

Table S1. Bacterial endophytes isolated from stems of soybeans with different nodulation phenotypes with 3 agar media

	Isolate name	Soybean genotype	Medium	Colony color	Isolation code	Accession number	OTU
1	M005	Enrei (Nod+)	NA	White	2-1-1-1	AB461591	GP5
2	M006	Enrei (Nod+)	NA	White	2-2-1-1	AB461592	GP5
3	M007	Enrei (Nod+)	NA	Yellow	3-1-1-1	AB461593	GP8
4	M008	Enrei (Nod+)	NA	Yellow	3-1-2-1	AB461594	GP8
5	M009	Enrei (Nod+)	NA	Yellow	3-2-1-1	AB461595	GP8
6	M010	Enrei (Nod+)	NA	Yellow	3-2-2-1	AB461596	GP8
7	M011	Enrei (Nod+)	NA	Yellow	4-1-1-1	AB461597	A4
8	M012	Enrei (Nod+)	NA	Yellow	4-2-1-1	AB461598	GP8
9	M013	Enrei (Nod+)	NA	Yellow	4-2-1-2	AB461599	A4
10	M014	Enrei (Nod+)	NA	Yellow	4-2-2-1	AB461600	GP8
11	M015	Enrei (Nod+)	NA	Yellow	4-2-2-2	AB461601	A4
12	M016	Enrei (Nod+)	NA	White	4-3-1-1	AB461602	AP8
13	M017	En1282 (Nod-)	NA	White	1-1-1-1	AB461603	GP9
14	M018	En1282 (Nod-)	NA	White	1-2-1-1	AB461604	GP9
15	M019	En1282 (Nod-)	NA	Yellow	1-2-2-1	AB461605	GP5
16	M020	En1282 (Nod-)	NA	White	2-1-1-1	AB461606	GP9
17	M021	En1282 (Nod-)	NA	White	2-1-2-1	AB461607	GP9
18	M022	En1282 (Nod-)	NA	White	2-2-1-1	AB461608	GP9
19	M023	En1282 (Nod-)	NA	Yellow	2-2-2-1	AB461609	GP5
20	M024	Enrei (Nod+)	PDA	White	1-1-1-1	AB461610	GP9
21	M025	Enrei (Nod+)	PDA	White	1-2-1-1	AB461611	GP9
22	M026	Enrei (Nod+)	PDA	Yellow	3-1-1-1	AB461612	GP8
23	M027	Enrei (Nod+)	PDA	Yellow	3-2-1-1	AB461613	GP8
24	M029	Enrei (Nod+)	PDA	Orange	4-1-1-1	AB461614	A4
25	M030	Enrei (Nod+)	PDA	Orange	4-1-2-1	AB461615	A4
26	M031	Enrei (Nod+)	PDA	Orange	4-2-1-1	AB461616	A4
27	M032	Enrei (Nod+)	PDA	Orange	4-2-2-1	AB461617	A4
28	M033	En1282 (Nod-)	PDA	White	1-1-1-1	AB461618	GP9
29	M034	En1282 (Nod-)	PDA	White	1-1-2-1	AB461619	GP9
30	M035	En1282 (Nod-)	PDA	Yellow	1-2-1-1	AB461620	GP6
31	M036	En1282 (Nod-)	PDA	Yellow	1-2-2-1	AB461621	GP6
32	M037	En1282 (Nod-)	PDA	Yellow	2-1-1-1	AB461622	GP6
33	M038	En1282 (Nod-)	PDA	Yellow	2-1-2-1	AB461623	GP6
34	M039	En1282 (Nod-)	PDA	White	2-2-1-1	AB461624	GP9
35	M043	Enrei (Nod+)	R2A	Colorless	2-1-1-1	AB461625	GP5
36	M044	Enrei (Nod+)	R2A	Colorless	2-1-2-1	AB461626	GP5
37	M045	Enrei (Nod+)	R2A	Colorless	2-2-2-1	AB461627	GP5
38	M046	Enrei (Nod+)	R2A	Colorless	2-2-3-1	AB461628	GP5
39	M047	Enrei (Nod+)	R2A	Yellow	3-1-1-1	AB461629	GP8
40	M048	Enrei (Nod+)	R2A	Yellow	3-1-2-1	AB461630	GP8
41	M049	Enrei (Nod+)	R2A	Yellow	3-2-1-1	AB461631	GP8
42	M050	Enrei (Nod+)	R2A	Yellow	4-1-1-1	AB461632	A4
43	M051	Enrei (Nod+)	R2A	Yellow	4-2-1-1	AB461633	GP8
44	M052	Enrei (Nod+)	R2A	White	4-3-1-1	AB461634	AP8
45	M053	Enrei (Nod+)	R2A	Yellow	4-3-2-1	AB461635	A4
46	M055	En1282 (Nod-)	R2A	Colorless	1-1-1-1	AB461636	GP9
47	M056	En1282 (Nod-)	R2A	Colorless	1-2-1-1	AB461637	GP9
48	M057	En1282 (Nod-)	R2A	Colorless	1-2-2-1	AB461638	GP9
49	M058	En1282 (Nod-)	R2A	Colorless	2-1-1-1	AB461639	GP9
50	M059	En1282 (Nod-)	R2A	Colorless	2-1-2-1	AB461640	GP9

Table S1. Continued.

