

Table S1. Ranked allelic variants using BioML.

Rank	allele	relative importance	scaled importance	percentage
1	porA_507/1275	89.41	1	0.0048
2	porA_513/1275	89.39	0.9998	0.0048
3	porA_1099/1275	86.78	0.9706	0.0046
4	porA_651/1275	86.28	0.965	0.0046
5	porA_803/1275	86.02	0.9621	0.0046
6	porA_394/1275	85.31	0.9542	0.0045
7	porA_592/1275	84.53	0.9455	0.0045
8	porA_548/1275	83.56	0.9346	0.0044
9	porA_445/1275	83.19	0.9304	0.0044
10	proS_1373/1707	83.12	0.9297	0.0044
11	porA_562/1275	82.20	0.9194	0.0044
12	porA_435/1275	82.00	0.9171	0.0044
13	porA_372/1275	81.52	0.9117	0.0043
14	porA_580/1275	81.20	0.9082	0.0043
15	porA_400/1275	81.16	0.9077	0.0043
16	porA_250/1275	79.46	0.8887	0.0042
17	porA_459/1275	79.24	0.8863	0.0042
18	ubiE_2_255/774	78.06	0.8731	0.0042
19	kpsM_157/783	77.53	0.8672	0.0041
20	hemL_762/1275	77.09	0.8623	0.0041
21	proS_1512/1707	76.92	0.8603	0.0041
22	sdhA_1599/1836	76.42	0.8548	0.0041
23	ackA_1114/1191	76.41	0.8547	0.0041
24	kpsD_1065/1659	76.37	0.8542	0.0041
25	porA_411/1275	75.90	0.8489	0.004
26	tatC_94/738	75.65	0.8461	0.004
27	proS_67/1707	75.64	0.846	0.004
28	nrdA_315/2370	75.14	0.8405	0.004
29	kpsD_55/1659	75.04	0.8393	0.004
30	ubiD_1006/1803	74.66	0.8351	0.004
31	nrdA_333/2370	74.22	0.8302	0.004
32	dnaJ_318/1122	74.21	0.8301	0.0039
33	hisG_453/900	73.89	0.8264	0.0039
34	proS_1614/1707	73.59	0.823	0.0039
35	proS_1594/1707	73.58	0.8229	0.0039
36	proS_1364/1707	72.98	0.8163	0.0039
37	pnp_1347/2160	72.97	0.8162	0.0039
38	dnaJ_950/1122	72.97	0.8161	0.0039

39	purB_1071/1329	72.89	0.8153	0.0039
40	nadE_653/741	72.89	0.8152	0.0039
41	ppiB_288/483	72.56	0.8115	0.0039
42	ispB_118/894	72.35	0.8093	0.0039
43	purB_1304/1329	72.28	0.8085	0.0038
44	purB_1167/1329	72.27	0.8084	0.0038
45	pnp_930/2160	72.26	0.8083	0.0038
46	pheT_268/2322	71.34	0.7979	0.0038
47	pheT_218/2322	71.33	0.7978	0.0038
48	ruvC_342/555	71.32	0.7977	0.0038
49	ruvC_324/555	71.02	0.7943	0.0038
50	mdtJ_198/342	69.96	0.7825	0.0037
51	cfiB_194/1446	69.95	0.7824	0.0037
52	pseG_341/825	69.95	0.7823	0.0037
53	ttcA_621/756	69.24	0.7744	0.0037
54	ahpC_397/597	68.39	0.765	0.0036
55	ackA_165/1191	68.25	0.7634	0.0036
56	arsB_327/1287	68.02	0.7608	0.0036
57	dnaJ_522/1122	68.01	0.7607	0.0036
58	purQ_425/672	67.80	0.7583	0.0036
59	ttcA_715/756	67.63	0.7564	0.0036
60	kpsD_498/1659	67.62	0.7563	0.0036
61	porA_642/1275	67.59	0.756	0.0036
62	ahpC_444/597	67.24	0.752	0.0036
63	porA_541/1275	67.22	0.7518	0.0036
64	rimO_629/1320	66.53	0.7442	0.0035
65	rimO_429/1320	66.52	0.7441	0.0035
66	flaA_1_1581/1719	66.51	0.744	0.0035
67	mdtJ_280/342	66.42	0.7429	0.0035
68	nth_2_165/687	66.24	0.7409	0.0035
69	glgC_2_590/762	66.09	0.7392	0.0035
70	arsB_726/1287	66.02	0.7384	0.0035
71	arsB_661/1287	65.96	0.7378	0.0035
72	arsB_636/1287	65.96	0.7377	0.0035
73	arsB_608/1287	65.95	0.7376	0.0035
74	fumC_657/1392	65.75	0.7355	0.0035
75	nrdA_1317/2370	65.60	0.7337	0.0035
76	glgC_2_372/762	65.28	0.7302	0.0035
77	ruvC_337/555	65.28	0.7301	0.0035
78	pcaB_78/1368	65.11	0.7283	0.0035

