Supplementary Materials S1: The output of mRMR method for three species

1. The output of mRMR method for CJE

   (1) MaxRel features list

Order	Feature name	Score
1	cje02040	0.125
2	cje00521	0.104
3	cje00523	0.104
4	cje02030	0.101
5	cje00520	0.096
6	cje00040	0.089
7	cje00500	0.076
8	cje02020	0.074
9	cje00540	0.059
10	cje03018	0.041
11	cje00052	0.034
12	cje00920	0.028
13	cje00051	0.026
14	cje03010	0.025
15	cje00650	0.022
16	cje03440	0.02
17	cje04122	0.02
18	cje03060	0.02
19	cje01120	0.019
20	cje00010	0.019
21	cje00350	0.019
22	cje00730	0.018
23	cje00670	0.017
24	cje00740	0.017
25	cje00401	0.016
26	cje00620	0.016
27	cje00680	0.015
28	cje00300	0.014
29	cje00360	0.014
30	cje00240	0.012
31	cje00460	0.012
32	cje00630	0.011
33	cje00330	0.011
34	cje03410	0.011
35	cje00230	0.01
36	cje00770	0.01

37	cje00660	0.01
38	cje00380	0.01
39	cje00550	0.01
40	cje03070	0.01
41	cje00190	0.009
42	cje03420	0.009
43	cje01110	0.009
44	cje03430	0.009
45	cje00270	0.009
46	cje00030	0.008
47	cje00970	0.007
48	cje00760	0.007
49	cje00471	0.007
50	cje00640	0.006
51	cje03030	0.005
52	cje00290	0.005
53	cje00250	0.005
54	cje00260	0.005
55	cje00860	0.005
56	cje00061	0.004
57	cje00473	0.004
58	cje00310	0.002
59	cje00340	0.002
60	cje00564	0.002
61	cje00910	0.002
62	cje02010	0.002
63	cje00410	0.002
64	cje00280	0.002
65	cje00130	0.002
66	cje00400	0.001
67	cje00900	0.001
68	cje03020	0.001
69	cje00624	0.001
70	cje00450	0
71	cje00750	0
72	cje00720	0
73	cje00790	0
74	cje00562	0
75	cje00430	0
76	cje00480	0
77	cje01040	0
78	cje00561	0
79	cje01100	0

80	cje00020	0

(2) mRMR features list

Order	Feature name	Score
1	cje02040	0.125
2	cje00521	0.102
3	cje03018	0.03
4	cje00520	0.034
5	cje02030	0.027
6	cje00040	0.024
7	cje03440	0.015
8	cje00540	0.015
9	cje00010	0.015
10	cje00650	0.015
11	cje02020	0.018
12	cje00523	0.015
13	cje00740	0.014
14	cje03010	0.014
15	cje04122	0.015
16	cje00500	0.016
17	cje00730	0.013
18	cje00670	0.012
19	cje00300	0.011
20	cje00620	0.011
21	cje00350	0.01
22	cje03060	0.01
23	cje00920	0.009
24	cje00460	0.008
25	cje01120	0.008
26	cje00330	0.007
27	cje00550	0.007
28	cje00770	0.007
29	cje00052	0.007
30	cje03410	0.007
31	cje00230	0.006
32	cje00680	0.006
33	cje00051	0.006
34	cje03420	0.005
35	cje00240	0.005
36	cje00380	0.005
37	cje00760	0.004
38	cje00970	0.004
39	cje00860	0.004

40	cje00190	0.004
41	cje03430	0.003
42	cje00270	0.003
43	cje00660	0.003
44	cje03070	0.003
45	cje00401	0.003
46	cje00030	0.002
47	cje00630	0.002
48	cje00061	0.002
49	cje00471	0.002
50	cje00473	0.001
51	cje00250	0.001
52	cje00564	0
53	cje00260	0
54	cje00130	0
55	cje00910	-0.001
56	cje02010	-0.001
57	cje00310	-0.001
58	cje00624	-0.001
59	cje00290	-0.001
60	cje03030	-0.001
61	cje00640	-0.001
62	cje00360	-0.001
63	cje00480	-0.001
64	cje01040	-0.002
65	cje00562	-0.001
66	cje00410	-0.002
67	cje00750	-0.002
68	cje00790	-0.002
69	cje01110	-0.002
70	cje00780	-0.002
71	cje00900	-0.002
72	cje03020	-0.003
73	cje00561	-0.004
74	cje00430	-0.004
75	cje00280	-0.004
76	cje00450	-0.005
77	cje00400	-0.005
78	cje00340	-0.006
79	cje00720	-0.007
80	cje00020	-0.011
81	cje01100	-0.014

