

### Phenotype-Genotype Matrix

1 = present; 0 = absent; **Biofilm strength:** S or 3= Strong; M or 2 = Moderate; W or 1 = Weak

Isolate	Gelatinase	Caseinase	Hemolysis	gelE	sprE	cyI	agg	pil	ace	fsrB	fsrC	fsrA	fsrA_&_B	fsrA_or_B	Biofilm Assay OD (Median-based)	Biofilm Strength	Biofilm Index	Mean OD	Strength on Mean	Index on Mean	OD SD
EU02	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0.649	S	3	0.65	S	3	0.0105
EU05	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.105	W	1	0.11	W	1	0.0056
EU07	0	0	1	1	1	1	1	1	1	0	1	0	0	0	0.73	S	3	0.71	S	3	0.0468
EU08	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0.825	S	3	0.89	S	3	0.1882
EU09	0	0	0	1	1	0	1	1	1	0	1	0	0	0	1.52	S	3	1.54	S	3	0.0493
EU10	0	0	1	1	1	1	1	1	1	0	1	1	0	1	0.657	S	3	0.66	S	3	0.0955
EU11	0	1	1	1	1	1	1	1	1	0	1	0	0	0	1.17	S	3	1.17	S	3	0.0540
EU12	0	0	0	1	1	0	1	1	1	1	0	0	0	1	0.3	S	3	0.32	S	3	0.0657
EU13	0	1	0	1	1	0	1	1	1	0	0	0	0	0	0.167	M	2	0.19	M	2	0.0692
EU14	0	1	0	1	1	0	0	1	1	0	1	0	0	0	1.985	S	3	2.28	S	3	0.6259
EU15	0	1	1	1	1	1	1	1	1	0	1	0	0	0	1.088	S	3	1.07	S	3	0.0782
EU16	0	1	1	1	1	1	0	1	1	0	0	0	0	0	0.163	M	2	0.18	M	2	0.0289
EU17	1	1	0	1	1	0	1	1	1	1	1	1	1	1	0.111	W	1	0.11	W	1	0.0144
EU18	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0.145	M	2	0.16	M	2	0.0289
EU20	1	1	0	1	1	0	0	1	1	1	1	1	1	1	0.667	S	3	0.64	S	3	0.1116
EU21	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0.15	M	2	0.14	M	2	0.0212
EU27	0	1	0	1	1	0	1	1	1	0	0	0	0	0	0.828	S	3	0.83	S	3	0.0221
EU29	0	0	1	1	1	1	1	1	1	0	1	1	0	1	0.133	M	2	0.14	M	2	0.0129
EU31	0	0	1	1	1	1	1	1	1	0	1	0	0	0	0.597	S	3	0.57	S	3	0.1515
EU32	0	1	0	1	1	0	1	1	1	0	1	0	0	0	0.4	S	3	0.39	S	3	0.0506
EU33	0	1	0	1	1	0	0	1	1	0	0	0	0	0	0.22	M	2	0.22	M	2	0.0252
EU34	0	0	1	1	1	1	0	1	1	0	0	0	0	0	0.653	S	3	0.68	S	3	0.0520
EU35	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0.084	W	1	0.09	W	1	0.0061
EU36	0	1	0	0	0	0	0	1	1	0	1	0	0	0	0.089	W	1	0.09	W	1	0.0072
EU37	0	1	0	1	1	0	1	1	1	0	0	0	0	0	0.28	S	3	0.28	S	3	0.0300
EU38	0	1	1	1	1	1	1	1	1	0	1	1	0	1	1.071	S	3	1.28	S	3	0.4426
EU39	0	1	0	1	1	1	1	1	1	0	0	1	0	1	0.628	S	3	0.62	S	3	0.0316
EU41	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0.096	W	1	0.09	W	1	0.0106

