

**Table S2** List of 87 sequence types (STs) and their first BLAST hit results for all seven allele sequences coming from *H. pylori* strains with EPIYA-ABD motif pattern.

No	ST number	<i>atpA</i>		<i>atpA</i>		<i>atpA</i>		<i>atpA</i>		<i>atpA</i>		<i>atpA</i>		<i>atpA</i>		Minimum percent identity	Maximum percent identity
		Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity		
1	44	F32	100	F32	99.76	F32	100	F32	100	F32	100	F32	100	F32	100	99.76	100
2	45	DU15	100	DU15	100	DU15	100	DU15	100	DU15	100	DU15	100	DU15	100	100	100
3	3032	35A	100	35A	100	35A	100	35A	100	35A	100	35A	100	35A	100	100	100
4	3034	83	100	83	100	83	100	83	100	83	100	83	100	83	100	100	100
5	3038	F57	100	F57	100	F57	100	F57	100	F57	100	F57	100	F57	100	100	100
6	4	Hpfe073	99.2	Hpfe066	99.51	F21 Hpfe029 Hpfe080	97.62	F72	99.25	F13	98.25	F57 MKF10	98.97	Hpfe027 Hpfe068	98.43	97.62	99.51
7	39	#6 3401	99.52	Hpfe086 Hpfe088	99.02	Hpfe036 Hpfe057	98.1	F72 Hpfe033	99.5	Hpfe010	98.9	Hpfe068	99.31	Hpfe082	98.43	98.1	99.52
8	40	Hpfe022 Hpfe038 Hpfe088	99.04	Hpfe100	99.51	Hpfe033 Hpfe071 F21	98.32	F21 Hpfe0008 Hpfe074 Hpfe077	99.5	Hpfe051 Hpfe074	98.68	Hpfe038 Hpfe106	99.15	H-137	98.63	98.32	99.51
9	47	Hpfe073	99.04	Hpfe033 Hpfe049	99.51	F16	99.52	Hpfe0008 Hpfe074 Hpfe077	99.75	F70 Hpfe086 Hpfe122 JSHR 3 JSHR3	98.5	Hpfe077	99.66	Hpfe057	99.41	98.5	99.75
10	406	Hpfe0011	99.52	Hpfe039	99.51	Hpfe122	98.33	Hpfe0008 Hpfe074 Hpfe077	98.74	Hpfe0004 Hpfe022	99.12	Hpfe054	99.15	H-137	99.22	98.33	99.52
11	409	Hpfe0007	99.68	Hpfe069 Hpfe071 Hpfe070	99.02	F90 F72	98.33	Hpfe0013	99.75	Hpfe080	98.68	Hpfe061 Hpfe077	99.32	Hpfe0002	99.22	98.33	99.75
12	411	Hpfe073	99.51	Hpfe0008	99.51	Hpfe048	98.57	Hpfe0011 Hpfe071	99.5	Hpfe106	99.34	Hpfe086 Hpfe118	99.66	Hpfe057	99.61	98.57	99.66

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		Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity		
13	660	Hpfe058	99.68	Hpfe022	99.27	Hpfe039	98.57	Hpfe0011	99.75	Hpfe079	98.25	H-137	99.15	F70	98.63	98.25	99.75
						Hpfe081 Hpfe118		Hpfe071		Hpfe107		Hpfe0008 Hpfe054		Hpbs1 Hpfe054			
14	691	Hpfe058	99.52	H-137	98.778	Hpfe0012	99.05	Hpfe072	99.5	Hpfe095	99.34	F57 MKF10	98.46	JSHR 3 JSHR3	99.8	98.46	99.8
15	704	#6 Hpfe073	99.36	F38	99.27	Hpfe104	97.62	Hpfe0008 Hpfe074 Hpfe077	99.75	UM066	99.12	Hpfe088	99.66	#3	100	97.62	100
16	725	Hpfe049	99.04	Hpfe052	99.51	F21	99.52	Hpfe0008 Hpfe033 Hpfe040 Hpfe074 Hpfe077	99.75	Hpfe051	98.9	Hpfe073	99.83	Hpfe110 UM066	99.8	98.9	99.83
17	809	Hpfe103	99.68	H-137 Hpfe126	99.02	Hpbs1	98.57	Hpfe022 Hpfe023	99.5	Hpfe080	98.68	Hpfe122	99.66	Hpfe077	96.47	96.47	99.68
18	1036	F57	99.36	F34 Hpfe077 Hpfe088	99.27	Hpfe059	99.29	Hpfe062	100	Hpfe066	99.12	Hpfe038 Hpfe060 Hpfe106	99.32	Hpfe057 MKM6	99.61	99.12	100
19	1291	Hpfe0001 JSHR 3 JSHR3	99.2	Hpfe032 Hpfe033	99.78	Hpfe0001	98.57	#6 Hpfe049 Hpfe092	99.25	DU15 83	99.12	Hpfe022 Hpfe038 Hpfe060 Hpfe061 Hpfe074	99.49	Hpfe0002	99.02		
20	1324	F21	99.36	Hpfe066	98.78	Hpfe024	98.33	JSHR 3 JSHR3	100	F24 F72 Hpfe0006	99.34	F21 Hpfe022	99.66	JSHR 3 JSHR3	100	98.33	100
21	1633	Hpfe062	99.04	Hpfe052 Hpfe079 Hpfe080	99.76	Hpfe065	98.33	Hpfe120	99.75	UM066	99.12	Hpfe038 Hpfe060	99.68	Hpfe110 UM066	99.61	98.33	99.76