2. The output of mRMR method for ECP

(1) MaxRel features list

Order	Name	Score
1	ecp03070	0.052
2	ecp01100	0.048
3	ecp01110	0.037
4	ecp03020	0.031
5	ecp00340	0.031
6	ecp00900	0.028
7	ecp02010	0.028
8	ecp00300	0.026
9	ecp00230	0.026
10	ecp00440	0.025
11	ecp03060	0.025
12	ecp00240	0.025
13	ecp00660	0.025
14	ecp00520	0.022
15	ecp00523	0.021
16	ecp01120	0.021
17	ecp00190	0.02
18	ecp00670	0.02
19	ecp00623	0.02
20	ecp03420	0.02
21	ecp00521	0.02
22	ecp00500	0.02
23	ecp00590	0.019
24	ecp00760	0.019
25	ecp00020	0.019
26	ecp02060	0.017
27	ecp00010	0.017
28	ecp00250	0.017
29	ecp00550	0.017
30	ecp00720	0.016
31	ecp00290	0.015
32	ecp03030	0.015
33	ecp03018	0.015
34	ecp00061	0.015
35	ecp03440	0.014
36	ecp00051	0.014
37	ecp00471	0.014
38	ecp00592	0.014
39	ecp00473	0.014

40	ecp00361	0.014
41	ecp00364	0.014
42	ecp00052	0.014
43	ecp00643	0.013
44	ecp01040	0.013
45	ecp00790	0.013
46	ecp00330	0.013
47	ecp03410	0.012
48	ecp00400	0.012
49	ecp00770	0.011
50	ecp03010	0.011
51	ecp00750	0.011
52	ecp00260	0.011
53	ecp00562	0.011
54	ecp00910	0.011
55	ecp00030	0.011
56	ecp00785	0.011
57	ecp04122	0.011
58	ecp00450	0.011
59	ecp00730	0.01
60	ecp00280	0.01
61	ecp00401	0.009
62	ecp00511	0.009
63	ecp00930	0.009
64	ecp00903	0.009
65	ecp00040	0.008
66	ecp00740	0.008
67	ecp00480	0.008
68	ecp00640	0.008
69	ecp00380	0.007
70	ecp00410	0.007
71	ecp00650	0.007
72	ecp00630	0.007
73	ecp00680	0.006
74	ecp00860	0.006
75	ecp00281	0.006
76	ecp00310	0.006
77	ecp00633	0.006
78	ecp00540	0.005
79	ecp00053	0.004
80	ecp00270	0.004
81	ecp00071	0.004
82	ecp00561	0.004

83	ecp00430	0.004
84	ecp00920	0.004
85	ecp00620	0.004
86	ecp01053	0.003
87	ecp00564	0.002
88	ecp02020	0.002
89	ecp00360	0.002
90	ecp00970	0.002
91	ecp00350	0.002
92	ecp00627	0.002
93	ecp00600	0.002
94	ecp00460	0.001
95	ecp03430	0.001
96	ecp00780	0.001
97	ecp00130	0.001
98	ecp02040	0.001
99	ecp00363	0.001
100	ecp00362	0
101	ecp00625	0
102	ecp00626	0

(2) mRMR features list

Order	Name	Score
1	ecp03070	0.052
2	ecp01100	0.035
3	ecp03020	0.027
4	ecp02010	0.019
5	ecp00440	0.018
6	ecp00520	0.019
7	ecp00590	0.017
8	ecp00340	0.018
9	ecp00900	0.017
10	ecp00230	0.017
11	ecp00623	0.016
12	ecp00300	0.017
13	ecp03060	0.016
14	ecp00523	0.015
15	ecp00010	0.013
16	ecp00660	0.013
17	ecp03420	0.013
18	ecp00760	0.013
19	ecp00250	0.013
20	ecp00550	0.012