51	M060	En1282 (Nod-)	R2A	Colorless	2-2-1-1	AB461641	GP9
52	M061	En1282 (Nod-)	R2A	Colorless	2-2-2-1	AB461642	GP9
53	M101	Enrei (Nod+)	PDA	White	U_5-1-1-1-1	AB461643	GP5
54	M102	Enrei (Nod+)	PDA	White	U_5-2-1-1-1	AB461644	GP5
55	M103	Enrei (Nod+)	PDA	White	U_6-1-1-1-1	AB461645	GP3
56	M107	Enrei (Nod+)	PDA	White	L_5-1-1-1-1	AB461646	GP3
57	M108	Enrei (Nod+)	PDA	White	L_5-1-2-1-1	AB461647	GP3
58	M109	Enrei (Nod+)	PDA	White	L_5-2-1-1-1	AB461648	GP5
59	M113	Enrei (Nod+)	NA	White	U_5-2-1-1-1	AB461649	GP2
60	M114	Enrei (Nod+)	NA	Yellow	U_5-2-1-2-1	AB461650	GP7
61	M115	Enrei (Nod+)	NA	Yellow	U_5-2-1-3-1	AB461651	GP9
62	M116	Enrei (Nod+)	NA	Yellow	U_6-1-1-1-1	AB461652	F2
63	M117	Enrei (Nod+)	NA	Yellow	U_6-1-2-1-1	AB461653	GP8
64	M118	Enrei (Nod+)	NA	Yellow	U_6-2-1-1-1	AB461654	A5
65	M119	Enrei (Nod+)	NA	Yellow	L_5-1-1-1-1	AB461655	GP9
66	M120	Enrei (Nod+)	NA	White	L_5-2-1-1-1	AB461656	AP9
67	M121	Enrei (Nod+)	NA	Yellow	L_5-2-2-1-1	AB461657	GP9
68	M122	Enrei (Nod+)	NA	Yellow	L_6-1-1-1-1	AB461658	B7
69	M123	Enrei (Nod+)	NA	White	L_6-1-2-1-1	AB461659	GP5
70	M125	Enrei (Nod+)	NA	White	L_6-2-2-1-1	AB461660	GP10
71	M126	Enrei (Nod+)	R2A	White	U_5-1-1-1-1	AB461661	B7
72	M127	Enrei (Nod+)	R2A	White	U_5-1-2-1-1	AB461662	GP5
73	M128	Enrei (Nod+)	R2A	Yellow	U_5-2-1-1-1	AB461663	A5
74	M129	Enrei (Nod+)	R2A	Yellow	U_5-2-2-1-1	AB461664	A5
75	M130	Enrei (Nod+)	R2A	Yellow	U_5-2-3-1-1	AB461665	GP9
76	M131	Enrei (Nod+)	R2A	Yellow	U_6-1-1-1-1	AB461666	A4
77	M133	Enrei (Nod+)	R2A	Yellow	U_6-2-2-1-1	AB461667	B5
78	M134	Enrei (Nod+)	R2A	Yellow	L_5-1-1-1-1	AB461668	GP5
79	M135	Enrei (Nod+)	R2A	White	L_5-2-1-1-1	AB461669	GP10
80	M136	Enrei (Nod+)	R2A	White	L_5-2-2-1-1	AB461670	GP2
81	M137	Enrei (Nod+)	R2A	Yellow	L_5-2-3-1-1	AB461671	GP2
82	M138	Enrei (Nod+)	R2A	White	L_5-2-3-2-1	AB461672	AP9
83	M140	Enrei (Nod+)	R2A	White	L_6-1-2-1-1	AB461673	GP9
84	M141	Enrei (Nod+)	R2A	Yellow	L_6-1-3-1-1	AB461674	B7
85	M142	Enrei (Nod+)	R2A	White	L_6-1-4-1-1	AB461675	GP9
86	M143	Enrei (Nod+)	R2A	Yellow	L_6-1-5-1-1	AB461676	B7
87	M144	Enrei (Nod+)	R2A		L_6-1-6-1-1	AB461677	GP3
88	M145	Enrei (Nod+)	R2A	White	L_6-2-1-1-1	AB461678	GP7
89	M146	Enrei (Nod+)	R2A	Yellow	L_6-2-2-1-1	AB461679	B4
90	M201	En1282 (Nod-)	PDA	White	U_5-1-1-1-1	AB461680	F2
91	M202	En1282 (Nod-)	PDA	White	U_5-2-1-1-1	AB461681	F2
92	M204	En1282 (Nod-)	PDA	Brown	U_6-2-1-1-1	AB461682	F2
93	M205	En1282 (Nod-)	PDA	White	L_5-1-1-1-1	AB461683	GP5
94	M206	En1282 (Nod-)	PDA	White	L_5-2-1-1-1	AB461684	GP5
95	M207	En1282 (Nod-)	PDA	Yellow	L_6-1-1-1-1	AB461685	AP2
96	M208	En1282 (Nod-)	PDA	White	L_6-2-1-1-1	AB461686	AP9
97	M209	En1282 (Nod-)	PDA	White	L_6-2-2-1-1	AB461687	AP9
98	M210	En1282 (Nod-)	NA	White	U_5-1-1-1-1	AB461688	F2
99	M211	En1282 (Nod-)	NA	White	U_5-1-2-1-1	AB461689	F2
100	M212	En1282 (Nod-)	NA	Yellow	U_5-1-3-1-1	AB461690	GP8
101	M213	En1282 (Nod-)	NA	Colorless	U_5-1-4-1-1	AB461691	GP2
102	M214	En1282 (Nod-)	NA	Yellow	U_5-2-1-1-1	AB461692	GP8
103	M215	En1282 (Nod-)	NA		U_6-1-1-1-1	AB461693	A4
104	M216	En1282 (Nod-)	NA		U_6-2-1-1-1	AB461694	A4

Table S1. Continued.

