

**Table 2. *Helicobacter hepaticus* predicted open frames and their functional annotation**

ORF number	Start	End	Length (AA)	Strand	Gene name	Functional annotation
HH0001	141	2420	760	+		Conserved hypothetical protein, similar to <i>Helicobacter pylori</i> toxin-like outer membrane protein
HH0002	2484	3986	501	+	<i>trpC</i>	Phosphoribosylanthranilate isomerase
HH0003	3986	5029	348	+		Conserved hypothetical protein, similar to <i>Streptomyces coelicolor</i> putative lipoprotein
HH0004	5056	5607	184	-		Hypothetical protein, similar to GGDEF family protein
HH0005	5636	6196	187	-		Conserved hypothetical protein, similar to <i>Campylobacter jejuni</i> putative iron-binding protein, GGDEF family protein
HH0006	6285	6905	207	-	<i>rnhB</i>	Ribonuclease HII
HH0007	7076	7681	202	-	<i>hopZ</i>	Conserved hypothetical protein, similar to <i>H. pylori</i> Hop-family proteins
HH0008	7848	8888	347	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative GTP-binding protein
HH0009	9019	9273	85	-	<i>rpmA</i>	50S ribosomal protein L27
HH0010	9293	9604	104	-	<i>rplU</i>	50S ribosomal protein L21
HH0011	9758	10582	275	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative periplasmic protein, related to metalloendopeptidases
HH0012	10574	11254	227	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative transcriptional regulator Cj0466
HH0013	11394	13280	629	+	<i>gidA</i>	Glucose inhibited division protein A
HH0014	13308	13931	208	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0232 secreted protein involved in flagellar motility
HH0015	13936	15105	390	+	<i>ygiC</i>	Conserved hypothetical protein, similar to <i>H. pylori</i> HP0233
HH0016	15105	16670	522	-		Hypothetical protein, predicted secreted protein
HH0017	16695	18134	480	-		Aspartate oxidase
HH0018	18344	18799	152	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0820
HH0019	18792	20654	621	+	<i>uvrC</i>	Excinuclease ABC subunit C
HH0020	20820	22148	443	+		Hypothetical protein
HH0021	22148	23620	491	+		Two-component sensor histidine kinase family protein
HH0022	23613	24284	224	+		Two-component response regulator family protein
HH0023	24450	25739	430	+	<i>rho</i>	Transcription termination factor rho
HH0024	25751	26491	247	+	<i>murl</i>	Glutamate racemase
HH0025	26507	28696	730	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1089
HH0026	28811	30766	652	-	<i>tktA</i>	Transketolase
HH0027	30804	33206	801	-	<i>pheT</i>	Phenylalanyl-tRNA synthetase $\beta$ subunit
HH0028	33209	34207	333	-	<i>pheS</i>	Phenylalanyl-tRNA synthetase $\alpha$ subunit
HH0029	34349	34687	113	+		HIT hydrolase family protein
HH0030	34762	35343	194	+	<i>tehB</i>	Conserved hypothetical protein, similar to methyltransferases involved in tellurite resistance
HH0031	35415	36698	428	+		Conserved hypothetical membrane protein, possible cation efflux pump
HH0032	37160	37594	145	-		Conserved hypothetical membrane protein
HH0033	37609	39801	731	-	<i>feoB</i>	Ferrous ion uptake system protein
HH0034	39888	41126	413	-		Hypothetical protein, predicted secreted protein
HH0035	41139	41969	277	-	<i>panC</i>	Pantoate- $\beta$ -alanine ligase
HH0036	42009	42707	233	-	<i>pyrF</i>	Orotidine-5'-phosphate decarboxylase
HH0037	42711	43181	157	-	<i>nusB</i>	Transcription termination factor NusB
HH0038	43195	43662	156	-	<i>ribH</i>	Riboflavin synthase $\beta$ -chain
HH0039	43695	44504	270	-	<i>kdsA</i>	3-deoxy-d-manno-octulosonic acid 8-phosphate synthetase
HH0040	44518	45162	215	-	<i>icfA</i>	Carbonic anhydrase

HH0041	45310	45987	226	+		Conserved hypothetical protein, predicted membrane-associated
HH0042	46024	46497	158	-	<i>yahD</i>	Ankyrin repeat family protein