21	ecp00670	0.012
22	ecp01110	0.012
23	ecp01040	0.012
24	ecp00190	0.012
25	ecp00592	0.011
26	ecp00500	0.011
27	ecp00061	0.01
28	ecp00240	0.009
29	ecp00361	0.009
30	ecp04122	0.009
31	ecp00785	0.009
32	ecp00473	0.009
33	ecp00562	0.009
34	ecp00750	0.009
35	ecp00051	0.009
36	ecp01120	0.009
37	ecp00790	0.008
38	ecp00521	0.009
39	ecp00643	0.009
40	ecp03030	0.009
41	ecp00511	0.008
42	ecp03018	0.008
43	ecp00471	0.007
44	ecp00730	0.007
45	ecp00290	0.007
46	ecp00052	0.006
47	ecp00020	0.006
48	ecp00330	0.006
49	ecp00450	0.005
50	ecp03410	0.005
51	ecp03010	0.005
52	ecp00860	0.005
53	ecp00910	0.005
54	ecp02060	0.005
55	ecp03440	0.005
56	ecp00400	0.005
57	ecp00030	0.005
58	ecp00633	0.004
59	ecp00480	0.004
60	ecp00040	0.004
61	ecp00364	0.004
62	ecp00410	0.003
63	ecp00260	0.003

64	ecp00740	0.003
65	ecp00540	0.003
66	ecp00770	0.003
67	ecp00930	0.003
68	ecp00561	0.002
69	ecp00720	0.002
70	ecp00401	0.002
71	ecp00680	0.001
72	ecp00970	0
73	ecp02020	0
74	ecp01053	0
75	ecp00280	-0.001
76	ecp00130	-0.001
77	ecp00430	-0.001
78	ecp00627	-0.001
79	ecp00564	-0.001
80	ecp02040	-0.001
81	ecp00053	-0.001
82	ecp00630	-0.001
83	ecp00780	-0.001
84	ecp00363	-0.002
85	ecp00920	-0.002
86	ecp02030	-0.002
87	ecp00903	-0.002
88	ecp00600	-0.002
89	ecp00350	-0.003
90	ecp00640	-0.004
91	ecp00360	-0.004
92	ecp00270	-0.004
93	ecp00460	-0.005
94	ecp00625	-0.005
95	ecp00310	-0.005
96	ecp03430	-0.005
97	ecp00620	-0.006
98	ecp00380	-0.007
99	ecp00626	-0.007
100	ecp00281	-0.008
101	ecp00071	-0.009
102	ecp00650	-0.011
103	ecp00362	-0.014

3. The output of mRMR method for PAE

(1) MaxRel features list

Order	Name	Score
1	pae03070	0.111
2	pae02040	0.059
3	pae02030	0.058
4	pae01100	0.021
5	pae00630	0.019
6	pae01110	0.017
7	pae00340	0.017
8	pae00680	0.015
9	pae02020	0.014
10	pae00471	0.012
11	pae01120	0.012
12	pae00620	0.012
13	pae03440	0.012
14	pae03060	0.012
15	pae00230	0.012
16	pae03010	0.011
17	pae00190	0.011
18	pae00270	0.01
19	pae00561	0.01
20	pae00720	0.01
21	pae00970	0.009
22	pae00290	0.009
23	pae00626	0.009
24	pae04122	0.009
25	pae00240	0.009
26	pae00670	0.009
27	pae03410	0.008
28	pae00030	0.008
29	pae00020	0.008
30	pae03430	0.008
31	pae00360	0.008
32	pae00473	0.008
33	pae00250	0.008
34	pae00625	0.008
35	pae00450	0.007
36	pae00072	0.007
37	pae03030	0.007
38	pae00910	0.007
39	pae00010	0.007
40	pae03020	0.007