105	M217	En1282 (Nod-)	NA	White	L_5-1-1-1-1	AB461695	GP5
106	M218	En1282 (Nod-)	NA	White	L_5-2-1-1-1	AB461696	GP5
107	M219	En1282 (Nod-)	NA	Yellow	L_5-2-2-1-1	AB461697	B6
108	M221	En1282 (Nod-)	NA	Yellow	L_5-2-4-1-1	AB461698	AP2
109	M222	En1282 (Nod-)	NA	White	L_6-1-1-1-1	AB461699	AP9
110	M223	En1282 (Nod-)	R2A	Yellow	U_5-1-1-1-1	AB461700	AP2
111	M224	En1282 (Nod-)	R2A	White	U_5-1-2-1-1	AB461701	F2
112	M225	En1282 (Nod-)	R2A	Yellow	U_5-1-3-1-1	AB461702	AP3
113	M226	En1282 (Nod-)	R2A	White	U_5-2-1-1-1	AB461703	A4
114	M227	En1282 (Nod-)	R2A	Yellow	U_5-2-2-1-1	AB461704	A3
115	M228	En1282 (Nod-)	R2A	Yellow	U_5-2-3-1-1	AB461705	AP3
116	M229	En1282 (Nod-)	R2A	Yellow	U_5-2-4-1-1	AB461706	B6
117	M231	En1282 (Nod-)	R2A		U_6-1-1-1-1	AB461707	AP5
118	M232	En1282 (Nod-)	R2A	White	L_5-1-1-1-1	AB461708	GP5
119	M233	En1282 (Nod-)	R2A	White	L_5-1-2-1-1	AB461709	GP5
120	M234	En1282 (Nod-)	R2A	Yellow	L_5-2-1-1-1	AB461710	AP2
121	M235	En1282 (Nod-)	R2A	White	L_5-2-2-1-1	AB461711	GP5
122	M236	En1282 (Nod-)	R2A	Yellow	L_5-2-3-1-1	AB461712	AP2
123	M237	En1282 (Nod-)	R2A	White	L_6-1-1-1-1	AB461713	AP9
124	M238	En1282 (Nod-)	R2A	White	L_6-2-1-1-1	AB461714	AP9
125	M301	En1314 (Nod-)	PDA	White	L_5-1-1-1-1	AB461715	AP2
126	M302	En1314 (Nod-)	PDA	Yellow	L_5-1-2-1-1	AB461716	GP2
127	M303	En1314 (Nod-)	PDA	White	L_5-2-1-1-1	AB461717	GP1
128	M305	En1314 (Nod-)	PDA	White	L_6-1-1-1-1	AB461718	GP6
129	M306	En1314 (Nod-)	PDA	White	L_6-2-1-1-1	AB461719	GP10
130	M307	En1314 (Nod-)	NA	Yellow	U_5-1-1-1-1	AB461720	A4
131	M308	En1314 (Nod-)	NA	Yellow	U_5-1-2-1-1	AB461721	A4
132	M309	En1314 (Nod-)	NA	Brown	U_5-2-1-1-1	AB461722	F2
133	M310	En1314 (Nod-)	NA	Brown	U_5-2-2-1-1	AB461723	F2
134	M311	En1314 (Nod-)	NA		U_6-1-1-1-1	AB461724	A4
135	M312	En1314 (Nod-)	NA		U_6-2-1-1-1	AB461725	A3
136	M313	En1314 (Nod-)	NA	White	L_5-1-1-1-1	AB461726	GP9
137	M314	En1314 (Nod-)	NA	Yellow	L_5-2-1-1-1	AB461727	AP2
138	M317	En1314 (Nod-)	NA		L_6-1-1-1-1	AB461728	A1
139	M318	En1314 (Nod-)	NA		L_6-1-2-1-1	AB461729	AP7
140	M319	En1314 (Nod-)	NA		L_6-2-1-1-1	AB461730	AP9
141	M320	En1314 (Nod-)	R2A	Yellow	U_5-1-1-1-1	AB461731	AP4
142	M321	En1314 (Nod-)	R2A	Yellow	U_5-2-1-1-1	AB461732	A4
143	M322	En1314 (Nod-)	R2A	Pink	U_5-2-2-1-1	AB461733	AP6
144	M323	En1314 (Nod-)	R2A	Yellow	U_6-1-1-1-1	AB461734	AP3
145	M325	En1314 (Nod-)	R2A	White	U_6-2-2-1-1	AB461735	F5
146	M326	En1314 (Nod-)	R2A	Pink	L_5-1-1-1-1	AB461736	B2
147	M328	En1314 (Nod-)	R2A	Colorless	L_5-1-2-1-1	AB461737	BP3
148	M330	En1314 (Nod-)	R2A	Yellow	L_6-1-1-1-1	AB461738	AP3
149	M331	En1314 (Nod-)	R2A	Yellow	L_6-1-2-1-1	AB461739	A4
150	M332	En1314 (Nod-)	R2A	Colorless	L_6-2-1-1-1	AB461740	BP5
151	M333	En1314 (Nod-)	R2A	Yellow	L_6-2-2-1-1	AB461741	GP6
152	M334	En1314 (Nod-)	R2A	White	L_6-2-3-1-1	AB461742	AP8
153	M335	En1314 (Nod-)	R2A		L_6-2-3-1-2	AB461743	AP8
154	M401	En6500 (Nod++)	PDA	White	U_5-1-1-1-1	AB461744	GP5
155	M402	En6500 (Nod++)	PDA	White	U_5-2-1-1-1	AB461745	GP6
156	M403	En6500 (Nod++)	PDA	White	U_6-1-1-1-1	AB461746	F2
157	M404	En6500 (Nod++)	PDA	White	U_6-2-1-1-1	AB461747	F6
158	M405	En6500 (Nod++)	PDA	White	L_5-1-1-1-1	AB461748	GP5

Table S1. Continued.

