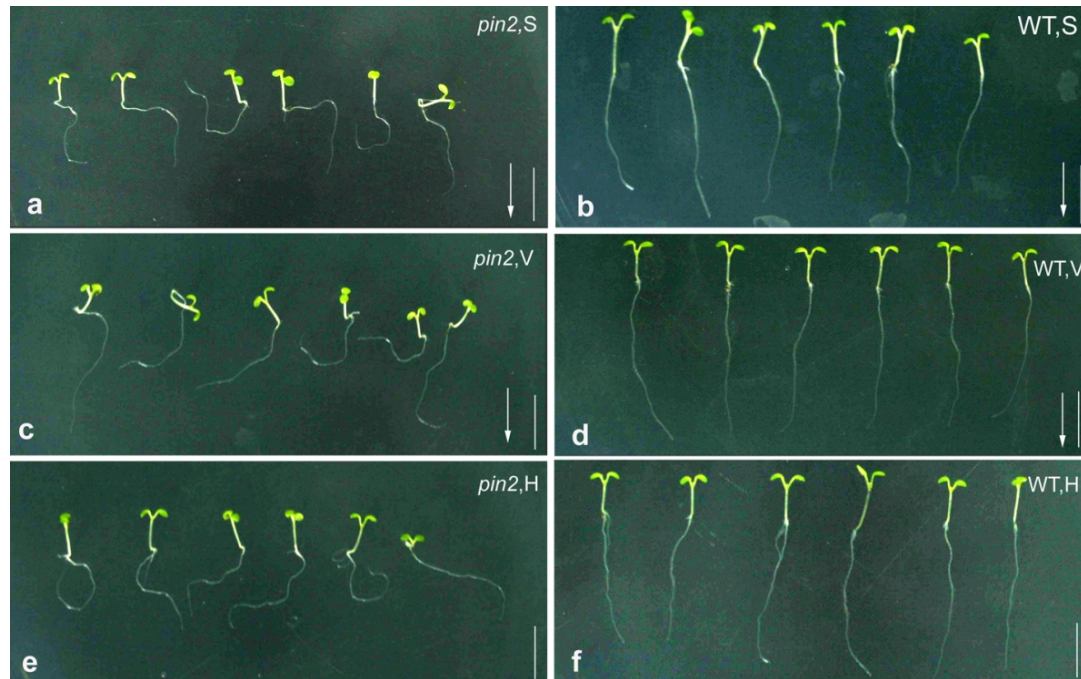


Figure S2. Six-day old *Arabidopsis pin2* mutant and wild-type (WT) seedlings grown under the 1g stationary condition (a and b) and clinorotation on a vertically (V) or horizontally (H) clinostat rotational conditions at 5 rpm for 12h (c, d, e and f). *pin2* roots are defective in gravitropic response in comparison with the normal gravitropic response of WT roots.

Figure S3

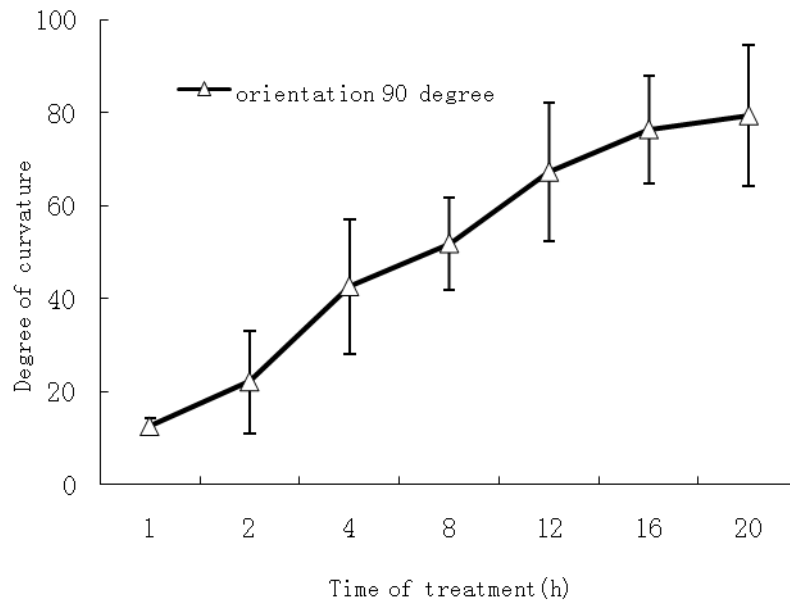


Figure S3 Statistical analysis of curvature responses of roots of six-day old *Arabidopsis* wild-type seedlings after rotated through 90 degree (from the vertical to the horizontal position). Data are mean $\pm$ SD, n >50 roots.

Figure S4

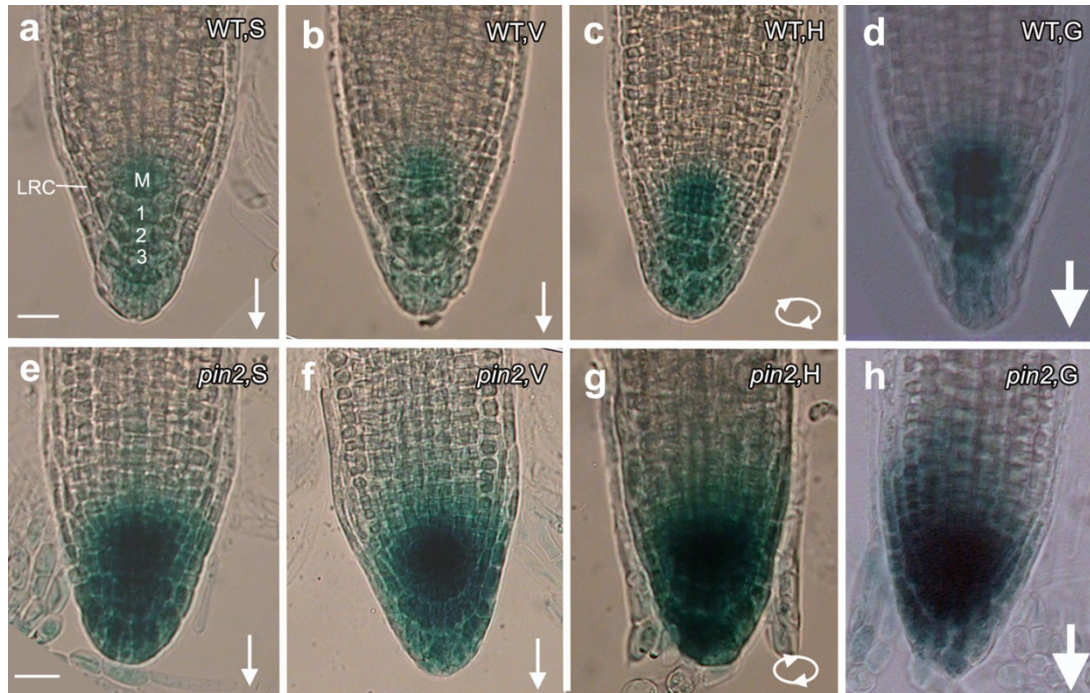


Figure S4. Expression of DR5 reporter apparently increase in *pin2* mutant root cap cells (e-f) in comparison with control of WT (a-d) under the 1g stationary condition (S), on the vertical (V) or horizontal (H) clinorotational condition at 5 rpm for 12 h, or on hypergravity (G) at 7g for 30 min . Bars=20 μ m.