41	pae00564	0.007
42	pae00785	0.007
43	pae00623	0.006
44	pae01040	0.006
45	pae00650	0.006
46	pae02010	0.006
47	pae00730	0.006
48	pae00640	0.006
49	pae00550	0.006
50	pae00780	0.005
51	pae00061	0.005
52	pae01053	0.005
53	pae00071	0.005
54	pae00520	0.005
55	pae00280	0.005
56	pae00660	0.005
57	pae00790	0.004
58	pae03420	0.004
59	pae00750	0.004
60	pae00040	0.004
61	pae00622	0.004
62	pae00311	0.004
63	pae00300	0.003
64	pae00903	0.003
65	pae00051	0.003
66	pae00362	0.003
67	pae00740	0.003
68	pae02060	0.003
69	pae00562	0.003
70	pae00410	0.003
71	pae00380	0.003
72	pae00460	0.002
73	pae00633	0.002
74	pae00627	0.002
75	pae00310	0.002
76	pae00900	0.002
77	pae00260	0.002
78	pae00592	0.002
79	pae00281	0.002
80	pae00480	0.002
81	pae00401	0.002
82	pae00860	0.002
83	pae00770	0.002

84	pae00330	0.001
85	pae00361	0.001
86	pae00930	0.001
87	pae00760	0.001
88	pae03018	0.001
89	pae03450	0.001
90	pae00440	0.001
91	pae00565	0.001
92	pae00364	0.001
93	pae00053	0.001
94	pae00130	0.001
95	pae00791	0.001
96	pae00350	0.001
97	pae00643	0
98	pae00363	0
99	pae00920	0
100	pae00430	0
101	pae00523	0
102	pae00500	0
103	pae00624	0
104	pae00540	0
105	pae00052	0
106	pae00521	0
107	pae00400	0

(2) mRMR features list

Order	Name	Score
1	pae03070	0.111
2	pae02040	0.059
3	pae00630	0.014
4	pae00340	0.012
5	pae02030	0.015
6	pae00471	0.01
7	pae00190	0.008
8	pae00680	0.008
9	pae00270	0.006
10	pae00561	0.006
11	pae01110	0.006
12	pae00360	0.006
13	pae00970	0.006
14	pae04122	0.006
15	pae03020	0.005
16	pae02020	0.006

17	pae03060	0.006
18	pae00030	0.005
19	pae03410	0.005
20	pae00626	0.005
21	pae00910	0.005
22	pae01053	0.004
23	pae02010	0.004
24	pae01100	0.004
25	pae00564	0.004
26	pae00623	0.004
27	pae03010	0.003
28	pae00620	0.004
29	pae00290	0.003
30	pae00520	0.003
31	pae00311	0.003
32	pae03440	0.003
33	pae00061	0.003
34	pae00250	0.003
35	pae00625	0.003
36	pae01120	0.003
37	pae00670	0.003
38	pae00473	0.002
39	pae00780	0.002
40	pae00450	0.002
41	pae00072	0.002
42	pae00633	0.002
43	pae00785	0.002
44	pae01040	0.002
45	pae00622	0.002
46	pae00020	0.002
47	pae02060	0.001
48	pae00562	0.001
49	pae00860	0.001
50	pae00230	0.001
51	pae03450	0
52	pae00790	0
53	pae00750	0
54	pae00480	0
55	pae00440	0
56	pae00051	0
57	pae00730	0
58	pae00401	0
59	pae00650	0

60	pae00791	-0.001
61	pae00010	-0.001
62	pae00550	-0.001
63	pae00363	-0.001
64	pae00460	-0.001
65	pae00565	-0.001
66	pae00720	-0.001
67	pae00130	-0.001
68	pae00260	-0.001
69	pae00040	-0.001
70	pae03430	-0.001
71	pae00660	-0.001
72	pae00361	-0.001
73	pae00624	-0.002
74	pae00640	-0.002
75	pae00760	-0.002
76	pae00350	-0.002
77	pae00540	-0.002
78	pae00920	-0.002
79	pae00430	-0.002
80	pae00592	-0.002
81	pae00740	-0.002
82	pae00643	-0.002
83	pae00330	-0.003
84	pae03030	-0.003
85	pae00071	-0.003
86	pae00300	-0.003
87	pae00500	-0.003
88	pae00627	-0.003
89	pae00590	-0.003
90	pae00523	-0.004
91	pae00770	-0.004
92	pae00400	-0.004
93	pae00280	-0.004
94	pae00364	-0.004
95	pae00052	-0.005
96	pae00240	-0.005
97	pae00900	-0.006
98	pae00053	-0.006
99	pae03420	-0.006
100	pae00362	-0.006
101	pae03018	-0.007
102	pae00903	-0.007

103	pae00521	-0.007
104	pae00410	-0.008
105	pae00380	-0.009
106	pae00930	-0.01
107	pae00281	-0.011
108	pae00310	-0.012

Supplementary Materials S2: The IFS tables for three species.