159	M406	En6500 (Nod++)	PDA	White	L_5-1-2-1-1	AB461749	GP5
160	M407	En6500 (Nod++)	PDA	White	L_5-2-1-1-1	AB461750	GP3
161	M408	En6500 (Nod++)	PDA	White	L_6-1-1-1-1	AB461751	GP5
162	M410	En6500 (Nod++)	PDA	Colorless	L_6-1-3-1-1	AB461752	BP2
163	M411	En6500 (Nod++)	PDA	White	L_6-2-1-1-1	AB461753	GP3
164	M412	En6500 (Nod++)	NA	Yellow	U_5-1-1-1-1	AB461754	A5
165	M413	En6500 (Nod++)	NA	Yellow	U_5-1-2-1-1	AB461755	AP1
166	M414	En6500 (Nod++)	NA	Yellow	U_5-2-1-1-1	AB461756	A2
167	M415	En6500 (Nod++)	NA	Colorless	U_5-2-2-1-1	AB461757	BP2
168	M416	En6500 (Nod++)	NA	Yellow	U_6-1-1-1-1	AB461758	A4
169	M417	En6500 (Nod++)	NA	Pink	U_6-1-2-1-1	AB461759	AP5
170	M418	En6500 (Nod++)	NA	Colorless	U_6-2-1-1-1	AB461760	F4
171	M419	En6500 (Nod++)	NA	Brown	U_6-2-2-1-1	AB461761	F2
172	M420	En6500 (Nod++)	NA	Yellow	L_5-1-1-1-1	AB461762	GP2
173	M422	En6500 (Nod++)	NA	Yellow	L_5-1-3-1-1	AB461763	GP2
174	M423	En6500 (Nod++)	NA	White	L_5-2-1-1-1	AB461764	GP5
175	M424	En6500 (Nod++)	NA	Yellow	L_5-2-2-1-1	AB461765	GP2
176	M425	En6500 (Nod++)	NA	White	L_6-1-1-1-1	AB461766	GP5
177	M426	En6500 (Nod++)	NA	White	L_6-1-2-1-1	AB461767	GP5
178	M427	En6500 (Nod++)	NA	White	L_6-1-3-1-1	AB461768	A4
179	M428	En6500 (Nod++)	NA	White	L_6-2-1-1-1	AB461769	B1
180	M429	En6500 (Nod++)	NA	White	L_6-2-2-1-1	AB461770	GP5
181	M430	En6500 (Nod++)	NA	Yellow	L_6-2-3-1-1	AB461771	A4
182	M431	En6500 (Nod++)	R2A	Yellow	U_5-1-1-1-1	AB461772	GP8
183	M432	En6500 (Nod++)	R2A	Yellow	U_5-2-1-1-1	AB461773	GP2
184	M433	En6500 (Nod++)	R2A	White	U_5-2-2-1-1	AB461774	GP9
185	M434	En6500 (Nod++)	R2A	Yellow	U_6-1-1-1-1	AB461775	A4
186	M435	En6500 (Nod++)	R2A	Yellow	U_6-2-1-1-1	AB461776	A4
187	M436	En6500 (Nod++)	R2A	Yellow	U_6-2-2-1-1	AB461777	F6
188	M438	En6500 (Nod++)	R2A	Yellow	L_5-1-1-1-1	AB461778	GP7
189	M439	En6500 (Nod++)	R2A	White	L_5-1-2-1-1	AB461779	GP2
190	M442	En6500 (Nod++)	R2A	Yellow	L_5-2-3-1-1	AB461780	BP1
191	M443	En6500 (Nod++)	R2A	Yellow	L_6-1-1-1-1	AB461781	B7
192	M444	En6500 (Nod++)	R2A	White	L_6-1-2-1-1	AB461782	GP7
193	M445	En6500 (Nod++)	R2A	White	L_6-1-3-1-1	AB461783	GP2
194	M446	En6500 (Nod++)	R2A	White	L_6-1-4-1-1	AB461784	A4
195	M447	En6500 (Nod++)	R2A	White	L_6-2-1-1-1	AB461785	A4
196	M448	En6500 (Nod++)	R2A	White	L_6-2-2-1-1	AB461786	A2
197	M449	En6500 (Nod++)	R2A	White	L_6-2-3-1-1	AB461787	A4
198	M450	En6500 (Nod++)	R2A	Yellow	L_6-2-4-1-1	AB461788	B7
199	M502	Sakukei 4 (Nod++)	PDA	White	U_6-1-1-1-1	AB461789	GP5
200	M503	Sakukei 4 (Nod++)	PDA	Yellow	U_6-2-1-1-1	AB461790	GP6
201	M504	Sakukei 4 (Nod++)	PDA	Yellow	U_6-2-2-1-1	AB461791	GP6
202	M506	Sakukei 4 (Nod++)	PDA	White	L_5-2-1-1-1	AB461792	GP5
203	M507	Sakukei 4 (Nod++)	PDA	White	L_6-1-1-1-1	AB461793	GP5
204	M508	Sakukei 4 (Nod++)	PDA	White	L_6-2-1-1-1	AB461794	GP5
205	M509	Sakukei 4 (Nod++)	NA	Colorless	U_5-1-1-1-1	AB461795	GP3
206	M510	Sakukei 4 (Nod++)	NA	White	U_5-2-1-1-1	AB461796	GP2
207	M511	Sakukei 4 (Nod++)	NA	White	U_5-2-2-1-1	AB461797	GP5
208	M512	Sakukei 4 (Nod++)	NA	Colorless	U_5-2-3-1-1	AB461798	GP5
209	M513	Sakukei 4 (Nod++)	NA	Yellow	U_6-1-1-1-1	AB461799	GP6
210	M514	Sakukei 4 (Nod++)	NA	Colorless	U_6-1-2-1-1	AB461800	GP6
211	M515	Sakukei 4 (Nod++)	NA	White	U_6-2-1-1-1	AB461801	GP4
212	M516	Sakukei 4 (Nod++)	NA	Yellow	L_5-1-1-1-1	AB461802	GP9