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		Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity		
				Hpfe107													
22	1665	Hpfe049	99.68	#6 Hpfe073 Hpfe075 Hpfe079 Hpfe107	98.78	Hpfe033 Hpbs1	98.57	F72 Hpfe0004	99.25	83 DU15 F13 F21	98.68	Hpfe100	99.66	Hpfe110 UM066	100	98.57	100
23	1726	#6	99.68	Hpfe079 Hpfe107	99.76	Hpfe065 Hpfe068	98.08	Hpfe068 Hpfe072 Hpfe092	99.5	DU15 F21	98.03	Hpfe0006 Hpfe039	98.8	Hpfe051	98.63	98.03	99.76
24	1811	Hp238	98.88	Hpfe0002 Hpfe039 Hpfe083	99.27	Hpfe081	98.56	F21 Hpfe0008 Hpfe074 Hpfe077 Hpfe120	99.75	Hpfe024	98.47	Hpfe064	99.66	#3	99.8	98.47	99.8
25	1821	Hpfe022 Hpfe029 Hpfe073 Hpfe088	99.2	Hpfe052 Hpfe079 Hpfe080 Hpfe107	99.51	Hpfe076	97.62	F70 Hpfe083 MKF8	99.5	Hpfe126 JSHR3	97.59	Hpfe064	99.66	35A	100	97.59	100
26	1209	Hpfe073	99.04	F67 F78 F90 Hpfe0013	99.02	Hpfe065	98.57	F72	99.5	Hpfe062 F13	97.81	F21 F57 Hp238 MKF10	98.46	Hpfe123	99.02	97.81	99.5
27	1469	Hpfe0003	99.04	Hpfe086	99.51	Hpfe076	97.62	Hpfe0008 Hpfe074 Hpfe077	100	Hpfe086	98.8	Hpfe038 Hpfe060	99.66	Hpfe0011 Hpfe078	98.23	97.62	100
28	1607	Hpfe033 Hpfe073	98.88	Hpfe088	99.51	F21	97.38	F72 Hpfe0007 Hpfe029 Hpfe066	99.5	Hpfe061	97.59	F57 Hp238 MKF10	98.97	Hpfe123	98.82	97.38	99.51

