

# 1 The complete chloroplast genome sequence of the *Speirantha gardenii*: Comparative 2 and adaptive evolutionary analysis

3 **Supplementary Table S3.** Comparison of site models, positive selective amino acid loci and estimation of parameters for seven protein-coding genes in the four  
4 Nolinoideae species.

Protein-coding gene	Model	np	Ln L	Estimates of parameters				Model compared	LRT P-value	Positive sites
ccsA	M3	11	-1303.21110	p:	0.14148	0.12974	0.72878	M0 vs. M3	1	[]
	M0	7	-1303.21110	ω:	0.96703	0.96721	0.96727			
	M2a	10	-1303.21110	ω0:		0.96722		M1a vs. M2a	1	Not Allowed
	M1a	8	-1303.21110	p:	0.99996	0	0.00004			
				ω:	0.96718	1	1			
				p:	0.99999	0.00001				
	M8	10	-1303.21110	ω:	0.96724	1				
				p0 =	p =	q =				
				0.00138	0.00500	1.13616	M7 vs. M8	0.999999	81 N 0.642, 125 S 0.642, 223 S 0.642, 280 S 0.642, 292 I 0.636	
	(p1 =	ω =								
M7	8	-1303.21110	0.99862)	1.00000						
M8a	9	-1303.21110	p =	2.39956	q =	0.005	M8a vs. M8	0.968859739	Not Allowed	
			p0 =	p =	q = 3.33654					
			0.99999	99.00000						
infA	M3	11	-288.84309	(p1 =		ω = 1.00000		M0 vs. M3	0.003233836	[]
				0.00001)						
				p:	0.88396	0	0.11604			
	M0	7	-296.76578	ω:	0	15.06211	30.29156	M1a vs. M2a	0.003430367	Not Allowed
	ω0:		0.83559							
	M2a	10	-288.84309	p:	0.88396	0	0.11604			[]
	ω:	0	1	30.29110						
	M1a	8	-294.51818	p:	0.65850	0.34150				Not Allowed

				$\omega$ :	0	1				
				p0 =	p =	q =				
<i>ndhF</i>	M8	10	-28884309	0.88396 (p1 = 0.11604)	0.00500 $\omega$ = 30.29109	1.59251	M7 vs. M8		0.003426291	32 L 0.759, 56 I 0.881, 57 G 0.966*, 58 M 0.965*, 59 Q 0.737, 60 L 0.961*
	M7	8	-294.51937	p =	0.005	q = 0.01537				Not Allowed
	M8a	9	-294.51817	p0 = (p1 = 0.34150)	p = 0.00500	q = 99.00000 $\omega$ = 1.00000	M8a vs. M8		0.000754412	Not Allowed
	M3	11	-3025.7942	p:	0	0.98854				[]
	M0	7	-3032.0121	$\omega$ :	0	0.30817	M0 vs. M3		0.014387898	Not Allowed
	M2a	10	-3025.7942	p:	0.98854	0				[]
	M1a	8	-3030.6801	$\omega$ :	0.30816	1	M1a vs. M2a		0.007552603	Not Allowed
	M8	10	-3026.4151	p:	0.65639	0.34361				Not Allowed
	M7	8	-3030.6829	$\omega$ :	0	1				67 F 0.543, 281 F 0.568, 472 Y 0.581, 486 E 0.606, 505 N 0.571, 560 H 0.583, 574 L 0.617, 596 L 0.665, 614 S 0.616, 636 G 0.632, 675 L 0.580, 680 Q 0.628, 728 F 0.568, 732 L 0.963*, 734 F 0.931
	M8a	9	-3030.6801	p0 = (p1 = 0.34361)	p = 0.00500	q = 2.09219	M7 vs. M8		0.014012143	Not Allowed
<i>ndhF</i>	M7	8	-3030.6829	p =	0.005	q = 0.01744				Not Allowed
	M8a	9	-3030.6801	p0 = (p1 = 0.34361)	p = 0.00500	q = 1.89788 $\omega$ = 1.00000	M8a vs. M8		0.003493481	Not Allowed
	M3	11	-495.138791	p:	0.12046	0.62514				[]
	M0	7	-495.13879	$\omega$ :	0.89278	0.89279	M0 vs. M3		1	Not Allowed
<i>ndhF</i>	M2a	10	-495.13879	$\omega$ 0:		0.89279				Not Allowed
	M2a	10	-495.13879	p:	1	0	M1a vs.		1	[]

