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SUPPLEMENTARY MATERIAL

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SPONTANEOUS ACTION POTENTIALS IN *LUPINUS ANGUSTIFOLIUS* L.

Table S1. Parameters of spontaneous excitation in *Lupinus angustifolius* L. plants during the three-day experiments in light/dark conditions (LD).

Table S2. Parameters of spontaneous excitation in *Lupinus angustifolius* L. plants during the three-day experiments in very low light conditions (CVLL).

S1

Table S1. Parameters of spontaneous excitation in *Lupinus angustifolius* L. plants during the three-day experiments under light/dark condition (LD). The SAP interval is the time spacing between two subsequent SAPs. The AP propagation velocity was calculated by dividing the distance between the electrodes by the time necessary for an AP to move between the electrodes. (B) Basipetal SAPs are SAPs propagating down the shoot; (A) acropetal SAPs are SAPs propagating up the shoot, (AB) acropetal-basipetal SAPs are SAPs propagating up and down the stem. The number of SAPs 24 h^{-1} $plant^{-1}$ was calculated for a time-span from 12:00 p.m. to 12:00 p.m. next day.
Original recordings for Plant no 1 (sample: Plant 1 LD) are presented using *SAP Tracker* (http://circumnutation.umcs.lublin.pl/sap-tracker).

Plant number	No of SAPs	Time of day	SAPs interval (min)	Direction of propagation	SAP amplitude (mV)	Half-time (s)	SAP velocity (cm min^{-1})	Number of SAPs/24h/ plant	Number of SAPs/ three days/plant
1	1	12:42		AB	20	37	3,5		
1	2	13:59	77	A	30	23	3,5		
1	3	16:22	143	A	35	21	4,4		
1	6	18:46	144	A	40	21	4,3		
1	7	21:54	188	AB	40	24	4,3		
1	8	23:01	67	A	35	35	4,2		
1	9	0:49	108	A	20	22	4,3	13	
1	10	2:01	72	A	30	19	4,2		
1	11	4:01	120	A	30	22	4,6		
1	12	6:04	123	A	20	24	3,0		
1	13	7:51	107	A	30	21	2,9		27
1	14	9:43	112	A	30	21	2,7		
1	15	10:54	71	A	15	21	2,8		
1	16	12:25	91	A	30	24	2,8		
1	17	15:19	174	A	20	21	3,6		
1	18	17:04	105	A	10	16	3,4		
1	19	20:36	212	A	30	16	4,3	8	
1	20	22:09	93	A	30	21	4,1		
1	21	0:08	119	A	35	19	4,0		
1	22	2:49	161	A	35	24	3,5		

1	23	10:37	468	A	10	27	3,2		
1	24	16:32	355	A	10	14	3,4	6	
1	25	20:05	213	A	25	15	3,1		
1	26	21:22	77	A	30	17	3,1		
1	27	23:58	156	A	40	16	2,9		
1	28	6:13	375	A	25	17	4,2		
1	29	9:33	200	A	5				
2	1	16:48		A	45	15		3	3
2	3	20:28	220	A	36	23	3,0		
2	4	22:23	115	A	42	24	3,3		
3	1	11:15		A	45	26		1	1
4	1	12:04		B	32	81		1	1
5	1	12:46		A	30	37	3,8	5	10
5	2	14:02	76	A	26	50	3,3		
5	3	14:37	35	A	30	50	2,6		
5	4	6:58	981	A	23	47			
5	5	11:10	252	A	30	58			
5	6	12:40	90	AB	40	67	7,6	5	
5	7	17:52	312	AB	40	79	5,1		
5	8	23:59	367	AB	35	54	7,2		
5	9	6:24	385	AB	36	54	4,9		
5	10	11:53	329	B	28	67	7,3		
6	1	9:18		A	11	23	3,8	2	12
6	2	11:46	148	A	23	32	3,4		
6	3	13:37	111	A	42	30	4,2	3	
6	4	15:04	87	A	35	41	3,4		
6	5	1:11	607	A	42	26	4,3		
6	6	12:45	694	A	50	61	5,2	7	
6	7	17:17	272	A	50	50	9,0		
6	8	23:29	372	AB	50	48			
6	9	2:07	158	AB	42	48			
6	10	4:07	120	A	50	52			
6	11	5:23	76	AB	45	42	9,0		
6	12	6:50	87	AB	42	60	8,2		
7	1	7:45		A	17	57	2,6	3	9
7	2	8:41	56	A	17	32	3,0		
7	3	10:50	129	A	17	54	2,4		
7	4	12:03	73	A	15	43	2,6	4	
7	5	17:24	321	A	17	79	3,6		
7	6	2:35	551	A	21	84	3,2		
7	7	8:53	378	A	26	65	4,5		
7	8	16:47	474	A	30	76	3,9	2	
7	9	10:02	1035	A	18	56	3,7		