(1) The IFS table for CJE

Index	Sensitivity	Specificity	Accuracy
4	0.731959	0.938144	0.90378
5	0.783505	0.954639	0.926117
6	0.742268	0.948454	0.914089
7	0.783505	0.950515	0.92268
8	0.804124	0.948454	0.924399
9	0.773196	0.956701	0.926117
10	0.793814	0.964948	0.936426
11	0.793814	0.956701	0.929553
12	0.814433	0.973196	0.946735
13	0.814433	0.969072	0.943299
14	0.824742	0.964948	0.941581
15	0.793814	0.964948	0.936426
16	0.773196	0.952577	0.92268
17	0.824742	0.956701	0.934708
18	0.804124	0.964948	0.938144
19	0.824742	0.964948	0.941581
20	0.783505	0.958763	0.929553
21	0.773196	0.960825	0.929553
22	0.742268	0.958763	0.92268
23	0.762887	0.956701	0.924399
24	0.762887	0.960825	0.927835
25	0.793814	0.958763	0.931271
26	0.783505	0.960825	0.931271
27	0.804124	0.962887	0.936426
28	0.793814	0.962887	0.934708
29	0.773196	0.962887	0.931271
30	0.783505	0.960825	0.931271
31	0.742268	0.960825	0.924399
32	0.783505	0.962887	0.93299
33	0.783505	0.960825	0.931271
34	0.742268	0.964948	0.927835
35	0.742268	0.96701	0.929553
36	0.731959	0.958763	0.920962
37	0.783505	0.964948	0.934708
38	0.773196	0.971134	0.938144
39	0.752577	0.960825	0.926117
40	0.773196	0.962887	0.931271
41	0.783505	0.962887	0.93299

42	0.762887	0.962887	0.929553
43	0.773196	0.969072	0.936426
44	0.783505	0.958763	0.929553
45	0.793814	0.960825	0.93299
46	0.752577	0.964948	0.929553
47	0.773196	0.964948	0.93299
48	0.783505	0.964948	0.934708
49	0.71134	0.954639	0.914089
50	0.762887	0.946392	0.915808
51	0.783505	0.960825	0.931271
52	0.773196	0.971134	0.938144
53	0.731959	0.960825	0.92268
54	0.742268	0.954639	0.919244
55	0.773196	0.969072	0.936426
56	0.752577	0.964948	0.929553
57	0.731959	0.975258	0.934708
58	0.752577	0.975258	0.938144
59	0.659794	0.969072	0.917526
60	0.783505	0.969072	0.938144
61	0.773196	0.973196	0.939863
62	0.773196	0.958763	0.927835
63	0.742268	0.962887	0.926117
64	0.752577	0.964948	0.929553
65	0.742268	0.958763	0.92268
66	0.752577	0.962887	0.927835
67	0.752577	0.973196	0.936426
68	0.71134	0.975258	0.931271
69	0.793814	0.960825	0.93299
70	0.742268	0.971134	0.93299
71	0.804124	0.969072	0.941581
72	0.752577	0.960825	0.926117
73	0.773196	0.981443	0.946735
74	0.752577	0.969072	0.93299
75	0.752577	0.973196	0.936426
76	0.762887	0.973196	0.938144
77	0.701031	0.971134	0.926117
78	0.762887	0.964948	0.931271
79	0.659794	0.973196	0.920962
80	0.742268	0.971134	0.93299
81	0.752577	0.969072	0.93299