Table S1. Continued.

213	M517	Sakukei 4 (Nod++)	NA	Yellow	L_5-1-2-1-1	AB461803	A4
214	M518	Sakukei 4 (Nod++)	NA	Yellow	L_5-1-3-1-1	AB461804	A4
215	M519	Sakukei 4 (Nod++)	NA	Yellow	L_5-1-4-1-1	AB461805	B3
216	M520	Sakukei 4 (Nod++)	NA	Yellow	L_5-2-1-1-1	AB461806	GP2
217	M522	Sakukei 4 (Nod++)	NA	White	L_6-1-1-1-1	AB461807	GP7
218	M523	Sakukei 4 (Nod++)	NA	White	L_6-1-2-1-1	AB461808	GP5
219	M524	Sakukei 4 (Nod++)	NA	White	L_6-1-3-1-1	AB461809	GP5
220	M525	Sakukei 4 (Nod++)	NA	White	L_6-2-1-1-1	AB461810	GP3
221	M526	Sakukei 4 (Nod++)	R2A	White	U_5-1-1-1-1	AB461811	GP7
222	M527	Sakukei 4 (Nod++)	R2A	Yellow	U_5-1-2-1-1	AB461812	F1
223	M528	Sakukei 4 (Nod++)	R2A	White	U_5-1-3-1-1	AB461813	GP5
224	M529	Sakukei 4 (Nod++)	R2A	Colorless	U_5-2-1-1-1	AB461814	GP5
225	M530	Sakukei 4 (Nod++)	R2A	Colorless	U_5-2-2-1-1	AB461815	GP5
226	M531	Sakukei 4 (Nod++)	R2A	White	U_5-2-3-1-1	AB461816	F4
227	M532	Sakukei 4 (Nod++)	R2A	White	U_5-2-3-1-2	AB461817	F4
228	M533	Sakukei 4 (Nod++)	R2A	White	U_6-1-1-1-1	AB461818	F3
229	M534	Sakukei 4 (Nod++)	R2A	Colorless	U_6-1-2-1-1	AB461819	BP4
230	M535	Sakukei 4 (Nod++)	R2A	White	U_6-1-3-1-1	AB461820	F3
231	M536	Sakukei 4 (Nod++)	R2A	Yellow	U_6-2-1-1-1	AB461821	GP6
232	M537	Sakukei 4 (Nod++)	R2A	Yellow	U_6-2-2-1-1	AB461822	GP9
233	M538	Sakukei 4 (Nod++)	R2A	White	L_5-1-1-1-1	AB461823	GP2
234	M539	Sakukei 4 (Nod++)	R2A	White	L_5-1-2-1-1-1	AB461824	F2
235	M540	Sakukei 4 (Nod++)	R2A	Yellow	L_5-1-3-1-1	AB461825	AP2
236	M541	Sakukei 4 (Nod++)	R2A	White	L_5-1-4-1-1	AB461826	GP3
237	M542	Sakukei 4 (Nod++)	R2A	Colorless	L_5-2-1-1-1	AB461827	GP2
238	M543	Sakukei 4 (Nod++)	R2A	White	L_5-2-2-1-1	AB461828	GP9
239	M544	Sakukei 4 (Nod++)	R2A	Yellow	L_5-2-3-1-1	AB461829	B7
240	M545	Sakukei 4 (Nod++)	R2A	Colorless	L_5-2-4-1-1	AB461830	GP2
241	M546	Sakukei 4 (Nod++)	R2A	White	L_5-2-5-1-1	AB461831	GP2
242	M547	Sakukei 4 (Nod++)	R2A	Yellow	L_6-1-1-1-1	AB461832	B7
243	M548	Sakukei 4 (Nod++)	R2A	Yellow	L_6-1-2-1-1	AB461833	AP2
244	M549	Sakukei 4 (Nod++)	R2A	Colorless	L_6-1-3-1-1	AB461834	GP9
245	M550	Sakukei 4 (Nod++)	R2A	White	L_6-2-1-1-1	AB461835	GP2
246	M551	Sakukei 4 (Nod++)	R2A	White	L_6-2-2-1-1	AB461836	GP2
247	M552	Sakukei 4 (Nod++)	R2A	White	L_5-1-2-1-1-2	AB461837	GP2