EU42	0	1	0	1	1	0	0	1	1	0	0	1	0	1				0.31	S	3	0.2154
EU43	0	1	1	1	1	1	0	1	1	0	1	1	0	1	1.793	S	3	1.62	S	3	0.3909
EU44	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1.487	S	3	1.4	S	3	0.4113
EU45	1	1	0	1	1	1	0	1	1	1	1	0	0	1	0.163	M	2	0.17	M	2	0.0146
EU46	0	0	0	1	1	0	0	1	1	0	0	0	0	0	1.572	S	3	1.47	S	3	0.3346
EU47	0	0	0	1	1	1	0	1	1	0	1	0	0	0	0.172	M	2	0.16	M	2	0.0287
EU48	1	1	0	1	1	0	1	1	1	1	1	1	1	1	0.26	M	2	0.26	M	2	0.0148
EU50	0	1	0	1	1	1	1	1	1	0	0	1	0	1	0.397	S	3	0.4	S	3	0.0335
EU51	0	0	0	1	1	1	1	1	1	0	0	1	0	1	0.64	S	3	0.66	S	3	0.0690
EU52	0	0	0	1	1	0	1	1	1	0	0	0	0	0	0.169	M	2	0.17	M	2	0.0157
EU53	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0.161	M	2	0.16	M	2	0.0046
EU54	0	1	0	1	1	0	0	1	1	0	0	0	0	0	0.901	S	3	0.83	S	3	0.1439
EU55	0	1	0	1	1	0	0	1	1	0	0	0	0	0	0.654	S	3	0.75	S	3	0.2103
EU56	0	0	0	1	1	0	1	1	1	1	1	1	1	1	0.895	S	3	0.92	S	3	0.1103
EU57	0	0	0	1	1	0	1	1	1	0	0	0	0	0	0.776	S	3	0.76	S	3	0.0444
EU58	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0.672	S	3	0.66	S	3	0.0474
EU59	0	0	1	0	0	1	1	1	1	0	0	0	0	0	0.74	S	3	0.74	S	3	0.0144
EU60	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0.315	S	3	0.3	S	3	0.0303
EU61	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0.328	S	3	0.31	S	3	0.0318
EU62	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0.426	S	3	0.44	S	3	0.0444
EU64	0	0	0	1	1	0	0	1	1	0	0	1	0	1	0.552	S	3	0.54	S	3	0.0808
EU65	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0.798	S	3	0.84	S	3	0.1069
EU66	0	1	0	1	1	0	1	1	1	0	1	1	0	1	1.003	S	3	1.04	S	3	0.1223
EU67	1	1	0	1	1	0	1	1	1	1	1	1	1	1	0.11	W	1	0.11	W	1	0.0023
EU68	1	1	0	1	1	0	0	1	1	0	0	1	0	1	0.314	S	3	0.32	S	3	0.0155
EU69	1	1	0	1	1	0	0	1	1	1	1	1	1	1	0.103	W	1	0.11	W	1	0.0044
EU70	0	1	0	1	1	0	0	1	1	0	0	0	0	0	0.908	S	3	0.97	S	3	0.1290
EU71	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0.104	W	1	0.1	W	1	0.0086
EU72	0	1	0	1	1	0	1	1	1	1	0	0	0	1	0.717	S	3	0.7	S	3	0.0509
EU73	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0.251	M	2	0.25	M	2	0.0270
EU74	1	1	0	1	1	0	1	1	1	1	1	1	1	1	0.197	M	2	0.2	M	2	0.0180
EU75	1	1	0	1	1	0	1	1	1	1	1	1	1	1	0.18	M	2	0.18	M	2	0.0147