HH0043	46501	47934	478	-	<i>katA</i>	Catalase
HH0044	48104	48685	194	+	<i>ribA</i>	GTP cyclohydrolase II, RibA
HH0045	48725	49972	416	+	<i>moeA</i>	Molybdopterin biosynthesis enzyme
HH0046	50021	50242	74	+	<i>moaD</i>	Molybdopterin converting factor, small subunit
HH0047	50233	50703	157	+	<i>moaE</i>	Molybdopterin converting factor, large subunit
HH0048	50690	51250	187	+	<i>mobB</i>	Molybdopterin-guanine dinucleotide biosynthesis protein MobB
HH0049	51253	51789	179	+	<i>mog</i>	Molybdopterin biosynthesis enzyme MoaB
HH0050	51968	55225	1086	+		Hypothetical protein
HH0051	55397	56263	289	-		Hypothetical protein
HH0052	56477	56953	159	+	<i>moaC</i>	Molybdenum cofactor biosynthesis enzyme MoaC
HH0053	56957	58324	456	+		Conserved hypothetical protein, similar to <i>Vibrio cholerae</i> VC0082, predicted secreted protein
HH0054	58327	59910	528	-		Conserved hypothetical protein, similar to <i>Yersinia pestis</i> YPO2377, predicted membrane-associated
HH0055	59973	60287	105	-	<i>trxA</i>	Thioredoxin
HH0056	60643	61800	386	+	<i>hyaA</i>	Ni/Fe hydrogenases $\beta$ subunit
HH0057	61814	63541	576	+	<i>hyaB</i>	Ni/Fe hydrogenase $\alpha$ subunit
HH0058	63555	64316	254	+	<i>hyaC</i>	Ni/Fe hydrogenase cytochrome b subunit
HH0059	64327	64863	179	+	<i>hyaD</i>	Hydrogenase formation/expression protease HyaD/HupD
HH0060	64863	66653	597	+		Hypothetical protein
HH0061	66709	67476	256	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative periplasmic protein
HH0062	67490	68638	383	+	<i>metB</i>	Cystathionine $\gamma$ -synthase
HH0063	68643	69581	313	+	<i>cysK</i>	Cysteine synthase
HH0064	69565	70341	259	-		Conserved hypothetical protein, similar to putative <i>Bacteroides fragilis</i> glycosyl transferase
HH0065	70338	70496	53	-		Hypothetical protein
HH0066	70592	71062	157	+		Conserved hypothetical protein, similar to sugar transferase, may become fused with HH0067 due to slipped strand mispairing
HH0067	71217	71822	202	+		Conserved hypothetical protein, similar to sugar transferase, may become fused with HH0066 due to slipped strand mispairing
HH0068	71866	72771	302	-		Conserved hypothetical protein, similar to <i>Streptococcus gordonii</i> probable glycosyl transferase
HH0069	72771	73244	158	-		$\alpha$ -1,2-fucosyltransferase fragment, may become fused with HH0070 due to slipped strand mispairing
HH0070	73217	73666	150	-		$\alpha$ -1,2-fucosyltransferase fragment, may become fused with HH0069 due to slipped strand mispairing
HH0071	73686	74780	365	-		Conserved hypothetical protein, predicted aminotransferase
HH0072	74804	75763	320	-		Conserved hypothetical protein, predicted fucosyltransferase
HH0073	75769	76854	362	-		Conserved hypothetical protein, predicted glycosyltransferase
HH0074	76929	77558	210	-	<i>cfa</i>	Conserved hypothetical protein, possibly related to methylase involved in ubiquinone/menaquinone biosynthesis, cyclopropane fatty acid synthase and related methyltransferases
HH0075	77554	78276	241	-	<i>ygeA</i>	Aspartate racemase
HH0076	78400	79212	271	-		Conserved hypothetical protein, similar to <i>Salmonella typhi</i> putative methyltransferase
HH0077	79212	79850	213	-		Conserved hypothetical protein, predicted secreted protein
HH0078	79826	80422	199	-	<i>serB</i>	Phosphoserine phosphatase
HH0079	80422	81888	489	-		Hypothetical protein
HH0080	81953	83107	385	-		Hypothetical protein
HH0081	83107	84057	317	-		Conserved hypothetical protein, similar to glycosyltransferases
HH0082	84053	84868	272	-		UDP-N-acetylglucosamine 2-epimerase

HH0083	85290	86021	244	-		Conserved hypothetical protein
HH0084	86021	87661	547	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1302
