

附表二：菌株列表（NO: 862）

NO	菌株编号	菌种	中国典型培养物保藏中心
1	HSY91	Bacillus toyonensis	CCTCC M 2021867
2	HSY354	Bacillus toyonensis	CCTCC M 2021868
3	HSY32	Bacillus mycoides	CCTCC M 2021869
4	HSY56	Bacillus mycoides	CCTCC M 2021870
5	SJ110	Bacillus toyonensis	CCTCC M 2020524
6	HSY204	Bacillus cereus	CCTCC M 2020523
7	Bt521	Bacillus amyloliquefaciens	CCTCC M 2020525
8	HSY115	Bacillus thuringiensis	CCTCC M 20232351
9	SW412	Bacillus thuringiensis	CCTCC M 20232352
10	HSY144	Bacillus toyonensis	CCTCC M 20232357
11	HSY226	Bacillus thuringiensis	CCTCC M 20232353
12	HSY277	Bacillus thuringiensis	CCTCC M 20232355
13	HSY149	Bacillus thuringiensis	CCTCC M 20232354
14	HSY197	Bacillus thuringiensis	CCTCC M 20232356
15	A4-4	Serratia marcescens	
16	BT521	Bacillus subtilis	
17	CTX3	Acinetobacter oleivorans	
18	E25	Escherichia fergusonii	
19	GH15-4	Bacillus wiedmannii	
20	GH19-4	Bacillus wiedmannii	
21	GH20-5	Bacillus pacificus	
22	GH24-4	Bacillus wiedmannii	
23	GH2-5	Bacillus wiedmannii	
24	GH28-3	Bacillus wiedmannii	
25	GH30-3	Bacillus mycoides	
26	GH33-3	Bacillus wiedmannii	
27	GH34-3	Bacillus wiedmannii	
28	GH35-1	Bacillus mycoides	
29	GH36-1	[Brevibacterium] frigoritolerans	
30	GH38-3	Bacillus toyonensis	
31	GH38-4	Bacillus wiedmannii	
32	GH38-5	Bacillus wiedmannii	
33	GH42-1	Bacillus wiedmannii	
34	GH42-3	Bacillus wiedmannii	
35	GH4-4	[Brevibacterium] frigoritolerans	
36	GH47-1	Bacillus wiedmannii	
37	GH53-5	[Brevibacterium] frigoritolerans	
38	GH56-1	Bacillus toyonensis	
39	GH56-5	Bacillus wiedmannii	
40	GH58-5	Bacillus wiedmannii	
41	GH61-5	Bacillus mycoides	

42	GH63-3	[Brevibacterium] frigoritolerans	
43	GH6-5	Bacillus mycoides	
44	GH8-5	Bacillus wiedmannii	
45	GH9-2	Bacillus toyonensis	
46	GP1-2	Bacillus mycoides	
47	GP13-2	Bacillus mycoides	
48	GP15-5	Bacillus toyonensis	
49	GP21-3	Bacillus mycoides	
50	GP23-5	Bacillus mycoides	
51	GP25-2	Bacillus aryabhatai	
52	GP28-3	Proteus mirabilis	
53	GP30-3	Bacillus mycoides	
54	GP31-2	Bacillus toyonensis	
55	GP34-6	Bacillus mycoides	
56	GP35-2	Bacillus mycoides	
57	GP36-1	Bacillus mycoides	
58	GP36-5	Bacillus wiedmannii	
59	GP36-6	Bacillus mycoides	
60	GP38-2	Bacillus mycoides	
61	GP39-4	Enterococcus gallinarum	
62	GP4-1	Enterococcus gallinarum	
63	GP46-2	Enterococcus gallinarum	
64	GP5-2	Bacillus wiedmannii	
65	GP7-4	Bacillus mycoides	
66	GP9-3	Bacillus wiedmannii	
67	GP9-5	Bacillus toyonensis	
68	GW12-3	Bacillus wiedmannii	
69	GW13-1	Bacillus mycoides	
70	GW14-4	Bacillus mycoides	
71	GW15-2	Bacillus mycoides	
72	GW16-1	Bacillus mycoides	
73	GW19-1	Bacillus wiedmannii	
74	GW21-3	Bacillus mycoides	
75	GW23-2	Bacillus mycoides	
76	GW23-4	Bacillus mycoides	
77	GW24-4	Bacillus toyonensis	
78	GW25-3	Bacillus mycoides	
79	GW31-4	Bacillus mycoides	
80	GW4-1	Bacillus mycoides	
81	GW41-3	Bacillus wiedmannii	
82	GW44-1	Bacillus mycoides	
83	GW5-4	Bacillus aryabhatai	
84	GW58-4	Bacillus wiedmannii	