79	kdsD_294/948	65.08	0.7279	0.0035
80	ahpC_558/597	64.67	0.7233	0.0034
81	ahpC_264/597	64.66	0.7232	0.0034
82	nrdA_1206/2370	64.48	0.7212	0.0034
83	parB_429/837	64.45	0.7208	0.0034
84	proC_652/732	64.44	0.7208	0.0034
85	parB_414/837	64.44	0.7207	0.0034
86	parB_333/837	64.43	0.7207	0.0034
87	mnmG_1578/1860	64.42	0.7206	0.0034
88	cfiB_954/1446	64.41	0.7205	0.0034
89	arsB_291/1287	64.40	0.7203	0.0034
90	arsB_137/1287	64.39	0.7202	0.0034
91	flaA_2_870/1719	63.95	0.7153	0.0034
92	ttuB_870/1233	63.36	0.7087	0.0034
93	thiG_428/777	63.24	0.7073	0.0034
94	rimO_1063/1320	63.24	0.7073	0.0034
95	thiG_272/777	63.23	0.7072	0.0034
96	nrdA_1053/2370	63.23	0.7072	0.0034
97	nrdA_1047/2370	63.22	0.7071	0.0034
98	dksA_57/363	63.21	0.707	0.0034
99	rlmB_577/684	63.11	0.7059	0.0034
100	mnmG_1764/1860	63.08	0.7055	0.0034
101	arsB_276/1287	63.07	0.7054	0.0034
102	thiG_243/777	62.90	0.7035	0.0033
103	mnmG_1347/1860	62.83	0.7027	0.0033
104	mdtI_74/309	62.82	0.7027	0.0033
105	kdpC_363/411	62.81	0.7026	0.0033
106	kdpC_180/411	62.80	0.7025	0.0033
107	birA_402/654	62.80	0.7024	0.0033
108	kdsD_153/948	62.63	0.7005	0.0033
109	fmt_293/918	62.57	0.6999	0.0033
110	fmt_375/918	61.96	0.693	0.0033
111	lpxC_270/885	61.80	0.6912	0.0033
112	dapE_897/1098	61.66	0.6897	0.0033
113	argS_1197/1593	61.43	0.6871	0.0033
114	mnmG_1521/1860	61.42	0.687	0.0033
115	mnmG_1476/1860	61.42	0.6869	0.0033
116	mnmG_1455/1860	61.41	0.6868	0.0033
117	ackA_807/1191	61.40	0.6868	0.0033
118	mnmG_1437/1860	61.40	0.6868	0.0033