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		Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity		
29	1841	Hp238	98.88	Hpfe033 Hpfe049 Hpfe066 Hpfe086 Hpfe100	97.81	Hpfe039	98.1	Hpfe0011 Hpfe071	99.75	Hpfe0012	98.25	Hpfe088	99.66	Hpfe092	99.61	97.81	99.75
30	2079	H-137 Hpfe068	99.2	Hpfe052 Hpfe079 Hpfe080 Hpfe107	99.02	3401 Hpfe0008	98.1	Hpfe062	100	Hpfe0012	98.9	DU15	98.8	F13 Hpfe0002	98.63	98.1	100
31	2082	Hpfe0001 Hpfe095	99.52	Hpfe079 Hpfe107	99.27	Hpbs1	98.57	Hpfe103	99.5	Hpfe061	99.12	Hpfe0008 Hpfe086 Hpfe118	99.83	Hpfe102	98.82	98.57	99.83
32	2088	Hpfe068 Hpfe095	99.36	H-137 Hpfe072 Hpfe086 Hpfe126	99.02	Hpfe077	97.62	Hpfe010 Hpfe062	99.5	Hpfe056	98.9	Hpfe062	99.32	H-137 JSHR 3 JSHR3	98.82	97.62	99.5
33	2094	Hpfe0001	99.36	Hpfe071	99.76	Hpfe0002	97.38	Hp238 UM066	99.5	Hpfe033 Hpfe051 Hpfe074	98.68	Hpfe023 Hpfe078 Hpfe088	99.66	F70	98.82	97.38	99.76
34	2096	3401 Hpfe058 Hpfe106	98.88	Hpfe068	99.76	Hpfe036	98.81	Hpfe0011 Hpfe071	99.75	Hpfe037 Hpfe104	98.47	Hpfe077	99.32	Hpfe103	98.43	98.43	99.76
35	2112	Hpfe059 Hpfe100	99.68	Hpfe040	99.02	Hpfe071	98.81	83 Hpfe079	99.25	Hpfe066	98.68	Hpfe038	100	JSHR 3 JSHR3	99.61	98.68	100
36	2116	JSHR 3 JSHR3	99.2	Hpfe106	98.78	83 Hpfe081	98.57	Hpfe082	100	Hpfe061 Hpfe110	98.47	F21 Hpfe022 Hpfe074	99.49	#3 TN2wt	98.04	98.04	100
37	2118	3401 Hpfe010	99.2	Hpfe075 Hpfe079	99.51	#6 F13	98.33	Hpfe062	99.25	Hpfe0006	99.12	F21 Hpfe038	99.49	H-137 Hpfe095	99.02	98.33	99.51

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		Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity		
				Hpfe107								Hpfe060		Hpfe102			
38	2126	3401	99.2	Hpfe052 Hpfe079 Hpfe080 Hpfe107	99.51	MKF10	99.05	Hpfe0008 Hpfe022 Hpfe074 Hpfe077 Hpfe120	99.5	Hpfe024	99.56	Hpfe022 Hpfe038 Hpfe060 Hpfe061 Hpfe074	99.49	Hpfe085	98.63	98.63	99.56
39	2145	F21 Hpfe058	99.53	Hpfe052 Hpfe079 Hpfe080 Hpfe106 Hpfe107	99.27	Hpfe076	98.33	Hpfe093	99.5	Hpfe080	98.9	Hpfe106	99.32	Hpfe027	99.22	98.33	99.53
40	2159	Hpfe073	99.36	Hpfe052	99.02	MKF10	98.81	Hpfe0011 Hpfe071	99.5	Hpfe036 Hpfe059	98.47	Hpfe055 Hpfe100	99.66	Hpfe080 Hpfe102 MKF8	98.63	98.47	99.66
41	2163	#5 Hpfe057	99.52	Hpfe079 Hpfe107	99.02	GD63 Hpfe0012	98.33	F30 Hpfe0011 Hpfe0012 Hpfe058 Hpfe071 MKM1	99.25	Hpfe124	99.12	Hpfe086 Hpfe118	99.66	Hpfe0007 JSHR 3 JSHR3	99.22	98.33	99.66
42	2166	Hpfe077	99.04	Hpfe028 Hpfe115	99.51	3401	97.86	Hpfe028	99.5	Hpfe084	98.68	Hpfe066 Hpfe086 Hpfe118	99.15	Hpfe102	99.41	97.86	99.51
43	2181	Hpfe022 Hpfe073 UM066	99.04	F78	99.51	Hpfe095	98.81	F30 Hpfe0012 MKM1	99.5	Hpfe024	99.56	F21	99.49	Hpfe0002	98.82	98.81	99.56
44	2271	Hpfe033	98.72	Hpfe033	100	Hpfe054	98.81	F30 Hpfe0003 Hpfe0012	99.75	Hpfe049	98.03	Hpfe0008	99.49	Hpfe092	99.61	98.03	100