rpl20				ω:	0.89279	1	1	M2a			
	M1a	8	-495.13879	p:	0.99999	0.00001				Not Allowed	
				ω:	0.89279	1					
				p0 =	p =	q =					
	M8	10	-495.13884	0.99999	99.00000	11.93645				43 L 0.620, 80 R 0.612, 116 M 0.612, 117 K 0.603	
				(p1 =	ω =			M7 vs. M8	0.999935002		
				0.00001)	1.00000						
	M7	8	-495.13891	p =	99	q =	13.3645			Not Allowed	
				p0 =	p =	q = 99.00000					
				0.65850	0.00500						
	M8a	9	-495.13886	(p1 =				M8a vs. M8	0.994953769	Not Allowed	
				0.34150)		ω = 1.00000					
rps2	M3	11	-990.78293	p:	0	0.99482	0.00518				[]
				ω:	0	1.06492	999	M0 vs. M3	0.000077368		
	M0	7	-1002.8175	ω0:		0.37668				Not Allowed	
	M2a	10	-990.78579	p:	0.99466	0.00016	0.00518				[]
				ω:	1	1	999	M1a vs. M2a			
				p:	0.56757	0.43243					
	M1a	8	-1002.6533	ω:	0	1				Not Allowed	
				p0 =	p =	q =					
				0.95550	0.00500	1.88691					
	M8	10	-995.79569	(p1 =	ω =			M7 vs. M8	0.000472057	48 T 0.838, 59 D 0.839, 91 A 0.838, 160 E 0.840, 199 L 0.850, 237 - 0.998**	
				0.04450)	92.60324						
	M7	8	-1003.4541	p =	7.72098	q =	0.005			Not Allowed	
				p0 =	p =	q = 99.00000					
				0.56756	0.00500						
	M8a	9	-1002.6533	(p1 =				M8a vs. M8	0.000212716	Not Allowed	
				0.43244)		ω = 1.00000					
	M3	11	-939.86114	p:	0.00001	0.98991	0.01008				[]
			ω:	0	0.35239	149.119	M0 vs. M3	0.001534958			
	M0	7	-948.61840	ω0:		0.21127				Not Allowed	

<i>rps3</i>	M2a	10	-940.66971	p:	0	0.99056	0.00944	M1a vs. M2a	0.00180759	Not Allowed
				$\omega$ :	0	1	326.72277			
	M1a	8	-946.98547	p:	0.82242	0.17758				
				$\omega$ :	0	1				
				p0 =	p =	q =				
	M8	10	-940.23250	0.96563	0.00500	1.89390		M7 vs. M8	0.00067768	28 N 0.937, 30 S 0.599, 68 Q 0.584, 105 F 0.608, 106 H 0.580, 221 - 0.988*
				(p1 =	$\omega$ =					
				0.03437)	40.73123					
	M7	8	-947.52934	p =	0.02784	q =	0.1226			
				p0 =	p =	q = 1.93256				
<i>ycf1</i>	M8a	9	-946.98547	0.82242	0.00500			M8a vs. M8	0.00023781	Not Allowed
				(p1 =		$\omega$ = 1.00000				
				0.17758)						
	M3	11	-7470.8571	p:	0.82732	0.16988	0.00279	M0 vs. M3	0.000030431	Not Allowed
				$\omega$ :	0	4.94302	56.67984			
	M0	7	-7483.8992	$\omega$ 0:		0.88698				
				p:	0.98071	0.00001	0.01929	M1a vs. M2a	0.000050003	Not Allowed
	M2a	10	-7470.9807	$\omega$ :	0.5459	1	23.679			
				p:	0.45168	0.54832				
	M1a	8	-7480.8841	$\omega$ :	0	1				
<i>ycf1</i>				p0 =	p =	q =				
				0.87705	0.00500	2.13196				
	M8	10	-7471.6201	(p1 =	$\omega$ =			M7 vs. M8	0.000066777	267 Y 0.939, 271 Y 0.517, 290 D 0.520, 296 Y 0.995**, 407 L 0.523, 438 R 0.536, 447 S 0.503, 491 T 0.545, 507 Q 0.503, 558 K 0.920, 601 I 0.539, 804 L 0.523, 864 I 0.503, 921 F 0.535, 953 R 0.936, 1068 S 0.558, 1082 Q 0.927, 1096 S 0.516, 1108 R 0.935, 1162 R 0.510, 1255 L 0.559, 1340 L 0.926, 1370 Q 0.524, 1373 Q 0.503, 1375 F 0.515, 1484 Q 0.509, 1499 I 0.523, 1526 F 0.541, 1543 L 0.505, 1639 Q 0.530, 1671 H 0.925, 1672 F 0.515
				0.12295)	7.84238					

M7	8	-7481.2343	p =	0.02352	q =	0.00875			Not Allowed
M8a	9	-7480.8841	p0 = (p1 = 0.54832)	p = 0.00500	q = 1.60872		M8a vs. M8	0.000016742	Not Allowed
					$\omega = 1.00000$				

- 5
- Note:
- 6
- [ ]—No data available
- 7
- np represents the degree of freedom
- 8
- Positively selected sites (\*  $p > 95\%$ ; \*\*  $p > 99\%$ )