119	arsB_450/1287	61.39	0.6867	0.0033
120	ackA_825/1191	61.39	0.6866	0.0033
121	thiD_520/813	61.34	0.6861	0.0033
122	citN_821/1347	60.91	0.6813	0.0032
123	recN_540/1524	60.71	0.6791	0.0032
124	argD_625/1182	60.70	0.679	0.0032
125	parB_63/837	60.54	0.6771	0.0032
126	korA_822/1125	60.53	0.677	0.0032
127	recN_738/1524	60.52	0.6769	0.0032
128	prmC_345/816	60.38	0.6753	0.0032
129	nrdA_357/2370	60.37	0.6752	0.0032
130	htpX_974/1188	60.36	0.6751	0.0032
131	dltA_403/1509	60.35	0.675	0.0032
132	mnmG_669/1860	59.73	0.6681	0.0032
133	dapE_1065/1098	59.69	0.6677	0.0032
134	hemC_750/924	59.64	0.6671	0.0032
135	thiG_331/777	59.58	0.6664	0.0032
136	thiD_580/813	59.57	0.6663	0.0032
137	glgC_2_282/762	59.56	0.6662	0.0032
138	ackA_789/1191	59.50	0.6655	0.0032
139	arsB_796/1287	59.50	0.6655	0.0032
140	arsB_715/1287	59.49	0.6654	0.0032
141	arsB_616/1287	59.48	0.6653	0.0032
142	rscC_2238/2310	59.11	0.6612	0.0031
143	pleD_81/1245	59.10	0.6611	0.0031
144	yrdA_405/549	59.10	0.661	0.0031
145	pleD_585/1245	59.10	0.661	0.0031
146	cydB_373/1125	59.09	0.6609	0.0031
147	recN_51/1524	59.09	0.6609	0.0031
148	infA_80/219	59.09	0.6609	0.0031
149	copA_1_1610/2352	59.08	0.6609	0.0031
150	infA_33/219	59.08	0.6608	0.0031
151	argH_1045/1383	59.08	0.6608	0.0031
152	ftsA_501/1383	59.07	0.6607	0.0031
153	soj_435/786	58.97	0.6596	0.0031
154	soj_123/786	58.97	0.6596	0.0031
155	soj_351/786	58.96	0.6595	0.0031
156	queE_385/744	58.96	0.6595	0.0031
157	soj_325/786	58.96	0.6594	0.0031
158	porA_187/1275	58.95	0.6594	0.0031

159	birA_603/654	58.95	0.6594	0.0031
160	soj_144/786	58.95	0.6593	0.0031
161	mntB_678/804	58.95	0.6593	0.0031
162	atpC_183/390	58.94	0.6593	0.0031
163	fmt_867/918	58.94	0.6592	0.0031
164	aspS_250/1752	58.94	0.6592	0.0031
165	fabF_189/1215	58.93	0.6591	0.0031
166	aat_2116/2130	58.93	0.6591	0.0031
167	aspS_706/1752	58.83	0.658	0.0031
168	aspS_687/1752	58.82	0.6579	0.0031
169	soj_387/786	58.81	0.6578	0.0031
170	sucD_606/870	58.71	0.6567	0.0031
171	sucD_537/870	58.70	0.6566	0.0031
172	sucD_624/870	58.70	0.6565	0.0031
173	pal_20/498	58.69	0.6565	0.0031
174	sucD_613/870	58.69	0.6564	0.0031
175	mutS2_378/2208	58.69	0.6564	0.0031
176	lpxC_633/885	58.68	0.6563	0.0031
177	recN_1225/1524	58.58	0.6552	0.0031
178	dcuB_136/1425	58.50	0.6544	0.0031
179	sucD_408/870	58.50	0.6543	0.0031
180	dcuB_102/1425	58.50	0.6543	0.0031
181	rpoN_565/1251	58.49	0.6542	0.0031
182	clpB_675/2574	58.49	0.6542	0.0031
183	flaA_2_742/1719	58.48	0.6541	0.0031
184	flaA_2_723/1719	58.42	0.6534	0.0031
185	rlmB_276/684	58.19	0.6509	0.0031
186	feoB_1098/1842	58.18	0.6508	0.0031
187	aer_1_65/498	58.15	0.6504	0.0031
188	aer_1_21/498	58.14	0.6503	0.0031
189	flaA_2_826/1719	57.92	0.6478	0.0031
190	rocA_2252/3489	57.72	0.6456	0.0031
191	uvrB_189/1974	57.53	0.6434	0.0031
192	yycB_1045/1164	57.52	0.6433	0.0031
193	uvrB_1704/1974	57.52	0.6433	0.0031
194	yajR_935/1296	57.51	0.6433	0.0031
195	uvrB_1513/1974	57.51	0.6432	0.0031
196	tolB_212/1209	57.51	0.6432	0.0031
197	uvrB_943/1974	57.50	0.6432	0.0031
198	uvrB_120/1974	57.50	0.6431	0.0031