Average	**233**	**30**	**38**	**4,1**	**4,5**	**9,0**
Standard error	**28**	**1,4**	**2,5**	**0,2**	**0,9**	**3,4**
Median	**146**	**30,0**	**31,0**	**3,6**	**3,5**	**9,0**
Mode	76	30,0	21,0	3,0	3,0	1,0
Standard deviation	**213**	**11,2**	**20,0**	**1,6**	**3,3**	**9,1**
Sample variance	45238	126,5	400,7	2,5	10,6	83,0
Kurtosis	5	-0,7	-0,6	3,1	2,5	2,4
Slant	2	-0,1	0,7	1,9	1,4	1,4
Range	1000	45,0	70,0	6,6	12,0	26,0
Minimum	35	5,0	14,0	2,4	1,0	1,0
Maximum	1035	50,0	84,0	9,0	13,0	27,0
Sum	13042	1888,0	2349,0	222,0	63,0	63,0
Counter	56	63,0	62,0	54,0	14,0	7,0

S2

Table S2. Parameters of spontaneous excitation in *Lupinus angustifolius* L. plants during the three-day experiments under very low light condition (CVLL). The SAP interval is the time spacing between two subsequent SAPs. The AP propagation velocity was calculated by dividing the distance between the electrodes by the time necessary for an AP to move between the electrodes. (B) Basipetal SAPs are SAPs propagating down the shoot; (A) acropetal SAPs are SAPs propagating up the shoot, (AB) acropetal-basipetal SAPs are SAPs propagating up and down the stem. The number of SAPs 24 h^{-1} $plant^{-1}$ was calculated for a time-span from 12:00 p.m. to 12:00 p.m. next day. Original recordings for Plant no 2 and Plant no 3 (sample: Plant 2 CVLL and Plant 3 CVLL) are presented using *SAP Tracker* (http://circumnutation.umcs.lublin.pl/sap-tracker).

Plant number	No of SAPs	Time of day	SAPs interval (min)	Direction of propagation	SAP amplitude (mV)	Half-time (s)	SAP velocity (cm min^{-1})	Number of SAPs/24h/ plant	Number of SAPs/ three days/plant
1	1	3:45			40	23	21,2	1	5
1	2	12:45	541	A	40	18,2	10,0	3	
1	3	19:09	383	A	40	19,3	9,2		
1	4	15:23	1215	A	46	27,3	12,4		

1	5	2:57	694	A	53	24	10,0	1	
2	1	0:53		-	45	17		3	
2	2	7:23	390	-	44	18			
2	3	9:58	155	-	45	16			
2	4	12:12	133	B	43	31		16	
2	5	14:00	108	-	30	13			
2	6	18:38	278	A	44	16	3,5		
2	7	21:19	161	A	39	13	3,5		
2	8	23:16	117	A	36	14	3,5		
2	9	0:39	83	A	33	16	3,0		
2	10	1:59	80	-	28	12			
2	11	2:52	53	-	41	19			
2	12	4:33	100	A	44	17	3,0		
2	13	6:28	115	A	37	17	3,1		
2	14	7:15	47	-	40	16			
2	15	8:31	76	A	30	22	3,0		
2	16	9:12	41	-	29	20			
2	17	9:58	45	A	33	23	2,8		
2	18	10:44	46	-	31	22			
2	19	11:47	64	-	35	18			37
2	20	12:15	28	-	30	19		18	
2	21	13:23	68	A	35	22	2,9		
2	22	14:22	58	-	33	24			
2	23	16:16	115	A	32	21	3,3		
2	24	17:09	53	A	32	20	2,8		
2	25	18:13	63	A	31	19	2,6		
2	26	19:33	80	A	27	18	3,0		
2	27	20:09	35	-	28	17			
2	28	21:04	55	A	31	19	2,6		
2	29	23:45	161	A	32	20	3,5		
2	30	0:58	73	A	36	19	3,0		
2	31	2:28	91	A	37	22	3,1		
2	32	4:47	139	A	36	19	4,0		
2	33	7:12	145	A	34	22	4,0		
2	34	8:29	76	A	31	26	3,5		
2	35	9:07	38	A	30	25	3,4		
2	36	9:53	46	A	29	20	2,8		
2	37	10:23	30	A	28	20			
3	1	17:22		A	36	19	5,1	14	39
3	2	19:48	146	A	21	22	5,4		
3	3	22:14	146	A	42	21	5,2		
3	4	0:33	139	A	45	20	4,9		
3	5	1:16	43	A	36	17	4,2		