85	GW60-4	Bacillus wiedmannii	
86	GW6-1	[Brevibacterium] frigoritolerans	
87	GW6-2	Bacillus toyonensis	
88	GW72-5	Bacillus mycoides	
89	GW7-5	Bacillus wiedmannii	
90	GW8-1	Bacillus wiedmannii	
91	GW9-5	Bacillus mycoides	
92	GZ11-2	Bacillus pacificus	
93	GZ15-2	Bacillus mycoides	
94	GZ2-5	Bacillus wiedmannii	
95	GZ39-1	Bacillus wiedmannii	
96	GZ4-3	Bacillus wiedmannii	
97	GZ4-4	[Brevibacterium] frigoritolerans	
98	GZ4-5	Bacillus wiedmannii	
99	GZ47-1	Bacillus wiedmannii	
100	GZ49-5	Bacillus toyonensis	
101	GZ54-1	Bacillus wiedmannii	
102	GZ8-5	Bacillus pacificus	
103	H105-5	Bacillus wiedmannii	
104	H106-3	Bacillus toyonensis	
105	H108-1	Bacillus wiedmannii	
106	H108-3	Bacillus mycoides	
107	H108-4	Bacillus solisilvae	
108	H110-2	Bacillus wiedmannii	
109	H110-4	Bacillus wiedmannii	
110	H111-5	Bacillus wiedmannii	
111	H113-3	Bacillus solisilvae	
112	H116-1	Bacillus solisilvae	
113	H118-2	Escherichia fergusonii	
114	H119-3	Bacillus wiedmannii	
115	H119-4	Bacillus solisilvae	
116	H120-3	Bacillus solisilvae	
117	H122-4	Bacillus wiedmannii	
118	H123-4	Bacillus solisilvae	
119	H128-2	Bacillus luciferensis	
120	H129-3	Bacillus wiedmannii	
121	H130-2	Bacillus solisilvae	
122	H133-2	Bacillus wiedmannii	
123	H134-2	Bacillus toyonensis	
124	H134-5	Bacillus wiedmannii	
125	H136-1	Bacillus wiedmannii	
126	H138-5	Bacillus wiedmannii	
127	H139-5	Bacillus mobilis	

128	H140-2	Bacillus wiedmannii	
129	H144-2	Bacillus wiedmannii	
130	H146-1	Bacillus solisilvae	
131	H146-4	Bacillus wiedmannii	
132	H155-3	Bacillus toyonensis	
133	H156-3	Bacillus solisilvae	
134	H160-2	Microbacterium paraoxydans	
135	H164-1	Bacillus wiedmannii	
136	H185-1	Bacillus wiedmannii	
137	H185-5	Bacillus pacificus	
138	H186-3	Bacillus toyonensis	
139	H187-1	Bacillus wiedmannii	
140	H189-1	Bacillus acidicer	
141	H190-1	Bacillus solisilvae	
142	H212-1	Bacillus proteolyticus	
143	H212-2	Bacillus wiedmannii	
144	H212-3	Bacillus toyonensis	
145	H212-5	Bacillus wiedmannii	
146	H220-2	Bacillus wiedmannii	
147	H222-5	Bacillus wiedmannii	
148	H224-1	Bacillus toyonensis	
149	H226-2	Bacillus toyonensis	
150	H227-4	Bacillus wiedmannii	
151	H229-2	Bacillus wiedmannii	
152	H230-1	Bacillus wiedmannii	
153	H231-1	Bacillus luciferensis	
154	H237-3	Bacillus wiedmannii	
155	H240-5	Bacillus mobilis	
156	H254-1	Bacillus wiedmannii	
157	H262-6	Bacillus wiedmannii	
158	H263-6	Bacillus wiedmannii	
159	H271-6	Bacillus mycoides	
160	H272-3	Bacillus mycoides	
161	H302-5	Bacillus wiedmannii	
162	H305-2	Bacillus wiedmannii	
163	H307-6	Bacillus mobilis	
164	H318-6	Bacillus wiedmannii	
165	H321-2	Bacillus mobilis	
166	H323-4	Bacillus mobilis	
167	H333-3	Bacillus mobilis	
168	H336-3	Bacillus toyonensis	
169	H347-5	Bacillus mycoides	
170	H348-5	Bacillus wiedmannii	

171	H358-5	Bacillus wiedmannii	
172	H373-2	Bacillus wiedmannii	
173	H373-3	Bacillus cucumis	
174	H390-1	Bacillus wiedmannii	
175	H394-1	Bacillus wiedmannii	
176	H399-4	Bacillus wiedmannii	
177	H402-1	Bacillus toyonensis	
178	H402-5	Bacillus wiedmannii	
179	H404-2	Bacillus wiedmannii	
180	H404-4	Bacillus wiedmannii	
181	H406-3	Bacillus wiedmannii	
182	H414-4	Bacillus wiedmannii	
183	H415-5	Bacillus wiedmannii	
184	H422-2	Bacillus wiedmannii	
185	H422-3	Bacillus wiedmannii	
186	H423-3	Bacillus wiedmannii	
187	H425-4	Bacillus wiedmannii	
188	H430-1	Lactococcus lactis	
189	H431-5	Bacillus wiedmannii	
190	H437-5	Bacillus wiedmannii	
191	H445-3	Bacillus wiedmannii	
192	H450-5	Bacillus wiedmannii	
193	H458-3	Bacillus wiedmannii	
194	H461-3	Bacillus fungorum	
195	H466-2	Bacillus wiedmannii	
196	H466-6	Bacillus wiedmannii	
197	H467-1	Bacillus wiedmannii	
198	H469-2	Bacillus wiedmannii	
199	H470-3	Bacillus wiedmannii	
200	H471-1	Bacillus wiedmannii	
201	H471-2	Bacillus wiedmannii	
202	H471-6	Bacillus wiedmannii	
203	H472-3	Bacillus wiedmannii	
204	H473-5	Bacillus wiedmannii	
205	H475-5	Bacillus wiedmannii	
206	H476-6	Bacillus mobilis	
207	H479-2	Bacillus wiedmannii	
208	H480-5	Bacillus wiedmannii	
209	H481-4	Bacillus wiedmannii	
210	H483-6	Bacillus wiedmannii	
211	H487-2	Bacillus wiedmannii	
212	H491-4	Bacillus mobilis	
213	H494-6	Lactococcus lactis	