HH0085	87677	87772	32	-		Conserved hypothetical protein fragment, similar to <i>C. jejuni</i> CJ1301, may become fused with HH0086 due to slipped strand mispairing
HH0086	87777	88088	104	-		Conserved hypothetical protein fragment, similar to <i>C. jejuni</i> CJ1301, may become fused with HH0085 due to slipped strand mispairing
HH0087	88091	88342	84	-		Acyl carrier protein
HH0088	88348	88917	190	-		Hypothetical protein
HH0089	88917	89876	320	-		Conserved hypothetical protein
HH0090	89985	91340	452	-		Conserved hypothetical protein, similar to <i>Haemophilus influenzae</i> O-succinylbenzoate-CoA ligase
HH0091	91343	92851	503	-		Hypothetical protein
HH0092	92847	93578	244	-		Conserved hypothetical protein, similar to <i>Escherichia coli</i> 3-oxoacyl-[acyl-carrier-protein] reductase
HH0093	93574	93864	97	-		Hypothetical protein
HH0094	93868	94428	187	-		Hypothetical protein
HH0095	94431	94991	187	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative acetyl transferase
HH0096	95258	95701	148	+		Conserved hypothetical protein
HH0097	95714	96112	133	+		Conserved hypothetical protein
HH0098	96477	97508	344	-		Possible molybdenum cofactor biosynthesis protein A
HH0099	97590	98618	343	-		DTDP-D-glucose 4,6-dehydratase
HH0100	98621	99493	291	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> glucose-1-phosphate thymidyltransferase
HH0101	99553	101364	604	-	<i>lepA</i>	Membrane GTPase LepA
HH0102	101556	102713	386	+	<i>ftsW</i>	Putative cell division protein FtsW
HH0103	102730	103245	172	+		Hypothetical protein, predicted membrane-associated
HH0104	103256	103993	246	+	<i>hemD</i>	Uroporphyrinogen-III synthase HemD
HH0105	104073	104900	276	+		Conserved hypothetical protein, possible parvulin-like peptidyl-prolyl isomerase
HH0106	104932	105852	307	+	<i>fba</i>	Fructose-bisphosphate aldolase
HH0107	105950	106108	53	+		Hypothetical protein
HH0108	106199	106759	187	+	<i>efp</i>	Translation elongation factor P
HH0109	106824	109400	859	-	<i>clpA</i>	ATP-dependent CLP protease ClpA, ATP-binding subunit
HH0110	109550	110977	476	-		Conserved hypothetical protein, possible putative thiophene/furan oxidation protein
HH0111	110916	111719	268	-		Conserved hypothetical protein
HH0112	111725	113497	591	-		Conserved hypothetical membrane protein, SpoIIJ family
HH0113	113505	113771	89	-		Conserved hypothetical protein
HH0114	113789	113956	56	+		Hypothetical protein
HH0115	113889	114326	146	-	<i>rnpA</i>	Ribonuclease P, protein component
HH0116	114353	114484	44	-	<i>rpmH</i>	Ribosomal protein L34
HH0117	114547	115260	238	-		Conserved hypothetical protein, predicted secreted protein
HH0118	115270	117186	639	-		Hypothetical protein, predicted membrane-associated
HH0119	117211	117588	126	-		Biopolymer transport protein, ExbD-like
HH0120	117588	118037	150	-		Biopolymer transport protein, ExbB-like
HH0121	118059	118523	155	-	<i>smpB</i>	TmRNA-binding protein SmpB
HH0122	118528	119205	226	-		Conserved hypothetical protein, YchB/YabH family
HH0123	119338	119574	79	-		Conserved hypothetical protein, similar to <i>H. pylori</i> putative carbon storage regulator
HH0124	119549	120400	284	-	<i>truB</i>	TRNA pseudouridine synthase B

HH0125	120466	121524	353	-		Hypothetical protein, predicted secreted protein
HH0126	121534	122391	286	-		Hypothetical protein, predicted membrane-associated
HH0127	122391	122885	165	-		Conserved hypothetical protein, HIT family
HH0128	122901	124379	493	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative UDP-N-acetylmuramoylalanyl-D-glutamyl-2,6-diaminopimelate ligase
HH0129	124393	124680	96	-		Conserved hypothetical protein, possible acylphosphatase
HH0130	124680	125282	201	-		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0676