199	tolB_132/1209	57.50	0.6431	0.0031
200	uvrB_1089/1974	57.49	0.6431	0.0031
201	sucC_48/1164	57.49	0.643	0.0031
202	rpoBC_2_3641/4554	57.49	0.643	0.0031
203	ttcA_105/756	57.49	0.643	0.0031
204	sucC_237/1164	57.48	0.6429	0.0031
205	rhaM_131/318	57.48	0.6429	0.0031
206	rpsA_110/1671	57.48	0.6429	0.0031
207	proP_4_560/1296	57.47	0.6428	0.0031
208	moaA_201/963	57.47	0.6428	0.0031
209	rpoBC_2_3850/4554	57.47	0.6428	0.0031
210	proP_2_1116/1362	57.47	0.6428	0.0031
211	mnmA_1_845/1017	57.46	0.6427	0.0031
212	plsY_460/609	57.46	0.6427	0.0031
213	mdh_633/903	57.46	0.6426	0.0031
214	kdpD_30/1821	57.45	0.6426	0.0031
215	murD_1080/1209	57.45	0.6426	0.0031
216	kdpD_702/1821	57.45	0.6426	0.0031
217	kdpD_1798/1821	57.45	0.6425	0.0031
218	kdpD_559/1821	57.44	0.6425	0.0031
219	kdpB_948/2046	57.44	0.6424	0.0031
220	icd2_390/2205	57.44	0.6424	0.0031
221	kdpD_4/1821	57.43	0.6424	0.0031
222	kdpB_1874/2046	57.43	0.6424	0.0031
223	htpX_655/1188	57.43	0.6423	0.0031
224	kdpB_1391/2046	57.42	0.6423	0.0031
225	htpX_143/1188	57.42	0.6422	0.0031
226	frdC_727/783	57.42	0.6422	0.0031
227	icd2_700/2205	57.42	0.6422	0.0031
228	hisS_1012/1227	57.41	0.6422	0.0031
229	ffh_428/1338	57.41	0.6421	0.0031
230	gpml_506/1479	57.41	0.6421	0.0031
231	dsbL_1_78/360	57.40	0.6421	0.0031
232	btuD_1_265/855	57.40	0.642	0.0031
233	fusA_1331/2076	57.40	0.642	0.0031
234	dnaE_3535/3603	57.40	0.642	0.0031
235	atpC_290/390	57.39	0.6419	0.0031
236	copA_1_1242/2352	57.39	0.6419	0.0031
237	atpC_253/390	57.39	0.6419	0.0031
238	clpA_1936/2130	57.38	0.6418	0.0031

239	argC_58/1029	57.38	0.6418	0.0031
240	ccpA_24/1026	57.38	0.6418	0.0031
241	atoC_1248/1302	57.38	0.6418	0.0031
242	aas_3474/3513	57.38	0.6417	0.0031
243	aroA_66/1287	57.37	0.6417	0.0031
244	aroA_36/1287	57.36	0.6416	0.0031
245	uvrB_1866/1974	57.20	0.6398	0.003
246	murC_1290/1299	57.20	0.6397	0.003
247	lpxC_483/885	57.19	0.6396	0.003
248	kdpB_674/2046	57.19	0.6396	0.003
249	kdpD_615/1821	57.18	0.6395	0.003
250	kdpB_1818/2046	57.18	0.6395	0.003
251	kdpD_1593/1821	57.17	0.6395	0.003
252	kdpB_1614/2046	57.17	0.6394	0.003
253	kdpB_1063/2046	57.17	0.6394	0.003
254	kdpB_723/2046	57.16	0.6394	0.003
255	kdpB_1494/2046	57.16	0.6393	0.003
256	htpX_399/1188	57.16	0.6393	0.003
257	kdpB_1453/2046	57.15	0.6392	0.003
258	kdpB_1139/2046	57.14	0.6392	0.003
259	tmk_380/579	57.10	0.6386	0.003
260	dcuB_24/1425	57.09	0.6385	0.003
261	pfs_528/687	57.04	0.638	0.003
262	kdpA_1_179/261	57.03	0.6379	0.003
263	eptA_1119/1539	56.94	0.6369	0.003
264	cfiB_237/1446	56.90	0.6364	0.003
265	thiG_474/777	56.86	0.636	0.003
266	mnmA_1_426/1017	56.86	0.636	0.003
267	flaA_2_855/1719	56.45	0.6313	0.003
268	flaA_2_819/1719	56.44	0.6313	0.003
269	aer_1_234/498	56.43	0.6312	0.003
270	ackA_456/1191	56.09	0.6273	0.003
271	yafP_79/459	55.94	0.6257	0.003
272	flaA_2_1554/1719	55.93	0.6256	0.003
273	dapA_1_162/909	55.92	0.6255	0.003
274	atpD_1_437/522	55.92	0.6254	0.003
275	thiG_171/777	55.86	0.6248	0.003
276	smpB_189/453	55.85	0.6247	0.003
277	yflS_134/168	55.85	0.6246	0.003
278	rpoBC_1_4034/4128	55.84	0.6246	0.003