(2) The IFS table for ECP

Index	Sensitivity	Specificity	Accuracy
4	0.718954	0.935948	0.899782
5	0.712418	0.935948	0.898693
6	0.751634	0.941176	0.909586
7	0.751634	0.946405	0.913943
8	0.738562	0.94902	0.913943
9	0.745098	0.952941	0.918301
10	0.75817	0.94902	0.917211
11	0.745098	0.952941	0.918301
12	0.764706	0.946405	0.916122
13	0.75817	0.956863	0.923747
14	0.745098	0.956863	0.921569
15	0.72549	0.956863	0.918301
16	0.72549	0.955556	0.917211
17	0.738562	0.950327	0.915033
18	0.738562	0.956863	0.920479
19	0.784314	0.952941	0.924837
20	0.79085	0.966013	0.936819
21	0.771242	0.964706	0.932462
22	0.751634	0.955556	0.921569
23	0.745098	0.960784	0.924837
24	0.72549	0.95817	0.91939
25	0.751634	0.95817	0.923747
26	0.751634	0.951634	0.918301
27	0.771242	0.956863	0.925926
28	0.751634	0.962092	0.927015
29	0.751634	0.962092	0.927015
30	0.732026	0.960784	0.922658
31	0.738562	0.969935	0.931373
32	0.705882	0.968627	0.924837
33	0.75817	0.959477	0.925926
34	0.738562	0.96732	0.929194
35	0.810458	0.966013	0.940087
36	0.75817	0.960784	0.927015
37	0.784314	0.96732	0.936819
38	0.79085	0.963399	0.934641
39	0.777778	0.969935	0.937908
40	0.751634	0.964706	0.929194
41	0.823529	0.962092	0.938998
42	0.79085	0.968627	0.938998
43	0.830065	0.969935	0.946623

44	0.803922	0.969935	0.942266
45	0.830065	0.966013	0.943355
46	0.784314	0.96732	0.936819
47	0.784314	0.971242	0.940087
48	0.784314	0.971242	0.940087
49	0.823529	0.969935	0.945534
50	0.777778	0.973856	0.941176
51	0.784314	0.962092	0.932462
52	0.816993	0.963399	0.938998
53	0.777778	0.964706	0.933551
54	0.849673	0.969935	0.949891
55	0.751634	0.969935	0.933551
56	0.79085	0.966013	0.936819
57	0.777778	0.96732	0.93573
58	0.784314	0.963399	0.933551
59	0.823529	0.971242	0.946623
60	0.823529	0.972549	0.947712
61	0.79085	0.969935	0.940087
62	0.797386	0.969935	0.941176
63	0.797386	0.966013	0.937908
64	0.797386	0.973856	0.944444
65	0.79085	0.968627	0.938998
66	0.79085	0.963399	0.934641
67	0.836601	0.977778	0.954248
68	0.823529	0.973856	0.948802
69	0.777778	0.966013	0.934641
70	0.843137	0.968627	0.947712
71	0.797386	0.969935	0.941176
72	0.823529	0.969935	0.945534
73	0.797386	0.972549	0.943355
74	0.810458	0.972549	0.945534
75	0.803922	0.969935	0.942266
76	0.862745	0.976471	0.957516
77	0.843137	0.96732	0.946623
78	0.830065	0.968627	0.945534
79	0.797386	0.973856	0.944444
80	0.823529	0.969935	0.945534
81	0.816993	0.96732	0.942266
82	0.784314	0.977778	0.945534
83	0.784314	0.968627	0.937908
84	0.79085	0.971242	0.941176
85	0.856209	0.975163	0.955338
86	0.862745	0.975163	0.956427

87	0.843137	0.968627	0.947712
88	0.810458	0.969935	0.943355
89	0.823529	0.975163	0.949891
90	0.823529	0.971242	0.946623
91	0.797386	0.969935	0.941176
92	0.823529	0.977778	0.95207
93	0.797386	0.969935	0.941176
94	0.75817	0.964706	0.930283
95	0.843137	0.977778	0.955338
96	0.797386	0.96732	0.938998
97	0.803922	0.975163	0.946623
98	0.823529	0.973856	0.948802
99	0.784314	0.968627	0.937908
100	0.803922	0.96732	0.940087
101	0.810458	0.966013	0.940087
102	0.797386	0.968627	0.940087
103	0.797386	0.968627	0.940087