214	H495-5	Bacillus wiedmannii	
215	H500-3	Bacillus wiedmannii	
216	H503-4	Bacillus mobilis	
217	H503-5	Bacillus wiedmannii	
218	H508-4	Bacillus mobilis	
219	H509-6	Bacillus wiedmannii	
220	H513-4	Bacillus wiedmannii	
221	H514-5	Bacillus wiedmannii	
222	H523-3	Bacillus wiedmannii	
223	H526-5	Bacillus wiedmannii	
224	H528-1	Bacillus wiedmannii	
225	H529-3	Bacillus mobilis	
226	H534-5	Bacillus wiedmannii	
227	H536-5	Bacillus mobilis	
228	H538-3	Bacillus mobilis	
229	H539-6	Bacillus wiedmannii	
230	H540-2	Bacillus wiedmannii	
231	H541-3	Bacillus wiedmannii	
232	H559-1	Bacillus mobilis	
233	H581-2	Bacillus wiedmannii	
234	H581-4	Bacillus mobilis	
235	H585-3	Bacillus wiedmannii	
236	H588-5	Bacillus wiedmannii	
237	H589-1	Bacillus wiedmannii	
238	H608-2	Bacillus wiedmannii	
239	H608-3	Bacillus wiedmannii	
240	H612-2	Bacillus wiedmannii	
241	H615-1	Bacillus wiedmannii	
242	H622-1	Bacillus wiedmannii	
243	H623-3	Bacillus toyonensis	
244	H647-2	Bacillus wiedmannii	
245	H648-4	Bacillus wiedmannii	
246	H659-1	Bacillus wiedmannii	
247	H659-4	Bacillus wiedmannii	
248	H661-2	Bacillus wiedmannii	
249	H66-2	Bacillus wiedmannii	
250	H664-2	Bacillus aryabhatai	
251	H667-1	Bacillus aryabhatai	
252	H667-3	Bacillus wiedmannii	
253	H668-1	Bacillus wiedmannii	
254	H668-2	Bacillus wiedmannii	
255	H67-2	Acinetobacter tandoii	
256	H672-3	Bacillus aryabhatai	

257	H672-4	Bacillus wiedmannii	
258	H67-3	Bacillus mobilis	
259	H674-4	Bacillus wiedmannii	
260	H674-5	Bacillus wiedmannii	
261	H676-3	Bacillus megaterium	
262	H677-3	Bacillus wiedmannii	
263	H677-4	Bacillus wiedmannii	
264	H681-5	Bacillus wiedmannii	
265	H690-2	Bacillus albus	
266	H693-3	Bacillus wiedmannii	
267	H700-3	[Brevibacterium] frigoritolerans	
268	H701-1	Bacillus wiedmannii	
269	H712-1	Bacillus albus	
270	H715-1	Bacillus wiedmannii	
271	H717-3	Bacillus wiedmannii	
272	H718-3	Bacillus wiedmannii	
273	H719-5	Bacillus wiedmannii	
274	H726-2	Bacillus mobilis	
275	H727-4	Bacillus wiedmannii	
276	H737-1	Bacillus wiedmannii	
277	H741-4	Bacillus wiedmannii	
278	H745-3	Bacillus wiedmannii	
279	H746-4	Bacillus wiedmannii	
280	H750-2	Bacillus wiedmannii	
281	H760-1	Cronobacter turicensis	
282	H760-5	Bacillus wiedmannii	
283	H80-4	Bacillus solisilvae	
284	H86-1	Bacillus solisilvae	
285	H89-4	Escherichia fergusonii	
286	H92-5	Bacillus toyonensis	
287	H95-3	Bacillus mobilis	
288	H98-3	Bacillus toyonensis	
289	H99-3	Bacillus wiedmannii	
290	HD1	Bacillus wiedmannii	
291	HD73	Bacillus wiedmannii	
292	HJL3	Bacillus wiedmannii	
293	HS100	Bacillus wiedmannii	
294	HS104	Bacillus wiedmannii	
295	HS105	Bacillus wiedmannii	
296	HS107	Bacillus wiedmannii	
297	HS122	Bacillus mobilis	
298	HS14	Bacillus toyonensis	
299	HS144	Bacillus wiedmannii	

300	HS147	Bacillus wiedmannii	
301	HS150	Bacillus aryabhatai	
302	HS151	Bacillus paramycoides	
303	HS154	Bacillus wiedmannii	
304	HS157	Bacillus wiedmannii	
305	HS158	Bacillus wiedmannii	
306	HS159	Bacillus wiedmannii	
307	HS16	Bacillus wiedmannii	
308	HS160	Bacillus toyonensis	
309	HS161	Bacillus wiedmannii	
310	HS167	Bacillus wiedmannii	
311	HS168	Bacillus wiedmannii	
312	HS170	Bacillus wiedmannii	
313	HS172	Bacillus mycoides	
314	HS174	Bacillus wiedmannii	
315	HS175	Bacillus wiedmannii	
316	HS177	Bacillus wiedmannii	
317	HS178	Bacillus wiedmannii	
318	HS179	Bacillus wiedmannii	
319	HS180	Bacillus wiedmannii	
320	HS181	Bacillus wiedmannii	
321	HS185	Bacillus toyonensis	
322	HS189	Bacillus wiedmannii	
323	HS23	Bacillus toyonensis	
324	HS24	Bacillus mobilis	
325	HS25	Bacillus toyonensis	
326	HS31	Bacillus cereus	
327	HS32	Bacillus mycoides	
328	HS33	Bacillus wiedmannii	
329	HS34	Bacillus wiedmannii	
330	HS35	Bacillus wiedmannii	
331	HS36	Bacillus wiedmannii	
332	HS37	Bacillus wiedmannii	
333	HS38	Bacillus wiedmannii	
334	HS40	Bacillus aryabhatai	
335	HS41	Bacillus wiedmannii	
336	HS43	Bacillus wiedmannii	
337	HS46	Bacillus albus	
338	HS47	Bacillus toyonensis	
339	HS48	Bacillus toyonensis	
340	HS49	Bacillus toyonensis	
341	HS50	Bacillus wiedmannii	
342	HS51	Bacillus wiedmannii	



