

**Table S5 Dataset partition with best-fitting model of molecular evolution (Partition Finder)
for BI analyses.**

Partition	Best Model	Genes
1	GTR+I+G	<i>rpoC1</i> (1st pos), <i>rps4</i> (1st pos)
2	GTR+I+G	<i>rpl36</i> (1st pos), <i>rpoC1</i> (2nd pos), <i>rps14</i> (2nd pos)
3	GTR+G	<i>psbI</i> (3rd pos), <i>rpoC1</i> (3rd pos)
4	GTR+G	<i>ycf1</i> (1st pos)
5	GTR+G	<i>ycf1</i> (2nd pos)
6	GTR+G	<i>ycf1</i> (3rd pos)
7	GTR+I+G	<i>rpl2</i> (1st pos)
8	GTR+I+G	<i>rpl2</i> (2nd pos), <i>rps12</i> (1st pos)
9	GTR+G	<i>petL</i> (1st pos), <i>rpl2</i> (3rd pos), <i>rps18</i> (2nd pos)
10	GTR+I+G	<i>rpoC2</i> (1st pos)
11	GTR+I+G	<i>rpoC2</i> (2nd pos)
12	GTR+G	<i>rpoC2</i> (3rd pos)
13	GTR+G	<i>rps2</i> (1st pos), <i>rps4</i> (2nd pos), <i>rpl23</i> (2nd pos)
14	GTR+I+G	<i>rps2</i> (2nd pos)
15	GTR+G	<i>rpoB</i> (3rd pos), <i>atpF</i> (3rd pos), <i>rps2</i> (3rd pos), <i>atpE</i> (3rd pos), <i>rps16</i> (3rd pos)
16	GTR+G	<i>ycf2</i> (1st pos)
17	GTR+G	<i>ycf2</i> (2nd pos)
18	GTR+G	<i>ycf2</i> (3rd pos)
19	GTR+G	<i>petN</i> (3rd pos), <i>rpl32</i> (1st pos), <i>rps3</i> (1st pos), <i>rpl33</i> (2nd pos)
20	GTR+I+G	<i>rps3</i> (2nd pos), <i>psbK</i> (1st pos), <i>rps16</i> (2nd pos)
21	GTR+G	<i>rps3</i> (3rd pos)
22	GTR+I+G	<i>petD</i> (1st pos), <i>ycf3</i> (1st pos), <i>petG</i> (1st pos), <i>psbI</i> (1st pos)
23	GTR+I+G	<i>ycf3</i> (2nd pos)
24	GTR+G	<i>psbK</i> (3rd pos), <i>ycf3</i> (3rd pos)
25	GTR+G	<i>rps4</i> (3rd pos), <i>psaJ</i> (3rd pos)
26	GTR+G	<i>ycf4</i> (1st pos)
27	GTR+G	<i>ycf4</i> (2nd pos)
28	GTR+G	<i>ycf4</i> (3rd pos)
29	GTR+G	<i>rps7</i> (1st pos), <i>atpH</i> (1st pos)
30	GTR+I+G	<i>petN</i> (2nd pos), <i>rps7</i> (2nd pos), <i>psbB</i> (2nd pos), <i>rps12</i> (2nd pos)
31	GTR+G	<i>rps7</i> (3rd pos)
32	GTR+G	<i>rps8</i> (1st pos)
33	GTR+G	<i>rps8</i> (2nd pos)
34	GTR+G	<i>rps8</i> (3rd pos)
35	GTR+I+G	<i>rpl14</i> (1st pos), <i>rps11</i> (1st pos)
36	GTR+G	<i>rps11</i> (2nd pos)
37	GTR+G	<i>rps11</i> (3rd pos)
38	GTR+G	<i>psbJ</i> (3rd pos), <i>rps12</i> (3rd pos)
39	GTR+I+G	<i>rpl14</i> (2nd pos)
40	GTR+G	<i>rpl14</i> (3rd pos)