Counts

+	13	34	20	52	52	27	40	60	60	17	29	25
-	47	26	40	8	8	33	20	0	0	43	31	35

### # Chi-squared statistical test with Yates correction

	Gelatinase	Caseinase	Hemolysis	gelE	sprE	cyl	agg	pil	ace	fsrB	fsrC	fsrA	fsrA & B	fsrA or B	Biofilm Strength
<b>Gelatinase</b>	NA	0.0475	0.5796	0.2556	0.2556	0.8255	1	Invalid	Invalid	5E-08	0.0011	0.0001	3E-08	5E-05	0.0622
<b>Caseinase</b>	NA	NA	0.311	0.0201	0.0201	0.3459	0.5191	Invalid	Invalid	0.6163	0.5781	0.4811	0.7271	0.3937	0.3166
<b>Hemolysis</b>	NA	NA	NA	0.3473	0.3473	7E-09	0.0658	Invalid	Invalid	0.9193	0.1205	0.9262	1	1	0.3845
<b>gelE</b>	NA	NA	NA	NA	7E-13	0.4011	0.502	Invalid	Invalid	0.1365	0.0721	0.0291	0.2198	0.0138	0.0053
<b>sprE</b>	NA	NA	NA	NA	NA	0.4011	0.502	Invalid	Invalid	0.1365	0.0721	0.0291	0.2198	0.0138	0.0053
<b>cyl</b>	NA	NA	NA	NA	NA	NA	0.1688	Invalid	Invalid	0.9312	0.2033	0.5106	1	0.6397	0.1097
<b>agg</b>	NA	NA	NA	NA	NA	NA	NA	Invalid	Invalid	0.1879	0.2351	0.3085	0.1606	0.3142	0.4288
<b>pil</b>	NA	NA	NA	NA	NA	NA	NA	NA	Invalid	Invalid	Invalid	Invalid	Invalid	Invalid	invalid
<b>ace</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA	Invalid	Invalid	Invalid	Invalid	Invalid	invalid
<b>fsrB</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0003	0.0002	1E-10	9E-07	0.3474
<b>fsrC</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0008	4E-05	0.002	0.6717
<b>fsrA</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2E-06	2E-11	0.5381
<b>fsrA &amp; B</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2E-05	0.1682
<b>fsrA or B</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.6868
<b>Biofilm Strength</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Key: p-value <0.005 <0.01 <0.05

# Fisher's Exact Test for count data, with *p*-values computed by Monte Carlo simulations for tables larger than 2x2

	Gelatinase	Caseinase	Hemolysis	gelE	sprE	cyl	agg	pil	ace	fsrB	fsrC	fsrA	fsrA & B	fsrA or B	Biofilm Strength
<b>Gelatinase</b>	NA	0.028	0.5128	0.1817	0.1817	0.7553	1	invalid	invalid	5E-08	0.0004	4E-05	7E-08	7E-06	0.0525
<b>Caseinase</b>	NA	NA	0.2706	0.0164	0.0164	0.2975	0.4162	invalid	invalid	0.5656	0.4462	0.4303	0.555	0.3052	0.3233
<b>Hemolysis</b>	NA	NA	NA	0.2487	0.2487	2E-10	0.0436	invalid	invalid	0.7686	0.1004	0.7847	1	1	0.4798
<b>gelE</b>	NA	NA	NA	NA	4E-10	0.2759	0.4218	invalid	invalid	0.0912	0.0535	0.0162	0.179	0.0053	0.013
<b>sprE</b>	NA	NA	NA	NA	NA	0.2759	0.4218	invalid	invalid	0.0912	0.0535	0.0162	0.179	0.0053	0.011
<b>cyl</b>	NA	NA	NA	NA	NA	NA	0.168	invalid	invalid	0.7789	0.194	0.4339	1	0.6039	0.1314
<b>agg</b>	NA	NA	NA	NA	NA	NA	NA	invalid	invalid	0.1357	0.1772	0.2689	0.1117	0.2743	0.4083
<b>pil</b>	NA	NA	NA	NA	NA	NA	NA	NA	invalid	invalid	invalid	invalid	invalid	invalid	invalid
<b>ace</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA	invalid	invalid	invalid	invalid	invalid	invalid
<b>fsrB</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0001	9E-05	4E-11	6E-08	0.2954
<b>fsrC</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0005	4E-06	0.0017	0.6987
<b>fsrA</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3E-07	6E-14	0.6297
<b>fsrA &amp; B</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2E-06	0.2429
<b>fsrA or B</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.7231
<b>Biofilm Strength</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Key: *p*-value <0.005 <0.01 <0.05