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		Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity		
								Hpfe055 MKM1									
45	2283	Hpfe033	99.52	Hpfe056	99.27	Hpfe036 Hpfe072 Hpfe088 Hpbs1	97.38	DU15 Hpfe093	99.5	Hpfe0013	99.12	F23 F90 Hpfe0008 Hpfe033 Hpfe064 Hpfe066 Hpfe086 Hpfe118	99.32	Hpfe027	99.02	97.38	99.52
46	2766	Hpfe0007 Hpfe059	99.04	Hpfe071	98.78	F21 F72 F90 Hpfe010 Hpfe028 Hpfe036 Hpfe104	97.14	F72	99.75	Hpfe0013 Hpfe0020	99.12	Hpfe086 Hpfe118	99..32	Hpfe101	98.24	97.14	99.75
47	2783	Hpfe0007 Hpfe059	99.04	Hpfe071 Hpfe126	98.54	F21 F72 F90 Hpfe010 Hpfe028 Hpfe036 Hpfe104	97.14	F72	99.75	Hpfe0013 Hpfe0020	99.12	Hpfe086 Hpfe118	99.32	Hpfe101	98.24	97.14	99.75
48	2795	#6 3401	99.36	JSHR 3 JSHR3	100	F72 F90	99.29	Hpfe028	99.5	F57	100	F21 Hpfe022	99.66	JSHR 3 JSHR3	99.41	99.29	100
49	2797	F57	99.52	F24	99.02	Hpfe101	98.33	Hpfe056	99.25	MKF8 MKM1	99.56	Hpfe069 Hpfe070 Hpfe084	99.83	F24	100	98.33	100

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		Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity		
50	2824	F57	100	3401	100	MKF10	98.57	F57	100	F57	99.78	F24 Hpfe064	99.66	F67	99.8	98.57	100
51	2839	3401 F72 Hpfe058 MKM1	99.36	Hpfe055 35A	99.51	F24	99.52	F30 Hpfe0012 Hpfe0003 Hpfe055 MKM1	99.5	F72 F24	99.78	Hpfe038 Hpfe106	99.49	H-137	98.82	98.82	99.78
52	2843	MKF10	99.36	Hpfe066	98.78	GD63	98.1	Hpfe0011 Hpfe071 Hpfe072	99.5	F72 F24 Hpfe0006	99.34	Hpfe049 Hpfe103	98.97	F21	99.8	98.1	99.8
53	2885	3401	99.52	Hpfe028	99.76	Hpfe068 Hpfe102 MKF10	98.33	Hpfe0008 Hpfe040 Hpfe074 Hpfe077 Hpfe100	99.5	F67	98.9	F24	100	35A	99.02	98.33	100
54	2949	Hpfe069 Hpfe070	99.52	F210 F24	99.02	F23 Hpfe062	97.62	Hpfe0008 Hpfe074 Hpfe077	99.75	Hpfe051	98.9	F21 Hpfe038 Hpfe102	99.66	Hpfe0002	99.22	97.62	99.75
55	3035	F16	100	F16	100	F16	100	F16	100	#3 F16	100	F16 Hpfe086	100	F16	100	100	100
56	3036	F30	100	F30	100	F30	100	F30 Hpfe0012 MKM1	100	F30	100	F30	100	F30	100	100	100
57	3037	F32	100	F32	100	F32	100	F32	100	F32 JSHR 3 JSHR3	100	F32	100	F32	100	100	100
58	3437	Hpfe068	99.68	Hpfe052	100	Hpfe033 Hpfe059	98.1	F57 Hpfe040 Hpfe066	99.5	Hpfe054	99.12	Hpfe060	99.83	Hpfe085	99.41	98.1	100