(3) The IFS table for PAE

Index	Sensitivity	Specificity	Accuracy
4	0.52381	0.948148	0.877425
5	0.529101	0.953439	0.882716
6	0.529101	0.951323	0.880952
7	0.507937	0.951323	0.877425
8	0.518519	0.960847	0.887125
9	0.534392	0.962963	0.891534
10	0.52381	0.965079	0.891534
11	0.52381	0.969312	0.895062
12	0.539683	0.962963	0.892416
13	0.539683	0.967196	0.895944
14	0.513228	0.967196	0.891534
15	0.550265	0.965079	0.895944
16	0.555556	0.959788	0.892416
17	0.539683	0.971429	0.899471
18	0.550265	0.966138	0.896825
19	0.555556	0.97037	0.901235
20	0.555556	0.965079	0.896825
21	0.550265	0.969312	0.899471
22	0.587302	0.965079	0.902116
23	0.592593	0.978836	0.914462
24	0.560847	0.971429	0.902998

25	0.592593	0.969312	0.906526
26	0.603175	0.964021	0.90388
27	0.571429	0.972487	0.905644
28	0.566138	0.97037	0.902998
29	0.571429	0.968254	0.902116
30	0.560847	0.977778	0.908289
31	0.619048	0.966138	0.908289
32	0.592593	0.974603	0.910935
33	0.613757	0.967196	0.908289
34	0.592593	0.969312	0.906526
35	0.582011	0.971429	0.906526
36	0.587302	0.974603	0.910053
37	0.592593	0.968254	0.905644
38	0.571429	0.971429	0.904762
39	0.560847	0.975661	0.906526
40	0.555556	0.978836	0.908289
41	0.597884	0.973545	0.910935
42	0.544974	0.973545	0.902116
43	0.57672	0.972487	0.906526
44	0.587302	0.972487	0.908289
45	0.57672	0.965079	0.900353
46	0.566138	0.973545	0.905644
47	0.571429	0.969312	0.902998
48	0.566138	0.977778	0.909171
49	0.571429	0.969312	0.902998
50	0.555556	0.962963	0.895062
51	0.582011	0.971429	0.906526
52	0.555556	0.969312	0.900353
53	0.534392	0.972487	0.899471
54	0.608466	0.967196	0.907407
55	0.544974	0.972487	0.901235
56	0.603175	0.97037	0.909171
57	0.518519	0.978836	0.902116
58	0.608466	0.972487	0.911817
59	0.544974	0.973545	0.902116
60	0.587302	0.973545	0.909171
61	0.608466	0.97037	0.910053
62	0.518519	0.968254	0.893298
63	0.582011	0.971429	0.906526
64	0.529101	0.974603	0.900353
65	0.592593	0.983069	0.917989
66	0.571429	0.966138	0.900353
67	0.529101	0.982011	0.906526

68	0.52381	0.969312	0.895062
69	0.534392	0.972487	0.899471
70	0.544974	0.974603	0.902998
71	0.555556	0.971429	0.902116
72	0.529101	0.969312	0.895944
73	0.555556	0.973545	0.90388
74	0.539683	0.975661	0.902998
75	0.52381	0.973545	0.898589
76	0.507937	0.977778	0.899471
77	0.534392	0.965079	0.893298
78	0.52381	0.97037	0.895944
79	0.534392	0.980952	0.906526
80	0.566138	0.975661	0.907407
81	0.529101	0.971429	0.897707
82	0.555556	0.975661	0.905644
83	0.550265	0.974603	0.90388
84	0.518519	0.974603	0.898589
85	0.566138	0.973545	0.905644
86	0.502646	0.971429	0.893298
87	0.513228	0.972487	0.895944
88	0.534392	0.974603	0.901235
89	0.529101	0.969312	0.895944
90	0.52381	0.977778	0.902116
91	0.550265	0.969312	0.899471
92	0.550265	0.974603	0.90388
93	0.539683	0.974603	0.902116
94	0.529101	0.97672	0.902116
95	0.518519	0.975661	0.899471
96	0.529101	0.971429	0.897707
97	0.534392	0.985185	0.910053
98	0.529101	0.97672	0.902116
99	0.534392	0.972487	0.899471
100	0.502646	0.984127	0.90388
101	0.550265	0.971429	0.901235
102	0.544974	0.973545	0.902116
103	0.518519	0.975661	0.899471
104	0.497354	0.977778	0.897707
105	0.539683	0.983069	0.909171
106	0.518519	0.97672	0.900353
107	0.550265	0.974603	0.90388
108	0.555556	0.977778	0.907407

Supplementary Materials S3: The important KEGG pathways and their classes for identification of virulence factors of three species.