Table S2. Comparison of the phylogenetic composition of endophytic bacteria among plant genotypes

Plant genotypes	Plant genotypes			
	Enrei	En1282	En1314	En6500
En1282	<i>Sphingomonadales</i> [*] <i>Sphingomonadaceae</i> [*]			
En1314	<i>Alphaproteobacteria</i> [*] <i>Sphingomonadales</i> [*] <i>Sphingomonadaceae</i> [*] <i>Gammaproteobacteria</i> [*] <i>Pseudomonadales</i> [*]	<i>Gammaproteobacteria</i> [*]		
En6500	<i>Pseudomonadales</i> [*] <i>Pseudomonadaceae</i> [*] <i>Pseudomonas</i>	<i>Pseudomonadaceae</i> [*] <i>Pseudomonas</i>	<i>Alphaproteobacteria</i> [*] <i>Sphingomonadales</i> [*] <i>Sphingomonadaceae</i> [*]	
Sakuhei 4	<i>Pseudomonadales</i> [*] <i>Pseudomonadaceae</i> [*] <i>Pseudomonas</i> [*]	<i>Alphaproteobacteria</i> [*] <i>Xanthomonadales</i> [*] <i>Xanthomonadaceae</i> [*] <i>Stenotrophomonas</i> [*]	<i>Alphaproteobacteria</i> [*] <i>Gammaproteobacteria</i> [*] <i>Enterobacteriales</i> [*] <i>Enterobacteriaceae</i> [*]	<i>Actinobacteria</i> [*] <i>Actinobacteria</i> [*] <i>Actinobacteridae</i> [*] <i>Actinomycetales</i> [*] <i>Micrococcineae</i> [*]

^{*} $p < 0.01$. Identity was determined using the RDP Lib Compare tool with a confidence level of 80%.

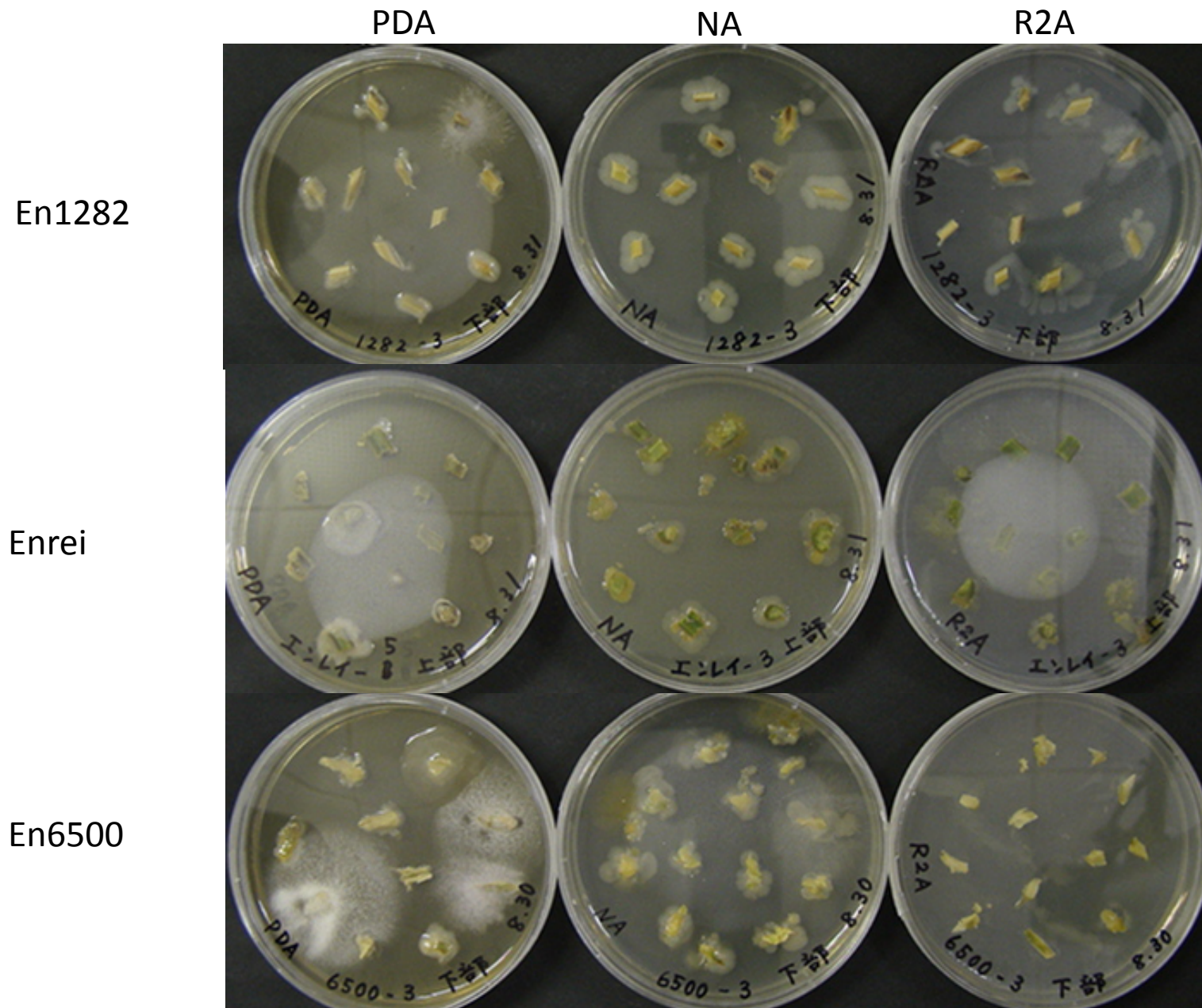


Fig. S1. Microbial growth around surface-sterilized stems of soybean lines (Enrei, En1282 and En6500) on PDA, NA and R2A agar media for 5 days (see test).