343	HS52	Bacillus wiedmannii	
344	HS53	Bacillus wiedmannii	
345	HS54	Bacillus toyonensis	
346	HS60	Bacillus toyonensis	
347	HS65	Bacillus wiedmannii	
348	HS66	Bacillus toyonensis	
349	HS67	Bacillus wiedmannii	
350	HS68	Bacillus wiedmannii	
351	HS71	Bacillus toyonensis	
352	HS72	Bacillus toyonensis	
353	HS74	Bacillus toyonensis	
354	HS78	Bacillus toyonensis	
355	HS79	Bacillus toyonensis	
356	HS80	Bacillus mycoides	
357	HS82	Bacillus toyonensis	
358	HS91	Bacillus wiedmannii	
359	HSL10-3	Bacillus wiedmannii	
360	HSL10-4	Bacillus albus	
361	HSL17-1	[Brevibacterium] frigoritolerans	
362	HSL17-2	Bacillus wiedmannii	
363	HSL7-1	Bacillus wiedmannii	
364	HSL7-4	Bacillus wiedmannii	
365	HSL8-2	Bacillus wiedmannii	
366	HSL9-1	Bacillus toyonensis	
367	HX19	[Brevibacterium] frigoritolerans	
368	HX4	Bacillus wiedmannii	
369	JL1-2	Bacillus wiedmannii	
370	JL16-1	Bacillus wiedmannii	
371	JL17-3	Bacillus wiedmannii	
372	JL17-6	Bacillus wiedmannii	
373	JL18-4	Bacillus mobilis	
374	JL21-1	Bacillus wiedmannii	
375	JL21-3	Bacillus mycoides	
376	JL21-4	Bacillus wiedmannii	
377	JL22-1	Bacillus wiedmannii	
378	JL22-4	Bacillus wiedmannii	
379	JL23-1	Bacillus mobilis	
380	JL23-3	Bacillus mobilis	
381	JL24-1	Bacillus mobilis	
382	JL25-1	Bacillus wiedmannii	
383	JL26-1	Bacillus wiedmannii	
384	JL27-1	Bacillus pacificus	
385	JL28-2	Bacillus wiedmannii	

386	JL28-5	Bacillus wiedmannii	
387	JL29-2	Bacillus wiedmannii	
388	JL29-4	Bacillus wiedmannii	
389	JL35-4	Bacillus wiedmannii	
390	JL4-3	Lysinibacillus pakistanensis	
391	JL44-2	Bacillus mobilis	
392	JL5-1	Bacillus mobilis	
393	JL52-1	Bacillus toyonensis	
394	JL5-4	Bacillus mobilis	
395	JL64-4	Bacillus wiedmannii	
396	JQ1-2	Bacillus cucumis	
397	JQ5-5	Bacillus wiedmannii	
398	JY20-6	Bacillus wiedmannii	
399	JY33-4	Bacillus albus	
400	JY43-6	Bacillus wiedmannii	
401	L108-5	Bacillus wiedmannii	
402	L109-1	Bacillus wiedmannii	
403	L1-1	Bacillus wiedmannii	
404	L12-3	Bacillus wiedmannii	
405	L131-4	Bacillus wiedmannii	
406	L141-5	Bacillus wiedmannii	
407	L145-2	Bacillus wiedmannii	
408	L148-3	Bacillus wiedmannii	
409	L148-5	Bacillus wiedmannii	
410	L159-3	Bacillus albus	
411	L17-5	Bacillus wiedmannii	
412	L17-53	Lysinibacillus sphaericus	
413	L180-3	Bacillus wiedmannii	
414	L194-3	Bacillus wiedmannii	
415	L211-5	Bacillus wiedmannii	
416	L222-5	Bacillus wiedmannii	
417	L225-4	Bacillus mobilis	
418	L226-5	Bacillus wiedmannii	
419	L229-2	Bacillus wiedmannii	
420	L240-2	Bacillus wiedmannii	
421	L246-5	Bacillus wiedmannii	
422	L250-1	Bacillus mobilis	
423	L253-4	Bacillus wiedmannii	
424	L256-3	Bacillus mobilis	
425	L260-1	Bacillus wiedmannii	
426	L260-2	Bacillus mobilis	
427	L26-1	Bacillus wiedmannii	
428	L262-2	Bacillus mobilis	