279	gppA_2_197/975	55.84	0.6246	0.003
280	tsf_246/1074	55.84	0.6246	0.003
281	kgtP_424/1260	55.84	0.6245	0.003
282	glyS_1573/1995	55.84	0.6245	0.003
283	hom_842/1248	55.83	0.6244	0.003
284	glmU_27/1290	55.83	0.6244	0.003
285	aas_2194/3513	55.83	0.6244	0.003
286	hom_589/1248	55.82	0.6244	0.003
287	dapE_717/1098	55.82	0.6243	0.003
288	aas_1587/3513	55.82	0.6243	0.003
289	carB_1236/3270	55.81	0.6243	0.003
290	bioB_183/837	55.80	0.6242	0.003
291	mog_477/543	55.78	0.6239	0.003
292	copA_1_837/2352	55.78	0.6239	0.003
293	copA_1_783/2352	55.77	0.6238	0.003
294	bamA_294/2220	55.77	0.6237	0.003
295	copA_1_1335/2352	55.76	0.6237	0.003
296	bamA_279/2220	55.76	0.6237	0.003
297	clpA_1341/2130	55.75	0.6236	0.003
298	atpC_102/390	55.75	0.6236	0.003
299	birA_348/654	55.74	0.6235	0.003
300	asd_867/1032	55.74	0.6235	0.003

Table S2. Metadata for extraintestinal *Campylobacter jejuni*.