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		Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity		
59	3660	3401 F72 Hpfe058	99.36	Hpfe052 Hpfe079 Hpfe080 Hpfe107	99.27	Hpfe039	98.57	Hpfe060	99.5	MKM1	98.25	F21 Hpfe022	99.66	F57	99.41	98.25	99.66
60	3663	Hp238	98.57	F38	99.02	F72 F90 JSHR3	98.1	F21 Hpfe0008 Hpfe074 Hpfe077 Hpfe120	99.75	F21	98.9	35A	99.83	F21	100	98.1	100
61	3664	#6 Hpfe075 JSHR3	99.2	Hpfe033 Hpfe049	99.76	F72 F90	99.29	Hpfe062	99	Hpfe052 Hpfe071	98.47	MKF10	98.8	Hpfe095	99.41	98.47	99.76
62	3678	Hpfe049	100	UM066	99.76	Hpfe102	98.57	F72 Hpfe0004	99.25	Hpfe077	98.47	Hpfe064 Hpfe066	98.97	Hpfe048	98.63	98.47	100
63	3679	Hpfe038	99.2	Hpfe075 Hpfe079 Hpfe107	99.02	Hpfe054	98.33	Hpfe072	99.25	F13 Hpfe093	98.68	F21	98.97	Hpfe0007	99.02	98.33	99.25
64	3681	H-137 Hpfe068 Hpfe095 Hpfe120	99.52	Hpfe052	99.51	F23 GD63 Hpfe0012 Hpfe057	97.62	Hpfe093	99.5	F13	99.12	F21 Hpfe038	99.49	Hpfe033	99.41	97.62	99.52
65	3682	UM066	100	UM066	100	UM066	100	UM066	100	UM066	100	UM066	100	Hpfe110 UM066	100	100	100
66	3685	GD63	98.88	Hpfe0006 Hpfe032 Hpfe040 JSHR 3 JSHR3	99.02	Hpfe081	98.81	83 Hpfe058 Hpfe072	99.25	Hpfe061	98.9	Hpfe0006 Hpfe039	99.49	H-137 Hpfe102	99.02	98.81	99.49
67	3810	Hpfe024	99.52	H-137	99.27	Hpfe039	99.05	F72	99	Hpfe110	98.68	Hpfe0008	99.49	Hpfe0002	98.82	98.68	99.52



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		Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity		
		Hpfe057		Hpfe126				Hpfe0007 Hpfe029 Hpfe066				Hpfe086 Hpfe118					
68	3967	Hpfe068	99.36	H-137 Hpfe040 Hpfe040	99.02	Hpbs1 Hpfe024	98.57	Hpfe033	99.75	F70 Hpfe0004	97.37	Hpfe069 Hpfe070 Hpfe084	99.66	Hpfe0007	99.02	97.37	99.75
69	3971	Hpfe0011	99.52	F70 Hpfe074	99.51	Hpfe010	99.05	F30 Hpfe0011 Hpfe0012 Hpfe058 Hpfe071 MKM1	99.75	Hpfe0003	98.9	MKM1	99.49	Hpfe115	99.02	98.9	99.75
70	3974	#6 3401 Hpfe032 Hpfe075	99.04	Hpfe028 Hpfe052 Hpfe079 Hpfe080 Hpfe107 Hpfe115	99.27	Hpfe103	98.56	UM066	99.5	Hpfe010	99.12	Hpfe086 Hpfe118	99.49	H-137	98.04	98.04	99.5
71	3989	Hpfe057 Hpfe079 Hpfe085	99.36	Hpfe058	99.02	Hpfe118	98.33	Hpfe072	99.5	Hpfe037 Hpfe104	99.34	Hpfe0008 Hpfe086 Hpfe118	99.66	Hpfe0002	99.22	98.33	99.66
72	4011	Hpfe075	99.36	Hpfe077	99.27	Hpfe0001	98.33	Hpfe068 Hpfe092	99.75	Hpfe083	98.68	Hpfe060 Hpfe100	99.66	JSHR 3 JSHR3	98.04	98.04	99.75
73	4025	Hpfe069 Hpfe070	100	Hpbs1 Hpfe056	99.02	Hpfe010	100	Hpfe068 Hpfe092	99	MKF10	98.01	Hpfe0008 Hpfe069 Hpfe070 Hpfe084 Hpfe101 JSHR 3	99.32	JSHR 3 JSHR3	99.61	98.01	100