429	L263-5	Enterobacter soli	
430	L264-1	Bacillus wiedmannii	
431	L267-2	Bacillus wiedmannii	
432	L269-3	Bacillus mobilis	
433	L269-4	Bacillus wiedmannii	
434	L270-5	Bacillus wiedmannii	
435	L274-5	Bacillus wiedmannii	
436	L28-1	Bacillus wiedmannii	
437	L282-5	Bacillus wiedmannii	
438	L28-5	Escherichia fergusonii	
439	L286-4	Bacillus wiedmannii	
440	L288-2	Bacillus fungorum	
441	L289-3	Bacillus wiedmannii	
442	L290-2	Bacillus wiedmannii	
443	L29-1	[Brevibacterium] frigoritolerans	
444	L292-3	Bacillus wiedmannii	
445	L294-2	Bacillus wiedmannii	
446	L295-4	Bacillus mobilis	
447	L30-1	Acinetobacter lactuca	
448	L30-3	Bacillus mobilis	
449	L303-2	Bacillus wiedmannii	
450	L30-4	Bacillus wiedmannii	
451	L307-1	Bacillus wiedmannii	
452	L320-2	Bacillus wiedmannii	
453	L332-2	Bacillus solisilvae	
454	L332-3	Bacillus solisilvae	
455	L335-2	Bacillus wiedmannii	
456	L337-3	Bacillus toyonensis	
457	L340-2	Bacillus wiedmannii	
458	L344-3	Bacillus wiedmannii	
459	L351-3	Bacillus wiedmannii	
460	L352-3	Bacillus aryabhatai	
461	L35-3	Bacillus wiedmannii	
462	L354-2	Bacillus wiedmannii	
463	L35-5	Bacillus wiedmannii	
464	L355-3	Bacillus wiedmannii	
465	L355-4	Bacillus wiedmannii	
466	L43-4	Bacillus wiedmannii	
467	L43-5	Bacillus wiedmannii	
468	L47-1	Bacillus wiedmannii	
469	L47-5	Bacillus wiedmannii	
470	L49-1	Bacillus toyonensis	
471	L49-2	Bacillus wiedmannii	

472	L50-1	Bacillus wiedmannii	
473	L52-3	Bacillus wiedmannii	
474	L54-4	Bacillus wiedmannii	
475	L55-1	Bacillus wiedmannii	
476	L56-1	Bacillus wiedmannii	
477	L60-1	Bacillus wiedmannii	
478	L60-4	Bacillus toyonensis	
479	L63-4	Bacillus paranthracis	
480	L84-1	Bacillus wiedmannii	
481	L93-5	Bacillus toyonensis	
482	LWX18-5	Bacillus wiedmannii	
483	LWX23-5	Bacillus wiedmannii	
484	LWX41-4	Bacillus mycoides	
485	LWX5-6	Bacillus mycoides	
486	LWX6-4	Bacillus toyonensis	
487	LY14-6	Bacillus wiedmannii	
488	LY16-1	Bacillus wiedmannii	
489	LY1K	Bacillus wiedmannii	
490	LY20-2	Bacillus wiedmannii	
491	LY21-6	Bacillus toyonensis	
492	LY36-5	Bacillus wiedmannii	
493	LY41-3	Bacillus wiedmannii	
494	LY46-5	Bacillus mycoides	
495	LY46-6	Bacillus wiedmannii	
496	LY6K	Bacillus toyonensis	
497	LYQ127	Bacillus wiedmannii	
498	LYQ128	[Brevibacterium] frigoritolerans	
499	MWH42-1	Bacillus wiedmannii	
500	P100-2	Bacillus wiedmannii	
501	P10-2	Bacillus toyonensis	
502	P102-2	Bacillus toyonensis	
503	P104-1	Bacillus wiedmannii	
504	P107-4	Bacillus wiedmannii	
505	P111-1	Bacillus wiedmannii	
506	P112-3	Bacillus wiedmannii	
507	P11-5	Bacillus wiedmannii	
508	P12-1	Bacillus wiedmannii	
509	P127-4	Bacillus wiedmannii	
510	P130-4	Bacillus wiedmannii	
511	P13-2	Bacillus paranthracis	
512	P133-1	Bacillus toyonensis	
513	P13-5	Bacillus wiedmannii	
514	P1-4	Bacillus wiedmannii	

515	P140-1	Bacillus toyonensis	
516	P147-2	Bacillus wiedmannii	
517	P150-5	Bacillus wiedmannii	
518	P150-6	Bacillus wiedmannii	
519	P157-2	Bacillus wiedmannii	
520	P16-5	Bacillus wiedmannii	
521	P168-3	Bacillus paranthracis	
522	P17-1	Bacillus cereus	
523	P173-4	Bacillus wiedmannii	
524	P176-3	Bacillus wiedmannii	
525	P176-6	Bacillus wiedmannii	
526	P178-2	Bacillus pacificus	
527	P179-3	Bacillus proteolyticus	
528	P180-4	Bacillus wiedmannii	
529	P182-2	Bacillus wiedmannii	
530	P183-1	Bacillus wiedmannii	
531	P183-5	Bacillus wiedmannii	
532	P18-4	Bacillus wiedmannii	
533	P188-2	Bacillus wiedmannii	
534	P189-1	Bacillus wiedmannii	
535	P189-5	Bacillus wiedmannii	
536	P190-3	Bacillus wiedmannii	
537	P191-5	Bacillus wiedmannii	
538	P193-1	Bacillus wiedmannii	
539	P196-4	Bacillus wiedmannii	
540	P20-2	Bacillus wiedmannii	
541	P20-3	Bacillus wiedmannii	
542	P20-6	Bacillus wiedmannii	
543	P206-3	Bacillus wiedmannii	
544	P209-5	Bacillus wiedmannii	
545	P216-6	Bacillus wiedmannii	
546	P218-1	Bacillus wiedmannii	
547	P219-3	Bacillus wiedmannii	
548	P220-2	Bacillus wiedmannii	
549	P221-3	Bacillus wiedmannii	
550	P224-4	Bacillus wiedmannii	
551	P226-4	Bacillus toyonensis	
552	P233-2	Bacillus mobilis	
553	P236-2	Bacillus toyonensis	
554	P241-4	Bacillus wiedmannii	
555	P242-1	Bacillus wiedmannii	
556	P245-3	Bacillus wiedmannii	
557	P246-3	Bacillus wiedmannii	