HH0131	125436	126485	350	-	<i>ddl</i>	D-alanine-D-alanine ligase
HH0132	126491	129319	943	-	<i>uvrA</i>	Excinuclease ABC subunit A
HH0133	129368	129643	92	-		Hypothetical protein, predicted secreted protein
HH0134	129507	129626	40	+		Hypothetical protein
HH0135	129670	131247	526	-	<i>serA</i>	D-3-phosphoglycerate dehydrogenase
HH0136	131272	131733	154	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0398, predicted secreted protein
HH0137	131753	133408	552	-	<i>rpsA</i>	Ribosomal protein S1
HH0138	133505	134323	273	-	<i>lytB</i>	Penicillin tolerance protein LytB
HH0139	134316	135629	438	-	<i>aroA</i>	3-phosphoshikimate 1-carboxyvinyltransferase
HH0140	135699	136754	352	-		Two component system sensor kinase protein
HH0141	136741	137121	127	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1463
HH0142	137135	138178	348	-	<i>flgI</i>	Flagellar basal-body P-ring protein FlgI
HH0143	138402	139010	203	-		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP1024, predicted secreted protein
HH0144	139013	139441	143	-		Conserved hypothetical protein
HH0145	139588	139713	42	+		Hypothetical protein, predicted secreted protein
HH0146	139783	139878	32	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1515
HH0147	139870	141609	580	+		Hypothetical protein, predicted secreted protein
HH0148	141625	141951	109	-		Hypothetical protein, predicted secreted protein
HH0149	141968	142582	205	-	<i>hisG</i>	ATP phosphoribosyltransferase
HH0150	142617	143234	206	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0394c
HH0151	143237	144259	341	-		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0797, predicted secreted protein
HH0152	144292	144942	217	-		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0798, predicted membrane-associated
HH0153	144956	145429	158	-	<i>dut</i>	Deoxyuridine 5'-triphosphate nucleotidohydrolase
HH0154	145436	145924	163	-	<i>greA</i>	Transcription elongation factor GreA
HH0155	146041	147339	433	-	<i>putP</i>	Sodium/proline symporter
HH0156	147612	151109	1166	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> dehydrogenase CJ1505
HH0157	151143	151235	31	-		Hypothetical protein
HH0158	151422	154232	937	+	<i>napA</i>	Periplasmic nitrate reductase, large subunit
HH0159	154245	155084	280	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative ferredoxin
HH0160	155087	156013	309	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative ferredoxin
HH0161	156013	156573	187	+	<i>napB</i>	Periplasmic nitrate reductase, small subunit
HH0162	156588	157634	349	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative periplasmic protein CJ0784
HH0163	157637	157993	119	+	<i>napD</i>	Periplasmic nitrate reductase component NapD
HH0164	158074	158463	130	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0465c
HH0165	158586	159020	145	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1502, predicted membrane-associated
HH0166	159256	159705	150	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative transcriptional regulator Cj0466
HH0167	159706	161079	458	-		Conserved hypothetical membrane protein, possible cation efflux pump

HH0168	161096	161818	241	-	<i>kdsB</i>	3-deoxy-manno-octulosonate cytidyltransferase
HH0169	161890	163098	403	-		Conserved hypothetical protein
HH0170	163233	163409	59	+		Hypothetical protein, predicted secreted protein
HH0171	163418	165415	666	+		Conserved hypothetical protein, predicted membrane-associated
HH0172	165492	166625	378	+	<i>gmd</i>	GDP-D-mannose dehydratase
HH0173	166657	167697	347	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative fucose synthetase