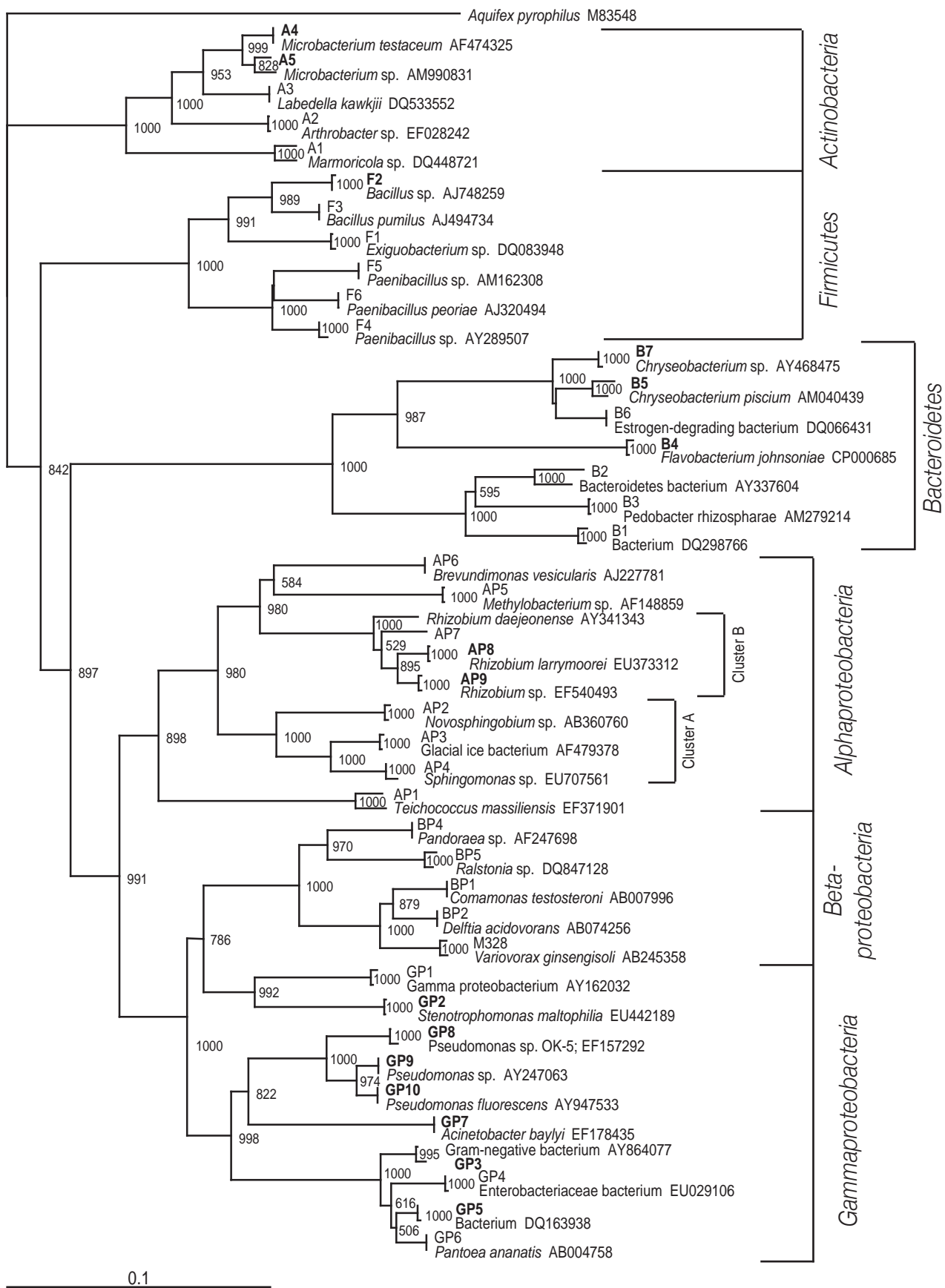


Fig. S2. Phylogenetic tree of 16 rRNA genes for the endophytic bacteria in soybean stems based on representative sequences defined by 97% sequence identity. The tree was constructed by the neighbor-joining method. The scale represents 0.1 substitutions per site. The numbers at nodes are the proportions of 1000 bootstrap resamplings. Bold indicates that isolates from the mutant soybeans share the same OTU as isolates from Enrei (Nod+ soybeans). *Aquifex pyrophilus* (M83548) was used as an outgroup for the tree.