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		Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity		
												JSHR3					
74	4038	Hpfe073	99.36	Hpfe075	98.78	Hpfe039 Hpfe065 Hpfe104 Hpfe118	97.86	#3	99	DU15 F21 Hpfe055	98.47	Hpfe086 Hpfe118	99.49	F211 F70 F90	98.63	97.86	99.49
75	4040	Hpfe126	99.52	Hpfe102	99.51	Hpfe054	97.62	Hpfe023	99.5	UM066	98.9	Hpfe022 Hpfe048	98.97	F70 Hpfe0002	99.22	97.62	99.52
76	4044	Hpfe057	99.2	Hpfe0011 Hpfe054 Hpfe075	99.51	Hpfe033	98.81	Hpfe068 Hpfe092	99.75	Hpfe0004	98.9	Hpfe069 Hpfe070 MKM1	98.8	Hpfe0002	99.61	98.8	99.75
77	4050	Hpfe057	99.52	Hpfe023 Hpfe075 Hpfe079 Hpfe107	98.78	Hpfe036	98.81	Hpfe0008 Hpfe033 Hpfe074 Hpfe077	99.75	F67	96.27	Hpfe038 Hpfe060	98.97	Hpfe081	99.02	96.27	99.75
78	4052	Hpfe068	99.68	Hpfe056	99.02	Hpfe040	98.1	Hpfe066	99.25	Hpfe010	99.56	F16 F24 Hpfe064 Hpfe066 Hpfe086 Hpfe088 Hpfe118	99.32	Hpfe054 Hpfe0002	98.82	98.1	99.68
79	4053	Hpfe074 Hpfe075	99.36	H-137 Hpfe072 Hpfe086 Hpfe126	99.02	Hpfe039 Hpfe081	98.81	Hpfe0013	99.75	Hpfe083 Hpfe115	98.68	Hpfe038 Hpfe077	99.66	Hpfe0002	99.22	98.68	99.75
80	4056	Hpfe028	98.72	Hpfe056	99.27	Hpfe110	98.1	Hpfe072	98.74	F13	99.12	Hpbs1	98.63	Hpfe077 Hpfe081	99.22	98.1	99.27
81	4060	GD63	99.04	H-137	99.51	F67 Hpfe068	98.33	Hpfe022 Hpfe101	99.25	Hpfe036 Hpfe059	98.68	DU15	98.8	Hpfe110 UM066	99.61	98.33	99.61

No	ST number	<i>atpA</i>		<i>atpA</i>		<i>atpA</i>		<i>atpA</i>		<i>atpA</i>		<i>atpA</i>		<i>atpA</i>		Minimum percent identity	Maximum percent identity
		Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity		
										Hpfe084							
82	4065	Hpfe068	99.52	F78 Hpfe115	99.02	Hpfe068	98.33	Hpfe106	99.25	F78	98.68	Hpfe038	99.49	Hpfe057	99.61	98.33	99.61
83	4072	UM066	99.2	#5	99.02	Hpfe086	100	Hpfe0008 Hpfe033 Hpfe040 Hpfe074 Hpfe077 Hpfe085	99.5	Hpfe0020	99.12	Hpfe038 Hpfe106	98.97	Hpfe102	98.83	98.83	100
84	4073	Hpfe0001 Hpfe051 Hpfe086 Hpfe095 Hpfe115	99.2	Hpfe052	99.37	Hpfe054	98.57	35A	99.5	Hpfe0006 Hpfe073	98.68	Hpfe060	99.83	Hpfe062	98.63	98.57	99.83
85	4074	Hpfe071	99.68	Hpfe052 Hpfe079 Hpfe080 Hpfe107	99.27	Hpfe0004 Hpfe059	98.33	F30 Hpfe0011 Hpfe0012 Hpfe058 Hpfe071 MKM1	99.75	F13 Hpfe022	98.25	Hpfe0008 Hpfe066 Hpfe086 Hpfe118	99.15	Hpfe0002	99.41	98.25	99.75
86	4075	Hpfe0011	99.2	Hpfe052 Hpfe080 Hpfe079 Hpfe107	99.27	F21	98.81	Hpfe028	100	Hpfe074	98.47	F24 Hpfe064 Hpfe066 Hpfe086 Hpfe118	99.83	Hpfe085	99.41	98.47	100
87	4079	Hpfe010 Hpfe073 JSHR3 UM066	99.52	UM066	99.51	Hpbs1	98.33	Hpfe048	98.49	F70 Hpfe0004 Hpfe024	98.25	Hpfe022 Hpfe029 Hpfe061 Hpfe071	99.32	Hpfe023	99.22	98.25	99.52

No	ST number	<i>atpA</i>		<i>atpA</i>		<i>atpA</i>		<i>atpA</i>		<i>atpA</i>		<i>atpA</i>		<i>atpA</i>		Minimum percent identity	Maximum percent identity
		Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity	Strain	Percent identity		
												Hpfe102					