Partition	Best Model	Genes
41	GTR+G	<i>rps14</i> (1st pos)
42	GTR+G	<i>rps14</i> (3rd pos)
43	GTR+G	<i>rps15</i> (1st pos)
44	GTR+G	<i>rps15</i> (2nd pos)
45	GTR+G	<i>rpl32</i> (3rd pos), <i>rps15</i> (3rd pos)
46	GTR+I+G	<i>rpl16</i> (1st pos)
47	GTR+I+G	<i>psaC</i> (1st pos), <i>psbZ</i> (1st pos), <i>rpl16</i> (2nd pos), <i>psaJ</i> (1st pos), <i>atpI</i> (1st pos)
48	GTR+I+G	<i>rpl16</i> (3rd pos)
49	GTR+G	<i>rps16</i> (1st pos)
50	GTR+G	<i>rps18</i> (1st pos)
51	GTR+G	<i>rps18</i> (3rd pos)
52	GTR+G	<i>rps19</i> (1st pos)
53	GTR+I+G	<i>rps19</i> (2nd pos), <i>psbH</i> (2nd pos)
54	GTR+I+G	<i>rps19</i> (3rd pos)
55	GTR+G	<i>rpl20</i> (1st pos), <i>rpoA</i> (2nd pos)
56	GTR+I+G	<i>rpl20</i> (2nd pos), <i>psbH</i> (1st pos), <i>psbF</i> (1st pos), <i>cemA</i> (1st pos)
57	GTR+G	<i>rpl20</i> (3rd pos)
58	GTR+G	<i>rpl22</i> (1st pos)
59	GTR+G	<i>rpl22</i> (2nd pos)
60	GTR+G	<i>rpl22</i> (3rd pos)
61	GTR+G	<i>rpl23</i> (1st pos)
62	GTR	<i>rpl23</i> (3rd pos)
63	GTR+I+G	<i>rpl32</i> (2nd pos)
64	GTR	<i>rpl33</i> (1st pos)
65	GTR+G	<i>rpoA</i> (3rd pos), <i>rpl33</i> (3rd pos)
66	GTR+I+G	<i>psaB</i> (2nd pos), <i>psaA</i> (2nd pos), <i>psbC</i> (2nd pos), <i>psbD</i> (2nd pos), <i>rpl36</i> (2nd pos), <i>psbN</i> (2nd pos)
67	GTR+I+G	<i>rpl36</i> (3rd pos), <i>ndhE</i> (3rd pos)
68	GTR+I+G	<i>accD</i> (1st pos)
69	GTR+I+G	<i>accD</i> (2nd pos)
70	GTR+G	<i>accD</i> (3rd pos)
71	GTR+I+G	<i>atpA</i> (1st pos)
72	GTR+I+G	<i>atpA</i> (2nd pos)
73	GTR+G	<i>petA</i> (3rd pos), <i>atpA</i> (3rd pos)
74	GTR+I+G	<i>atpB</i> (1st pos), <i>petA</i> (1st pos)
75	GTR+I+G	<i>atpB</i> (2nd pos), <i>petL</i> (2nd pos)
76	GTR+G	<i>petB</i> (3rd pos), <i>atpB</i> (3rd pos)
77	GTR+G	<i>atpE</i> (1st pos)
78	GTR+I+G	<i>cemA</i> (2nd pos), <i>atpE</i> (2nd pos)
79	GTR+G	<i>atpF</i> (1st pos)
80	GTR+I+G	<i>atpF</i> (2nd pos)
81	GTR+I+G	<i>psbJ</i> (2nd pos), <i>psbF</i> (2nd pos), <i>atpH</i> (2nd pos)