1. KEGG pathways and their classes for CJE

Index	Feature name	Pathway name	Class
1	cje02040	Flagellar assembly	Cellular Processes
2	cje00521	Streptomycin biosynthesis	Metabolism
3	cje03018	RNA degradation	Genetic Information Processing
4	cje00520	Amino sugar and nucleotide sugar metabolism	Metabolism
5	cje02030	Bacterial chemotaxis	Cellular Processes
6	cje00040	Pentose and glucuronate interconversions	Metabolism
7	cje03440	Homologous recombination	Genetic Information Processing
8	cje00540	Lipopolysaccharide biosynthesis	Metabolism
9	cje00010	Glycolysis / Gluconeogenesis	Metabolism
10	cje00650	Butanoate metabolism	Metabolism
11	cje02020	Two-component system	Environmental Information Processing
12	cje00523	Polyketide sugar unit biosynthesis	Metabolism

2. KEGG pathways and their classes for ECP

Index	Feature name	Pathway name	Class
1	ecp03070	Bacterial secretion system	Environmental Information Processing
2	ecp01100	Metabolic pathways	Metabolism
3	ecp01110	Biosynthesis of secondary metabolites	Metabolism
4	ecp03020	RNA polymerase	Genetic Information Processing
5	ecp00340	Histidine metabolism	Metabolism
6	ecp00900	Terpenoid backbone biosynthesis	Metabolism
7	ecp02010	ABC transporters	Environmental Information Processing

8	ecp00300	Lysine biosynthesis	Metabolism
9	ecp00230	Purine metabolism	Metabolism
10	ecp00440	Phosphonate and phosphinate metabolism	Metabolism
11	ecp03060	Protein export	Genetic Information Processing
12	ecp00240	Pyrimidine metabolism	Metabolism
13	ecp00660	C5-Branched dibasic acid metabolism	Metabolism
14	ecp00520	Amino sugar and nucleotide sugar metabolism	Metabolism
15	ecp00523	Polyketide sugar unit biosynthesis	Metabolism
16	ecp01120	Microbial metabolism in diverse environments	Metabolism
17	ecp00190	Oxidative phosphorylation	Metabolism
18	ecp00670	One carbon pool by folate	Metabolism
19	ecp00623	Toluene degradation	Metabolism
20	ecp03420	Nucleotide excision repair	Genetic Information Processing
21	ecp00521	Streptomycin biosynthesis	Metabolism

3. KEGG pathways and their classes for PAE

Index	**Feature name**	**Pathway name**	**Class**
1	pae03070	Bacterial secretion system	Environmental Information Processing
2	pae02040	Flagellar assembly	Cellular Processes
3	pae02030	Bacterial chemotaxis	Cellular Processes
4	pae01100	Metabolic pathways	Metabolism
5	pae00630	Glyoxylate and dicarboxylate metabolism	Metabolism
6	pae01110	Biosynthesis of secondary metabolites	Metabolism
7	pae00340	Histidine metabolism	Metabolism
8	pae00680	Methane metabolism	Metabolism
9	pae02020	Two-component system	Environmental Information Processing
10	pae00471	D-Glutamine and D-glutamate metabolism	Metabolism
11	pae01120	Microbial metabolism in diverse environments	Metabolism
12	pae00620	Pyruvate metabolism	Metabolism

13	pae03440	Homologous recombination	Genetic Information Processing
14	pae03060	Protein export	Genetic Information Processing
15	pae00230	Purine metabolism	Metabolism
16	pae03010	Ribosome	Genetic Information Processing
17	pae00190	Oxidative phosphorylation	Metabolism
18	pae00270	Cysteine and methionine metabolism	Metabolism
19	pae00561	Glycerolipid metabolism	Metabolism
20	pae00720	Carbon fixation pathways in prokaryotes	Metabolism
21	pae00970	Aminoacyl-tRNA biosynthesis	Genetic Information Processing
22	pae00290	Valine, leucine and isoleucine biosynthesis	Metabolism