HH0174	167705	170830	1042	-		Conserved hypothetical membrane protein, possible cation efflux pump
HH0175	170843	172021	393	-		Conserved hypothetical membrane protein, possible cation efflux pump
HH0176	172276	172770	165	-	<i>ygaG</i>	LuxS protein involved in autoinducer AI2 synthesis
HH0177	172829	173260	144	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> membrane protein CJ0341c
HH0178	173307	174239	311	-		Conserved hypothetical protein, putative 2-hydroxy acid dehydrogenase
HH0179	174324	175163	280	+	<i>argB</i>	Acetylglutamate kinase
HH0180	175163	175639	159	+		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0087
HH0181	175658	175891	78	+		Hypothetical protein, may become fused with HH0182 due to slipped strand mispairing
HH0182	175875	176453	193	+		Hypothetical protein, may become fused with HH0181 due to slipped strand mispairing
HH0183	176947	179181	745	-	<i>flgE</i>	Flagellar hook protein FlgE, similar to <i>H. pylori</i> HP0908 (FlgE2)
HH0184	179181	179999	273	-	<i>flgD</i>	Flagellar hook assembly protein FlgD, similar to <i>H. pylori</i> HP0907
HH0185	180024	181256	411	-		Hypothetical protein
HH0186	181396	182301	302	-		Hypothetical protein
HH0187	182571	183254	228	-		Conserved hypothetical protein, similar to <i>Neisseria meningitidis</i> putative periplasmic protein
HH0188	183257	184150	298	-		Hypothetical protein, predicted secreted protein
HH0189	184276	185013	246	-		Hypothetical protein, predicted secreted protein
HH0190	185032	185337	102	-		Hypothetical protein, predicted secreted protein
HH0191	185594	185713	40	+		Hypothetical protein, predicted membrane-associated
HH0192	185786	185908	41	-		Hypothetical protein
HH0193	186064	186579	172	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> possible deoxycytidine triphosphate deaminase CJ1292
HH0194	186721	187191	157	+	<i>accB</i>	Biotin carboxyl carrier protein
HH0195	187204	188565	454	+	<i>accC</i>	Biotin carboxylase
HH0196	188600	189286	229	+		Hypothetical protein
HH0197	189306	190481	392	+		Conserved hypothetical protein, predicted aminotransferase
HH0198	190571	192226	552	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative small Ni/fe-hydrogenase CJ1399c
HH0199	192315	193115	267	+		Hypothetical protein
HH0200	193150	193824	225	+		Hypothetical protein
HH0201	194149	194655	169	+		Conserved hypothetical protein, predicted membrane-associated
HH0202	194663	195127	155	+		Conserved hypothetical protein, similar to tellurite resistance permeases
HH0203	195140	196237	366	-	<i>glf</i>	UDP-galactopyranose mutase
HH0204	196244	197284	347	-		Conserved hypothetical glycosyl transferase
HH0205	197368	198495	376	-		Conserved hypothetical glycosyl transferase
HH0206	198560	199489	310	-		Conserved hypothetical protein, similar to <i>Klebsiella pneumoniae</i> RFBC protein
HH0207	199495	200310	272	-		Conserved hypothetical protein, similar to <i>K. pneumoniae</i> RFBC protein
HH0208	200542	201606	355	-		3,4-dihydroxy-2-butanone 4-phosphate synthase
HH0209	201641	201745	35	-		Hypothetical protein
HH0210	201769	202236	156	-	<i>dps</i>	Starvation-inducible DNA-binding protein Dps
HH0211	202278	202397	40	-		Hypothetical protein

HH0212	203064	203537	158	+		Hypothetical protein
HH0213	203584	204453	290	+		Hypothetical protein
HH0214	204452	205273	274	-		Conserved hypothetical protein
HH0215	205388	205891	168	+		Conserved hypothetical protein, cytochrome c-type protein
HH0216	205917	206237	107	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative periplasmic cytochrome c CJ1357c
HH0217	206284	207765	494	+		Conserved hypothetical protein, similar to cytochrome c-type proteins
HH0218	207823	207960	46	+		Hypothetical protein