Strain Name	Host	Disease	Sources	Region	Year	Clone SA*	ST	Accession
CA6e	Sheep	Abortion	Aborted placenta	CA,USA	1991	Yes	8	SRR309440 0
CA7e	Sheep	Abortion	Aborted placenta	CA,USA	1992	Yes	8	SRR309440 1
ID1	Sheep	Abortion	Aborted placenta	ID,USA	1992	Yes	8	SRR309440 2
CA8e	Sheep	Abortion	Aborted placenta	CA,USA	1993	Yes	8	SRR309440 3
ID12	Sheep	Abortion	Aborted placenta	ID,USA	1993	Yes	8	SRR309440 4
ID15	Sheep	Abortion	Aborted placenta	ID,USA	1993	Yes	8	SRR309440 5
ID28	Sheep	Abortion	Aborted placenta	ID,USA	1993	Yes	8	SRR309440 6
ID31	Sheep	Abortion	Aborted placenta	ID,USA	1993	Yes	8	SRR309440 7
ID34	Sheep	Abortion	Aborted placenta	ID,USA	1993	Yes	8	SRR309440 8
CA3e	Sheep	Abortion	Aborted placenta	CA,USA	1999	Yes	8	SRR309441 9
CA4e	Sheep	Abortion	Aborted placenta	CA,USA	1999	Yes	8	SRR309441 0
CA5e	Sheep	Abortion	Aborted placenta	CA,USA	2000	Yes	8	SRR309441 1
VDL705	Sheep	Abortion	Aborted placenta	IA,USA	2003	Yes	8	SRR309441 2
VLD698	Sheep	Abortion	Aborted placenta	IA,USA	2003	Yes	8	SRR309441 3
CA7	Sheep	Abortion	Aborted placenta	CA,USA	2003	Yes	8	SRR309441 4
ID18107	Sheep	Abortion	Aborted placenta	ID,USA	2004	Yes	8	SRR309441 5
7-B	Sheep	Abortion	Aborted placenta	ID,USA	2004	Yes	8	SRR309441 6
ID32314	Sheep	Abortion	Aborted placenta	ID,USA	2004	Yes	8	SRR309441 7
7-F	Sheep	Abortion	Aborted placenta	ID,USA	2004	Yes	8	SRR309441 8
VDL5908	Sheep	Abortion	Aborted placenta	IA,USA	2004	Yes	8	SRR309441 9
VDL3842	Sheep	Abortion	Aborted placenta	IA,USA	2004	Yes	8	SRR309441 0
CA5	Sheep	Abortion	Aborted placenta	CA,USA	2004	Yes	8	SRR309441 1
CA8	Sheep	Abortion	Aborted placenta	CA,USA	2004	Yes	8	SRR309441 2
ID21908	Sheep	Abortion	Aborted placenta	ID,USA	2005	Yes	8	SRR309442 1
3-A	Sheep	Abortion	Aborted placenta	ID,USA	2005	Yes	8	SRR309442 2
VDL3080	Sheep	Abortion	Aborted placenta	IA,USA	2005	Yes	8	SRR309442 3
SD3831	Sheep	Abortion	Aborted placenta	SD,USA	2005	Yes	8	SRR309442 4
CA3	Sheep	Abortion	Aborted placenta	CA,USA	2005	Yes	8	SRR309442 5
ID27313	Sheep	Abortion	Aborted placenta	ID,USA	2006	Yes	8	SRR309442 6
8-G	Sheep	Abortion	Aborted placenta	ID,USA	2006	Yes	8	SRR309442 7

ID42821			Aborted						SRR309442
1-A	Sheep	Abortion	placenta	ID,USA	2006	Yes	8	6	SRR309442
ID14705			Aborted						SRR309442
2-A	Sheep	Abortion	placenta	ID,USA	2007	Yes	8	7	SRR309442
			Aborted						SRR309442
VDL6220	Sheep	Abortion	placenta	IA,USA	2007	Yes	8	8	SRR309442
			Aborted						SRR309442
ND6	Sheep	Abortion	placenta	ND,USA	2007	Yes	8	9	SRR309443
			Aborted						SRR309443
VDL2192	Sheep	Abortion	placenta	IA,USA	2008	Yes	8	0	SRR309443
			Aborted						SRR309443
VDL8958	Sheep	Abortion	placenta	IA,USA	2009	Yes	8	1	SRR309443
VDL3504			Aborted						SRR309443
4	Sheep	Abortion	placenta	IA,USA	2009	Yes	8	2	SRR309443
			Aborted						SRR309443
VDL1957	Sheep	Abortion	placenta	IA,USA	2010	Yes	8	3	SRR309443
			Aborted						SRR309443
VDL2764	Sheep	Abortion	placenta	IA,USA	2010	Yes	8	4	SRR309443
			Aborted						SRR309443
VDL5414	Sheep	Abortion	placenta	IA,USA	2011	Yes	8	5	SRR309443
			Aborted						SRR309443
CO351	Sheep	Abortion	placenta	CO,USA	2011	Yes	8	6	SRR309443
			Aborted						SRR309443
ID33	Sheep	Abortion	placenta	ID,USA	1993	No	441	7	SRR309444
			Aborted						SRR309444
CA2	Sheep	Abortion	placenta	CA,USA	2003	No	607	4	SRR309444
			Aborted						SRR309444
VDL4646	Sheep	Abortion	placenta	IA,USA	2004	No	806	5	SRR309444
			Aborted						SRR309444
ND7	Sheep	Abortion	placenta	ND,USA	2007	No	42	7	SRR309444
			Aborted						SRR309444
ND9	Sheep	Abortion	placenta	ND,USA	2008	Yes	8	8	SRR309444
			Aborted						SRR309444
VDL902	Sheep	Abortion	placenta	IA,USA	2008	No	982	9	SRR309445
			Aborted				518		SRR309445
VDL2019	Sheep	Abortion	placenta	IA,USA	2008	No	9	0	SRR309445
			Aborted						SRR309445
VDL213	Sheep	Abortion	placenta	IA,USA	2009	No	806	1	SRR309445
			Aborted						SRR309445
VDL6069	Sheep	Abortion	placenta	IA,USA	2010	No	38	3	SRR309445
			Aborted						SRR309445
CA10	Cattle	Abortion	placenta	CA,USA	2003	Yes	8	4	SRR309445
			Aborted						SRR309445
CA12	Cattle	Abortion	placenta	CA,USA	2003	Yes	8	5	SRR309445
			Aborted						SRR309445
CA11	Cattle	Abortion	placenta	CA,USA	2004	Yes	8	6	SRR309445
			Aborted						SRR309445
ND3	Cattle	Abortion	placenta	ND,USA	2005	Yes	8	7	SRR309445
VDL3124			Aborted						SRR309445
8	Cattle	Abortion	placenta	IA,USA	2009	Yes	8	8	SRR309445
			Aborted						SRR309445
VDL2738	Goat	Abortion	placenta	IA,USA	2005	Yes	8	9	SRR309446
			Aborted						SRR309446
VDL1625	Goat	Abortion	placenta	IA,USA	2008	Yes	8	0	SRR309446
			Aborted						SRR309446
VDL4023	Goat	Abortion	placenta	IA,USA	2010	Yes	8	1	SRR309446