558	P248-2	Bacillus toyonensis	
559	P249-3	Bacillus wiedmannii	
560	P250-3	Bacillus toyonensis	
561	P25-1	Bacillus wiedmannii	
562	P254-5	Bacillus mobilis	
563	P25-6	Bacillus wiedmannii	
564	P258-5	Bacillus wiedmannii	
565	P263-2	Bacillus wiedmannii	
566	P263-4	Bacillus wiedmannii	
567	P267-5	Bacillus wiedmannii	
568	P268-3	Bacillus wiedmannii	
569	P268-4	Bacillus wiedmannii	
570	P269-4	Bacillus wiedmannii	
571	P272-2	Bacillus toyonensis	
572	P277-4	Bacillus toyonensis	
573	P278-5	Bacillus wiedmannii	
574	P285-1	Acinetobacter oleivorans	
575	P319-2	Bacillus wiedmannii	
576	P35-1	Bacillus wiedmannii	
577	P4-2	Bacillus wiedmannii	
578	P54-3	Bacillus toyonensis	
579	P61-5	Bacillus wiedmannii	
580	P71-4	Bacillus toyonensis	
581	P74-1	Bacillus wiedmannii	
582	P7-7	Bacillus wiedmannii	
583	P78-4	Bacillus wiedmannii	
584	P81-4	Bacillus wiedmannii	
585	P82-2	Bacillus mobilis	
586	P90-2	Bacillus toyonensis	
587	P9-6	Bacillus mobilis	
588	P97-6	Bacillus wiedmannii	
589	P98-3	Bacillus wiedmannii	
590	P99-3	Bacillus wiedmannii	
591	PLS98	Bacillus toyonensis	
592	PSL112	Bacillus toyonensis	
593	PSL115	Lysinibacillus pakistanensis	
594	PSL118	Bacillus wiedmannii	
595	PSL81	Bacillus mobilis	
596	PSL88	Bacillus toyonensis	
597	PSL94	Bacillus mycoides	
598	QHF1	Bacillus toyonensis	
599	QHF10	Bacillus toyonensis	
600	QHF108	Bacillus wiedmannii	

601	QHF13	Bacillus toyonensis	
602	QHF136	Bacillus mobilis	
603	QHF14	Bacillus wiedmannii	
604	QHF140	Bacillus mycoides	
605	QHF158	Bacillus wiedmannii	
606	QHF197	Bacillus toyonensis	
607	QHF203	Bacillus mobilis	
608	QHF214	Bacillus mycoides	
609	QHF229	Bacillus wiedmannii	
610	QHF243	Escherichia fergusonii	
611	QHF29	Bacillus wiedmannii	
612	QHF45	Bacillus toyonensis	
613	QHF64	Bacillus wiedmannii	
614	QHF69	Bacillus wiedmannii	
615	QHF7	Bacillus wiedmannii	
616	QHF75	Bacillus mycoides	
617	QHF76	Bacillus toyonensis	
618	QHF97	Bacillus toyonensis	
619	QHF99	Bacillus mobilis	
620	QY16-1	Bacillus wiedmannii	
621	QY16-3	Bacillus toyonensis	
622	QY20-2	Bacillus wiedmannii	
623	QY21-1	Bacillus wiedmannii	
624	QY30-3	Bacillus aryabhatai	
625	QY31-3	Bacillus aryabhatai	
626	QY3-3	Bacillus wiedmannii	
627	QY8-1	Bacillus wiedmannii	
628	SC11-4	Bacillus wiedmannii	
629	SC1-4	Bacillus wiedmannii	
630	SC21-5	Bacillus wiedmannii	
631	SC2-3	Enterococcus gallinarum	
632	SC27-5	Bacillus wiedmannii	
633	SC34-3	Bacillus mobilis	
634	SC35-2	Bacillus mobilis	
635	SC36	Acinetobacter tandoii	
636	SC4-5	Bacillus wiedmannii	
637	SC47-4	Bacillus wiedmannii	
638	SC55-1	Bacillus mobilis	
639	SC55-3	Bacillus mobilis	
640	SC57-2	Bacillus wiedmannii	
641	SC59-1	Bacillus wiedmannii	
642	SC67-2	Bacillus toyonensis	
643	SC73-3	Bacillus wiedmannii	