HH0219	208046	208867	274	+		Hypothetical protein
HH0220	208882	209289	136	+	<i>dgkA</i>	Diacylglycerol kinase
HH0221	209302	210069	256	-		Hypothetical protein, predicted secreted protein
HH0222	210148	213219	1024	-		Conserved hypothetical protein, similar to <i>H. pylori</i> putative resistance-nodulation-division efflux system protein HefC
HH0223	213222	213920	233	-		Conserved hypothetical protein, similar to <i>H. pylori</i> putative resistance-nodulation-division efflux system protein HefB
HH0224	213942	215297	452	-		Conserved hypothetical protein, similar to <i>H. pylori</i> putative resistance-nodulation-division efflux system protein HefA
HH0225	215397	216173	259	-	<i>fdhD</i>	FdhD/NarQ protein required for formate dehydrogenase activity
HH0226	216185	217156	324	-	<i>fdhC</i>	Formate dehydrogenase-N, $\gamma$ subunit
HH0227	217170	217796	209	-	<i>fdhB</i>	Fe-S-cluster-containing formate dehydrogenase component 1
HH0228	217814	220057	748	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative formate dehydrogenase, iron-sulfur subunit
HH0229	220082	220633	184	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative formate dehydrogenase, large subunit
HH0230	220656	220868	71	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> possible periplasmic protein CJ1513c
HH0231	220960	221601	214	-		Hypothetical protein
HH0232	221604	223130	509	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative ferredoxin CJ1377c
HH0233	223221	224198	326	-		Hypothetical protein, predicted membrane-associated
HH0234	224336	225118	261	-		Hypothetical protein, predicted membrane-associated
HH0235	225108	226610	501	-		Hypothetical protein
HH0236	226610	227245	212	-		Hypothetical protein, predicted membrane-associated
HH0237	227245	228036	264	-		Hypothetical protein
HH0238	228129	228986	286	-		DNA adenine methylase
HH0239	228986	229768	261	-		Type II restriction endonuclease
HH0240	229867	230250	128	-		Hypothetical protein
HH0241	230309	231583	425	-		Hypothetical protein, predicted membrane-associated
HH0242	231621	234416	932	-		Hypothetical protein
HH0243	234546	235052	169	-		Conserved hypothetical protein, similar to <i>V. cholerae</i> hcp protein VCA0017 and VC1415
HH0244	235152	236144	331	-		Conserved hypothetical protein, similar to <i>V. cholerae</i> VCA0111
HH0245	236144	237856	571	-		Conserved hypothetical protein, similar to <i>V. cholerae</i> VCA0110
HH0246	237929	238315	129	-		Conserved hypothetical protein, similar to <i>V. cholerae</i> VCA0109
HH0247	238322	239791	490	-		Conserved hypothetical protein, similar to <i>V. cholerae</i> VCA0108
HH0248	239842	240336	165	-		Conserved hypothetical protein, similar to <i>V. cholerae</i> VCA0107
HH0249	240524	241057	178	+		Conserved hypothetical protein, similar to <i>V. cholerae</i> VCA0113
HH0250	241053	242429	459	+		Conserved hypothetical protein, similar to <i>V. cholerae</i> VCA0114
HH0251	242444	243229	262	+		Conserved hypothetical protein, similar to <i>V. cholerae</i> VCA0115
HH0252	243237	246788	1184	+		Conserved hypothetical protein, similar to <i>V. cholerae</i> lcmF, putative VirB10-like protein
HH0253	246801	247778	326	+		Hypothetical protein
HH0254	247875	249140	422	-		Hypothetical protein
HH0255	249171	253067	1299	-		Hypothetical protein, predicted membrane-associated

HH0256	253176	254729	518	-	Hypothetical protein
HH0257	254725	256059	445	-	Hypothetical protein
HH0258	256072	256437	122	-	Hypothetical protein, predicted membrane-associated
HH0259	256451	257131	227	-	Hypothetical protein
HH0260	257127	258914	596	-	Conserved hypothetical protein, putative VirB4-like protein
HH0261	258914	259519	202	-	Hypothetical protein, predicted membrane-associated