Partition	Best Model	Genes
82	GTR+G	<i>psbD</i> (3rd pos), <i>atpH</i> (3rd pos)
83	GTR+I+G	<i>atpI</i> (2nd pos)
84	GTR+G	<i>petD</i> (3rd pos), <i>atpI</i> (3rd pos)
85	GTR+I+G	<i>ccsA</i> (1st pos)
86	GTR+I+G	<i>ccsA</i> (2nd pos)
87	GTR+I+G	<i>ccsA</i> (3rd pos)
88	GTR+G	<i>cemA</i> (3rd pos)
89	GTR	<i>clpP</i> (1st pos)
90	GTR+G	<i>clpP</i> (2nd pos)
91	GTR+G	<i>clpP</i> (3rd pos)
92	GTR+G	<i>psbM</i> (3rd pos), <i>matK</i> (1st pos)
93	GTR+G	<i>matK</i> (2nd pos)
94	GTR+G	<i>matK</i> (3rd pos)
95	GTR+I+G	<i>ndhE</i> (1st pos)
96	GTR+G	<i>ndhE</i> (2nd pos), <i>psbK</i> (2nd pos)
97	GTR+G	<i>petA</i> (2nd pos)
98	GTR+I+G	<i>psaA</i> (1st pos), <i>petB</i> (1st pos)
99	GTR+I+G	<i>petB</i> (2nd pos)
100	GTR+I+G	<i>petD</i> (2nd pos)
101	GTR+I+G	<i>psbL</i> (2nd pos), <i>petG</i> (2nd pos)
102	GTR	<i>petG</i> (3rd pos)
103	GTR+G	<i>petL</i> (3rd pos)
104	GTR+I+G	<i>petN</i> (1st pos), <i>psbE</i> (2nd pos), <i>psbA</i> (2nd pos), <i>psbL</i> (1st pos), <i>psbI</i> (2nd pos)
105	GTR+I+G	<i>psaA</i> (3rd pos), <i>psbC</i> (3rd pos)
106	GTR+I+G	<i>psbD</i> (1st pos), <i>psaB</i> (1st pos)
107	GTR+I+G	<i>psaB</i> (3rd pos)
108	GTR+I+G	<i>psaC</i> (2nd pos)
109	GTR+G	<i>psaC</i> (3rd pos)
110	GTR+G	<i>psaI</i> (1st pos)
111	GTR	<i>psaI</i> (2nd pos)
112	GTR	<i>psaI</i> (3rd pos)
113	GTR+G	<i>psaJ</i> (2nd pos)
114	GTR+I+G	<i>psbA</i> (1st pos)
115	GTR+I+G	<i>psbA</i> (3rd pos)
116	GTR+I+G	<i>psbN</i> (1st pos), <i>psbB</i> (1st pos)
117	GTR+G	<i>psbB</i> (3rd pos)
118	GTR+I+G	<i>psbC</i> (1st pos)
119	GTR+I+G	<i>psbE</i> (1st pos)
120	GTR+G	<i>psbE</i> (3rd pos)
121	GTR+I+G	<i>psbF</i> (3rd pos)
122	GTR+G	<i>psbH</i> (3rd pos)
123	GTR+I+G	<i>psbJ</i> (1st pos)

Partition	Best Model	Genes
124	GTR	<i>psbL</i> (3rd pos)
125	GTR+G	<i>psbM</i> (1st pos)
126	GTR+G	<i>psbM</i> (2nd pos)
127	GTR+G	<i>psbN</i> (3rd pos)
128	GTR+I+G	<i>psbT</i> (1st pos)
129	GTR+I+G	<i>psbT</i> (2nd pos)
130	GTR+G	<i>psbT</i> (3rd pos)
131	GTR+I+G	<i>psbZ</i> (2nd pos)
132	GTR+I+G	<i>psbZ</i> (3rd pos)
133	GTR+I+G	<i>rbcL</i> (1st pos)
134	GTR+I+G	<i>rbcL</i> (2nd pos)
135	GTR+G	<i>rbcL</i> (3rd pos)
136	GTR+I+G	<i>rpoA</i> (1st pos)
137	GTR+I+G	<i>rpoB</i> (1st pos)
138	GTR+I+G	<i>rpoB</i> (2nd pos)