644	SC7-5	Bacillus wiedmannii	
645	SC79-5	Bacillus toyonensis	
646	SC8-1	Bacillus wiedmannii	
647	SE63	Acinetobacter tandoii	
648	SH2-1	Bacillus wiedmannii	
649	SH22-1	Bacillus mycoides	
650	SH25-5	[Brevibacterium] frigoritolerans	
651	SH26-7	Bacillus mycoides	
652	SH27-5	Bacillus aryabhatai	
653	SH4-1	Bacillus wiedmannii	
654	SH5-1	[Brevibacterium] frigoritolerans	
655	SH6-4	[Brevibacterium] frigoritolerans	
656	SH7-4	Bacillus wiedmannii	
657	SH9-3	Bacillus toyonensis	
658	SJ110	Bacillus toyonensis	
659	SJ119	Bacillus wiedmannii	
660	SJ83	Bacillus wiedmannii	
661	SJ98	Bacillus pacificus	
662	SP11-3	Bacillus aryabhatai	
663	SP11-4	[Brevibacterium] frigoritolerans	
664	SP14-3	Bacillus aryabhatai	
665	SP15-1	Bacillus aryabhatai	
666	SP15-2	Bacillus wiedmannii	
667	SP15-5	Bacillus aryabhatai	
668	SP16-2	Bacillus aryabhatai	
669	SP16-3	Bacillus aryabhatai	
670	SP16-4	Bacillus aryabhatai	
671	SP17-1	[Brevibacterium] frigoritolerans	
672	SP17-3	Bacillus aryabhatai	
673	SP19-4	Bacillus aryabhatai	
674	SP20-4	Ochrobactrum anthropi	
675	SP21-5	Bacillus aryabhatai	
676	SP22-3	Bacillus aryabhatai	
677	SP25-4	[Brevibacterium] frigoritolerans	
678	SP26-2	Bacillus mycoides	
679	SP28-1	Bacillus tianmuensis	
680	SP32-2	Bacillus wiedmannii	
681	SP36-4	[Brevibacterium] frigoritolerans	
682	SP49-4	Bacillus mycoides	
683	SP5-3	Bacillus aryabhatai	
684	SP5-5	Bacillus subtilis	
685	SP6-3	[Brevibacterium] frigoritolerans	
686	SP7-1	Bacillus aryabhatai	



687	SP7-4	Bacillus aryabhatai	
688	SP7-6	Bacillus aryabhatai	
689	SW21-2	Proteus mirabilis	
690	SW22-5	Bacillus toyonensis	
691	SW24-1	[Brevibacterium] frigoritolerans	
692	SW24-2	[Brevibacterium] frigoritolerans	
693	SW28-2	Bacillus wiedmannii	
694	SW29-4	Bacillus mycoides	
695	SW30-1	Bacillus mycoides	
696	SW34-4	Bacillus wiedmannii	
697	SW39-1	[Brevibacterium] frigoritolerans	
698	SW40-2	Escherichia fergusonii	
699	SW41-2	Bacillus wiedmannii	
700	SW41-3	Bacillus wiedmannii	
701	SW4-2	Bacillus mycoides	
702	SW44-5	Bacillus wiedmannii	
703	SW45-2	Bacillus wiedmannii	
704	SW47-4	Bacillus aryabhatai	
705	SW48-1	[Brevibacterium] frigoritolerans	
706	SW49-2	[Brevibacterium] frigoritolerans	
707	SW6-2	Proteus mirabilis	
708	SW6-4	[Brevibacterium] frigoritolerans	
709	SZ1-2	Bacillus mycoides	
710	SZ1-5	Bacillus aryabhatai	
711	SZ17-3	Bacillus mycoides	
712	SZ19-4	Bacillus wiedmannii	
713	SZ2-3	Bacillus wiedmannii	
714	SZ25-1	Bacillus wiedmannii	
715	SZ27-5	Bacillus wiedmannii	
716	SZ34-6	Bacillus wiedmannii	
717	SZ43-3	[Brevibacterium] frigoritolerans	
718	SZ47-3	Bacillus cereus	
719	SZ5-2	Bacillus aryabhatai	
720	SZ5-3	Bacillus wiedmannii	
721	SZ55-5	Bacillus mycoides	
722	SZ55-6	Bacillus mycoides	
723	SZ59-1	Bacillus wiedmannii	
724	SZ59-2	Bacillus wiedmannii	
725	SZ60-3	Bacillus wiedmannii	
726	TL10-6	Bacillus solisilvae	
727	TL33-4	Bacillus paramycoides	
728	TL39-5	Bacillus wiedmannii	
729	W104-3	Bacillus mobilis	

730	W114-1	Bacillus wiedmannii	
731	W118-4	Bacillus mobilis	
732	W119-5	Bacillus mobilis	
733	W125-5	Bacillus mobilis	
734	W137-4	Bacillus toyonensis	
735	W145-3	Bacillus proteolyticus	
736	W150-1	Bacillus toyonensis	
737	W151-2	Bacillus toyonensis	
738	W151-4	Bacillus toyonensis	
739	W156-4	Bacillus wiedmannii	
740	W159-5	Bacillus wiedmannii	
741	W160-2	Bacillus toyonensis	
742	W172-5	Enterococcus gallinarum	
743	W179-2	Bacillus wiedmannii	
744	W179-4	Bacillus wiedmannii	
745	W181-1	Enterococcus gallinarum	
746	W182-1	Enterococcus gallinarum	
747	W184-2	Bacillus wiedmannii	
748	W184-5	Bacillus toyonensis	
749	W186-6	Bacillus wiedmannii	
750	W187-1	Bacillus wiedmannii	
751	W187-6	Enterococcus gallinarum	
752	W190-1	Bacillus cereus	
753	W191-6	Bacillus wiedmannii	
754	W192-6	Bacillus mycoides	
755	W194-2	Bacillus aerius	
756	W199-4	Bacillus wiedmannii	
757	W210-5	Acinetobacter johnsonii	
758	W216-4	Bacillus toyonensis	
759	W218-4	Bacillus wiedmannii	
760	W219-5	Bacillus cereus	
761	W231-6	Bacillus stratosphericus	
762	W241-6	Enterococcus gallinarum	
763	W245-5	Acinetobacter johnsonii	
764	W253-6	Bacillus wiedmannii	
765	W301-5	Bacillus wiedmannii	
766	W304-5	Bacillus wiedmannii	
767	W349-1	Bacillus wiedmannii	
768	W357-1	Yokenella regensburgei	
769	W357-3	Bacillus wiedmannii	
770	W394-4	Bacillus wiedmannii	
771	W395-2	Bacillus mobilis	
772	W398-6	Enterococcus gallinarum	