HH0262	260342	260572	77	-	Hypothetical protein
HH0263	260653	260802	50	-	Hypothetical protein, predicted membrane-associated
HH0264	260979	261083	35	-	Hypothetical protein
HH0265	261105	261452	116	+	Hypothetical protein
HH0266	261497	262195	233	+	Hypothetical protein
HH0267	262248	262460	71	+	Hypothetical protein, predicted membrane-associated
HH0268	262472	262780	103	+	Conserved hypothetical protein, similar to <i>C. jejuni</i> periplasmic protein
HH0269	263408	264250	281	-	Integrase
HH0270	264684	266786	701	-	Hypothetical protein
HH0271	266913	267014	34	+	Hypothetical protein
HH0272	267832	268335	168	-	Hypothetical protein
HH0273	268353	268697	115	-	Hypothetical protein
HH0274	268844	269578	245	-	Hypothetical protein
HH0275	270051	273476	1142	+	Conserved hypothetical protein, putative VirD4-like protein
HH0276	273586	274074	163	-	Hypothetical protein
HH0277	274388	274927	180	+	Hypothetical protein
HH0278	274985	275350	122	+	Conserved hypothetical protein
HH0279	275943	276161	73	+	Hypothetical protein
HH0280	276333	277094	254	+	Hypothetical protein
HH0281	277275	277757	161	-	Hypothetical protein
HH0282	277771	278403	211	-	Hypothetical protein
HH0283	278551	278862	104	-	Hypothetical protein
HH0284	279094	279288	65	-	Hypothetical protein, predicted secreted protein
HH0285	279288	279725	146	-	Hypothetical protein
HH0286	279848	279973	42	-	Hypothetical protein
HH0287	280156	280551	132	-	Hypothetical protein, predicted membrane-associated
HH0288	280627	280926	100	-	Hypothetical protein
HH0289	280978	282777	600	-	Hypothetical protein
HH0290	282794	283441	216	-	Hypothetical protein, predicted secreted protein
HH0291	283453	284859	469	-	Hypothetical protein
HH0292	284859	285515	219	-	Hypothetical protein
HH0293	285605	286213	203	-	Hypothetical protein, predicted membrane-associated
HH0294	286293	288848	852	-	Hypothetical protein, predicted membrane-associated
HH0295	288851	289528	226	-	Hypothetical protein, predicted membrane-associated
HH0296	289528	290304	259	-	Hypothetical protein, predicted membrane-associated
HH0297	290307	290471	55	-	Hypothetical protein
HH0298	290471	291052	194	-	Hypothetical protein, predicted membrane-associated
HH0299	291052	291627	192	-	Hypothetical protein

HH0300	291635	292222	196	-		Hypothetical protein, predicted membrane-associated
HH0301	292584	293294	237	-		Hypothetical protein, predicted secreted protein
HH0302	293315	294244	310	-		Hypothetical protein
HH0303	294427	295005	193	-	<i>trpG</i>	Para-aminobenzoate synthase glutamine amidotransferase component II
HH0304	295005	296852	616	-	<i>trpE</i>	Para-aminobenzoate synthase glutamine amidotransferase component I
HH0305	296981	299239	753	+		Hypothetical protein
HH0306	299261	302749	1163	-		Conserved hypothetical protein, acyl transferase family
HH0307	302808	303746	313	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative periplasmic protein
HH0308	303839	304756	306	-		Conserved hypothetical protein, GTPases, ERA family
HH0309	304777	306108	444	-	<i>hslU</i>	ATP-dependent protease subunit HslU/ClpY
HH0310	306125	306664	180	-	<i>hslV</i>	ATP-dependent protease subunit HslV/ClpQ
HH0311	306682	307122	147	-	<i>rplI</i>	Ribosomal protein L9
HH0312	307144	307869	242	+		Conserved hypothetical protein
HH0313	307883	308833	317	-		Hypothetical protein, predicted secreted protein
HH0314	308846	310447	534	-	<i>trpD</i>	Anthranilate phosphoribosyltransferase
HH0315	310454	311947	498	-	<i>trpE</i>	Anthranilate synthases component I
HH0316	311981	312517	179	-	<i>lolA</i>	Outer membrane lipoproteins carrier protein LolA
HH0317	312776	315187	804	+	<i>secA</i>	Preprotein translocase subunit SecA