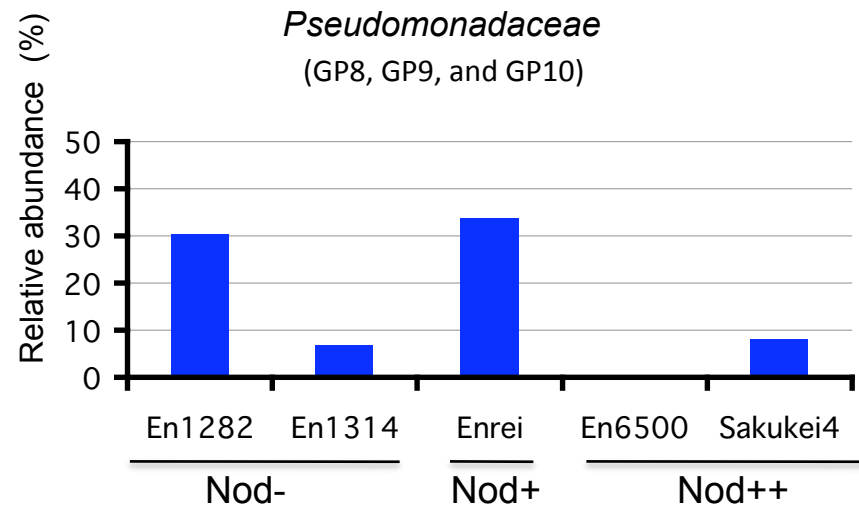
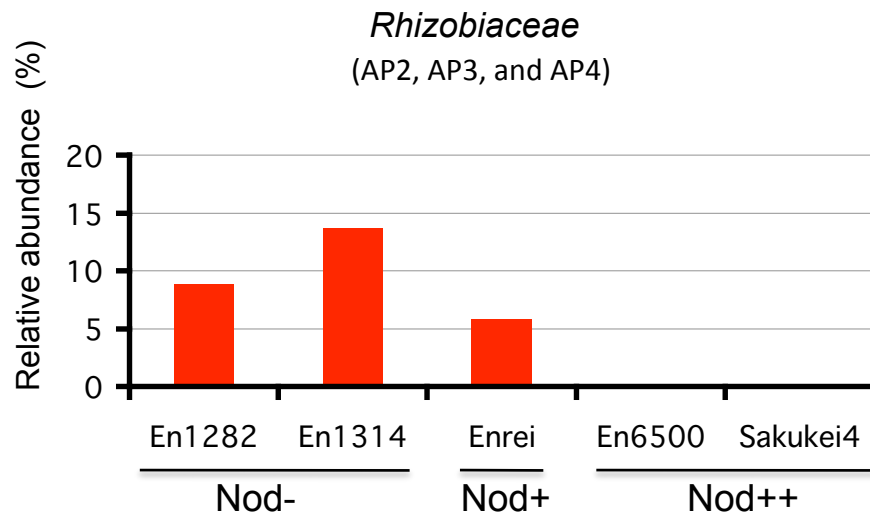
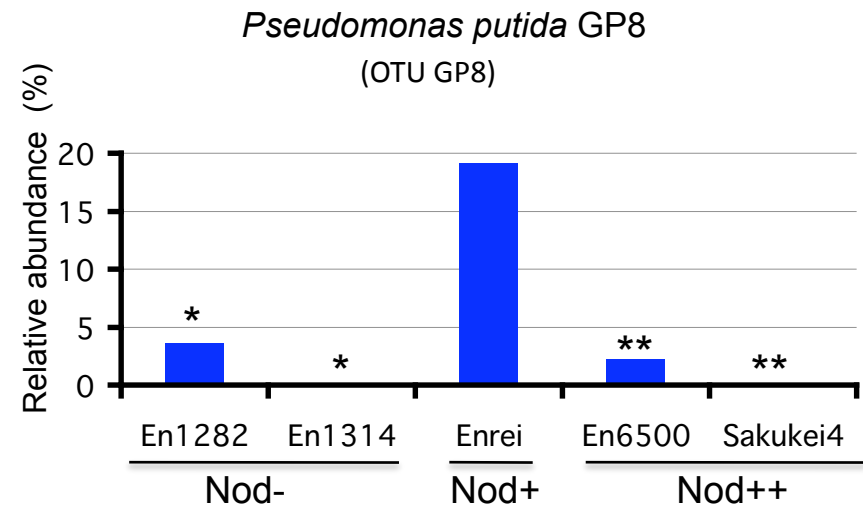
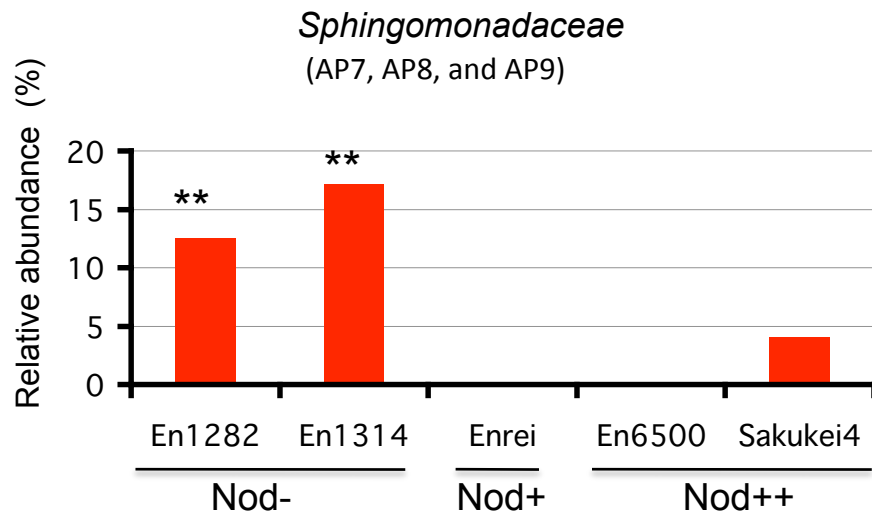


Fig. S3. Relative abundance of bacteria belonging to specific families and OUT. Significance was calculated with Fisher's exact test between a mutant soybean and Enrei in respective Groups. * $p < 0.05$. ** $p < 0.01$.