VDL4350	Goat	Abortion	Aborted placenta	IA,USA	2010	Yes	8	2	SRR309446
1E2B2a	Sheep		Bile	IA,USA	2008	Yes	8	3	SRR309446
1L1F1a	Sheep		Feces	IA,USA	2008	Yes	8	4	SRR309446
2L5B2	Sheep		Bile	IA,USA	2008	Yes	8	5	SRR309446
2L5B4	Sheep		Bile	IA,USA	2008	Yes	8	6	SRR309446
D6249	Human	Gastroenteritis	Feces	VT,USA	2003	Yes	8	7	SRR309446
D7324	Human	Gastroenteritis	Feces	PA,USA	2008	Yes	8	9	SRR309447
D7365	Human	Gastroenteritis	Feces	RI,USA	2008	Yes	8	0	SRR309447
D8347	Human	Gastroenteritis	Feces	MT,USA	2010	Yes	8	1	SRR309447
FDA17848	Human	Gastroenteritis	Feces	IA,USA	Unknow	Yes	8	2	SRR309447
FDA17817	Human	Gastroenteritis	Feces	IA,USA	Unknow	Yes	8	3	SRR309447
FDAN342	Chick		Meat	MN,USA	2004	Yes	8	5	SRR309447
UK33	Sheep	Abortion	Aborted placenta	UK	2006	No	227	6	SRR309447
UK29	Sheep	Abortion	Aborted placenta	UK	2005	No	21	7	SRR309447
OF48	Sheep		Feces	IA,USA	2006	No	61	9	SRR309448
VDL35490	Sheep	Abortion	Aborted placenta	IA,USA	2012	No	982	0	SRR309448
VDL3452	Sheep	Abortion	Aborted placenta	IA,USA	2013	Yes	8	1	SRR309448
VDL6794	Sheep	Abortion	Aborted placenta	IA,USA	2013	Yes	8	2	SRR309448
UK40	Sheep	Abortion	Aborted placenta	UK	2008	No	227	3	SRR309448
UK10	Sheep	Abortion	Aborted placenta	UK	2003	No	206	5	SRR309448
UK32	Sheep	Abortion	Aborted placenta	UK	2006	No	42	7	SRR309448
UK37	Sheep	Abortion	Aborted placenta	UK	2007	No	270	8	SRR309448
ID7	Sheep	Abortion	Aborted placenta	ID,USA	1992	Yes	8	9	SRR309449
ID27	Sheep	Abortion	Aborted placenta	ID,USA	1993	Yes	8	0	SRR309449
ID25	Sheep	Abortion	Aborted placenta	ID,USA	1993	Yes	21	1	SRR309449
SD4165	Sheep	Abortion	Aborted placenta	SD,USA	2005	Yes	8	2	SRR309449
VDL2847	Sheep	Abortion	Aborted placenta	IA,USA	2010	Yes	8	3	SRR309449
VDL2918	Sheep	Abortion	Aborted placenta	IA,USA	2005	Yes	8	4	SRR309449