773	W399-3	Bacillus wiedmannii	
774	W399-4	Acinetobacter vivianii	
775	W408-3	Bacillus wiedmannii	
776	W409-2	Bacillus wiedmannii	
777	W416-4	Bacillus proteolyticus	
778	W418-1	Bacillus wiedmannii	
779	W434-5	Bacillus wiedmannii	
780	W435-6	Bacillus wiedmannii	
781	W465-5	Bacillus wiedmannii	
782	W471-6	Bacillus wiedmannii	
783	W498-6	Bacillus wiedmannii	
784	W80-1	Bacillus mobilis	
785	W81-6	Bacillus mycoides	
786	W82-3	Bacillus mobilis	
787	W82-6	Bacillus mobilis	
788	W84-3	Bacillus mobilis	
789	W84-4	Bacillus mobilis	
790	W85-2	Bacillus wiedmannii	
791	W86-1	Bacillus mobilis	
792	W90-6	Bacillus toyonensis	
793	W94-2	Bacillus toyonensis	
794	W96-3	Bacillus mobilis	
795	W97-2	Escherichia fergusonii	
796	W99-5	Bacillus wiedmannii	
797	WJH1	Bacillus wiedmannii	
798	WJH-2	Stenotrophomonas maltophilia	
799	WY15-1	Bacillus wiedmannii	
800	WYY-1	Bacillus wiedmannii	
801	XJ115	Acinetobacter lactucae	
802	XJ39	Bacillus mobilis	
803	XJ88	[Pseudomonas] geniculata	
804	XJH1-5	Bacillus wiedmannii	
805	XSQ8-3	Brevibacillus halotolerans	
806	XSQ8-6	Proteus mirabilis	
807	XU	Bacillus wiedmannii	
808	YJ9	Bacillus mobilis	
809	Z100-2	Bacillus wiedmannii	
810	Z102-2	Bacillus wiedmannii	
811	Z106-4	Bacillus wiedmannii	
812	Z111-1	Bacillus pacificus	
813	Z112-3	Bacillus toyonensis	
814	Z113-2	Bacillus paranthracis	
815	Z113-6	Bacillus wiedmannii	

816	Z118-6	Bacillus wiedmannii	
817	Z120-4	Bacillus toyonensis	
818	Z126-1	Bacillus toyonensis	
819	Z133-4	Bacillus toyonensis	
820	Z13-5	Bacillus toyonensis	
821	Z140-4	Bacillus wiedmannii	
822	Z144-2	Bacillus wiedmannii	
823	Z147-4	Bacillus wiedmannii	
824	Z149-3	Bacillus wiedmannii	
825	Z149-5	Bacillus wiedmannii	
826	Z157-3	Bacillus wiedmannii	
827	Z163-2	Bacillus wiedmannii	
828	Z169-6	[Brevibacterium] frigoritolerans	
829	Z171-3	Bacillus wiedmannii	
830	Z176-4	Bacillus wiedmannii	
831	Z187-6	Bacillus wiedmannii	
832	Z193-5	Bacillus wiedmannii	
833	Z197-2	Bacillus toyonensis	
834	Z207-1	Bacillus wiedmannii	
835	Z210-5	Bacillus wiedmannii	
836	Z217-3	Bacillus toyonensis	
837	Z222-3	Bacillus wiedmannii	
838	Z223-2	Bacillus wiedmannii	
839	Z223-4	Bacillus wiedmannii	
840	Z223-5	Bacillus wiedmannii	
841	Z230-3	Bacillus wiedmannii	
842	Z234-1	Bacillus wiedmannii	
843	Z251-4	Bacillus funiculus	
844	Z299-5	Bacillus wiedmannii	
845	Z302-2	Bacillus wiedmannii	
846	Z306-5	Bacillus wiedmannii	
847	Z311-5	Bacillus pacificus	
848	Z314-6	Bacillus toyonensis	
849	Z317-2	Bacillus wiedmannii	
850	Z319-4	Bacillus wiedmannii	
851	Z32-1	Bacillus wiedmannii	
852	Z42-1	Bacillus wiedmannii	
853	Z50-3	Bacillus wiedmannii	
854	Z89-4	Brevibacillus formosus	
855	Z90-1	Bacillus wiedmannii	
856	Z90-3	Bacillus wiedmannii	
857	Z93-4	Bacillus wiedmannii	
858	ZJ189	Bacillus wiedmannii	

859	ZJ190	Bacillus wiedmannii	
860	ZJ192	Bacillus toyonensis	
861	ZJ197	Bacillus wiedmannii	
862	ZJ204	Bacillus toyonensis	