3	6	2:16	60	A	26	21	4,1		
3	7	3:30	74	A	38	21	4,1		
3	8	4:56	86	A	40	17	4,1		
3	9	6:45	109	A	34	28	4,6		
3	10	8:00	76	A	39	23	4,3		
3	11	9:15	75	A	41	18	4,3		
3	12	10:16	61	A	41	18	4,1		
3	13	10:56	40	-	38	24			
3	14	11:42	45	-	34	21			
3	15	12:19	37	-	46	12			
3	16	14:16	117	A	46	19	4,3		
3	17	16:41	146	A	30	20	4,5		
3	18	18:09	88	A	45	19	4,2		
3	19	19:01	52	A	42	26	3,9		
3	20	20:45	104	A	42	23	4,9		
3	21	21:42	57	A	38	21	4,1		
3	22	22:28	45	A	40	21	3,9	16	
3	23	0:32	124	A	52	17	4,7		
3	24	2:35	123	A	43	21	4,9		
3	25	3:46	71	A	38	19	4,5		
3	26	5:24	98	A	38	19	5,0		
3	27	5:43	19	A	28	23	3,5		
3	28	6:55	72	A	24	19	3,5		
3	29	8:00	65	A	32	25	3,6		
3	30	11:51	232	A	44	21	5,7		
3	31	13:18	86	A	44	21	4,5		
3	32	14:17	59	A	38	21	4,7		
3	33	14:55	38	A	31	23	3,6		
3	34	16:18	82	A	28	21	3,9		
3	35	18:39	141	A	43	22	5,5	9	
3	36	19:42	63	A	42	19	4,7		
3	37	21:01	79	A	43	23	4,3		
3	38	8:16	675	A	40	28	11,3		
3	39	11:23	188	A	47	25	6,0		
4	1	4:58		AB	26	23	7,0	2	
4	2	7:09	131	AB	40	19	5,9		
4	3	15:57	528	A	51	20			
4	4	21:27	330	A	60	24	6,2		
4	5	0:36	189	A	57	18	5,9	6	11
4	6	3:08	151	A	54	26			
4	7	6:11	183	AB	52	21			
4	8	8:15	124	A	50	25	5,6		
4	9	15:42	448	AB	25	17	7,2	3	

4	10	19:09	206	A	54	18			
4	11	23:18	249	A	60	27	4,4		
5	1	3:39		AB	37	21	3,6	6	13
5	2	5:12	93	AB	8	20	3,8		
5	3	6:33	81	AB	44	18	3,3		
5	4	8:10	97	AB	48	15	4,0		
5	5	10:56	166	AB	35	18	4,0		
5	6	11:41	45	AB	41	15	3,7		
5	7	12:33	52	A	22	21	2,6	6	
5	8	14:35	123	AB	40	15	3,5		
5	9	15:49	73	A	58	26	3,4		
5	10	21:19	330	AB	40	25	4,0		
5	11	5:15	476	AB	24	26	4,0		
5	12	9:39	264	AB	28	26	3,4		
5	13	6:11	1232	A	48	30	4,6	1	
6	1	9:08		A	55	14	9,6	3	18
6	2	10:15	67	A	55	18	4,9		
6	3	11:31	76	A	16	17	4,4		
6	4	13:50	139	A	50	19	6,7	14	
6	5	14:55	65	A	29	16	7,5		
6	6	16:58	123	A	35	17	7,7		
6	7	18:48	110	A	34	20	5,9		
6	8	19:36	48	A	27	21	6,5		
6	10	22:05	149	A	38	19	8,6		
6	12	23:50	105	A	33	18	4,9		
6	13	2:39	169	A	30	22	7,3		
6	14	4:02	83	A	33	20	9,2		
6	15	5:03	61	A	33	20	9,6		
6	16	5:52	49	A	21	18			
6	17	6:59	67	A	25	18	24,0		
6	18	8:17	78	A	24	22	17,1		
6	19	11:23	186	A	17	16			
6	20	13:40	137	A	25	20	9,6	1	
7	1	6:33		A	38	20	8,4	4	15
7	2	8:19	106	A	38	16	7,8		
7	3	11:02	163	A	36	19	14,0		
7	4	11:53	51	A	22	16	6,0		
7	5	12:40	47	A	41	15	7,8	11	
7	6	14:14	94	A	24	13	8,4		
7	7	16:21	127	A	21	13	5,5		
7	8	17:01	40	A	17	14	5,0		
7	10	18:31	90		8	39	11,7		
7	12	19:41	70	A	19	15	6,0		

7	13	22:05	144	A	19	15	10,0		
7	14	2:13	248	A	19	22	5,5		
7	15	2:50	37	A	22	18	5,5		
7	16	4:16	86	A	21	16	4,6		
7	17	5:07	51	A	20	22	3,8		
	Average		**144**		**35,8**	**20,0**	**5,7**	**6,9**	**19,7**
	Standard error		**16**		**0,9**	**0,3**	**0,3**	**1,3**	**5,0**
	Median		**88**		**36,0**	**20,0**	**4,5**	**5,0**	**15,0**
	Mode		67		40,0	19,0	4,0	1,0	
	Standard deviation		**180**		**10,3**	**4,0**	**3,4**	**5,8**	**13,1**
	Sample variance		32332		106,4	16,4	11,8	34,0	172,2
	Kurtosis		20		0,0	2,9	10,4	-1,0	-1,0
	Slant		4		0,0	0,9	2,8	0,7	0,8
	Range		1213		52,0	27,0	21,5	17,0	34,0
	Minimum		19		8,0	12,0	2,6	1,0	5,0
	Maximum		1232		60,0	39,0	24,0	18,0	39,0
	Sum		18882		4940,0	2763,8	644,5	138,0	138,0
	Counter		131		138,0	138,0	114,0	20,0	7,0