2L5F9	Sheep		Feces Aborted	IA,USA	2008	Yes	8	SRR309449 5
302	Sheep	Abortion	placenta Aborted	IA,USA	2014	Yes	8	SRR309449 6
3008	Sheep	Abortion	placenta Aborted	IA,USA	2014	Yes	8	SRR309449 7
5406	Sheep	Abortion	placenta	MI,USA	2014	Yes	8	SRR309449 8

Table S3. Metadata for intestinal *Campylobacter jejuni*.

Genome	Collection Date	Geographic location
197.14907	2018	USA:PA
197.15041	2018	USA:MN
197.15927	2016	USA:TX
197.15936	2016	USA:PA
197.15943	2016	USA:TN
197.15952	2016	USA:PA
197.15957	2016	USA:OR
197.15958	2016	USA:NE
197.15964	2016	USA:ID
197.15966	2016	USA:CO
197.15972	2016	USA:NJ
197.15982	2016	USA:TX
197.15983	2016	USA:PA
197.15988	2016	USA:MI
197.15993	2016	USA:PA
197.15994	2016	USA:MI
197.15997	2016	USA:NY
197.15999	2016	USA:OH
197.16001	2016	USA:GA
197.16005	2016	USA:OH
197.16021	2016	USA:PA
197.16023	2016	USA:PA
197.16031	2016	USA:WI
197.16033	2016	USA:CA
197.16041	2016	USA:TX
197.16042	2016	USA:NE
197.16048	2016	USA:TX
197.16051	2016	USA:WA
197.16053	2016	USA:MI
197.16058	2016	USA:NJ
197.16060	2016	USA:WA
197.16064	2016	USA:NE
197.16072	2016	USA:MI
197.16074	2016	USA:ID
197.16075	2016	USA:MI
197.16078	2016	USA:CA
197.16079	2016	USA:OR
197.16084	2016	USA:FL
197.16099	2016	USA:NJ
197.16103	2016	USA:TX

197.16118
197.16127

2016 USA:WI
2016 USA:MN

Table S4. Confusion matrix and derived model metrics for the XGboost model with extraintestinal *Campylobacter jejuni*. TP= True positive, FN= False Negative, FP= False Positive, FN= False Negative.

	Extraintestinal	Intestinal
Extraintestinal	18358	389964
Intestinal	6003	821898

Measure	Value	Formula
Sensitivity	0.7536	$TP / (TP + FN)$
Specificity	0.6782	$TN / (FP + TN)$
Precision	0.045	$TP / (TP + FP)$
Negative Predictive Value	0.9927	$TN / (TN + FN)$
False Positive Rate	0.3218	$FP / (FP + TN)$
False Discovery Rate	0.955	$FP / (FP + TP)$
False Negative Rate	0.2464	$FN / (FN + TP)$
Accuracy	0.6797	$(TP + TN) / (P + N)$
F1 Score	0.0849	$2TP / (2TP + FP + FN)$
Matthews Correlation Coefficient	0.1276	$TP*TN - FP*FN / \sqrt{((TP+FP)*(TP+FN))*(TN+FP)*(TN+FN)}$

[Sensitivity](#) [Specificity](#) [Precision](#)

[Negative Predictive Value](#) [False Positive Rate](#)

[False Discovery Rate](#) [False Negative Rate](#)

[Accuracy](#)

[F1 Score](#)

[Matthews Correlation Coefficient](#)