HH0318	315191	316441	417	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative integral membrane protein CJ0941c
HH0319	316541	316789	83	+		Hypothetical protein, possible RNA-binding protein with RRM domain
HH0320	316799	317803	335	-	<i>hypE</i>	Hydrogenase isoenzymes formation protein
HH0321	317825	319504	560	-		Conserved hypothetical protein, possible helicase subunit
HH0322	319511	320650	380	-	<i>hypD</i>	Hydrogenase isoenzymes formation protein
HH0323	320646	321362	239	-		Conserved hypothetical protein, similar to <i>H. pylori</i> putative lipopolysaccharide biosynthesis protein HP0805
HH0324	321413	321670	86	-	<i>hypC</i>	Hydrogenase isoenzymes formation protein HypC
HH0325	321683	322408	242	-	<i>hypB</i>	Hydrogenase expression/formation protein HypB
HH0326	322392	324812	807	-	<i>hypF</i>	Transcriptional regulatory protein HypF
HH0327	324933	326138	402	+	<i>pgk</i>	3-phosphoglycerate kinase
HH0328	326141	326941	267	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1113
HH0329	327008	327316	103	+		Hypothetical protein, may become fused with HH0330 due to slipped strand mispairing
HH0330	327409	327852	148	+		Hypothetical protein, may become fused with HH0329 due to slipped strand mispairing
HH0331	327821	328330	170	+	<i>panD</i>	Aspartate 1-decarboxylase
HH0332	328336	328659	108	+	<i>ybaB</i>	Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1642
HH0333	328655	329719	355	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0036, predicted secreted protein
HH0334	329731	330594	288	+	<i>ispA</i>	Geranyltranstransferase
HH0335	330594	331385	264	+	<i>surE</i>	Stationary phase survival protein SurE
HH0336	331367	332065	233	+		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0692, MoeB/ThiF family
HH0337	332069	332200	44	+		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0693
HH0338	332213	333100	296	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative hydrolase CJ0947c
HH0339	333211	333645	145	+		Conserved hypothetical protein, similar to <i>Pseudomonas aeruginosa</i> PA4578, predicted secreted protein
HH0340	333898	335712	605	+		Conserved hypothetical protein, similar to <i>P. aeruginosa</i> PA4579
HH0341	335722	336285	188	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1254
HH0342	336272	336652	127	-		Hypothetical protein, predicted membrane-associated
HH0343	336658	336819	54	-		Hypothetical protein, predicted secreted protein



HH0344	336719	336925	69	+		Hypothetical protein, predicted membrane-associated
HH0345	336946	337602	219	+	<i>glnP</i>	Glutamine ABC transporter permease GlnP
HH0346	337653	338258	202	+		Conserved hypothetical protein, similar to amino acid ABC transporter permeases
HH0347	338258	339007	250	+	<i>glnQ</i>	Conserved hypothetical protein, similar to amino acid ABC transporter ATP binding components
HH0348	339010	339528	173	-		Hypothetical protein
HH0349	339646	340623	326	-		Hypothetical protein, predicted secreted protein
HH0350	340629	340967	113	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1414
HH0351	341000	341653	218	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1337
HH0352	341637	342065	143	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1338
HH0353	342217	342651	145	+		Biopolymer transport protein, ExbB-like
HH0354	342657	343034	126	+		Biopolymer transport protein, ExbD-like
HH0355	343003	343728	242	+		TonB-like protein
HH0356	343756	344163	136	-		Hypothetical protein
HH0357	344222	344506	95	-		Hypothetical protein, predicted secreted protein
HH0358	344513	346588	692	-	<i>fusA</i>	Translation elongation factor EF-G
HH0359	346607	347071	155	-	<i>rpsG</i>	Ribosomal protein S7
HH0360	347090	347476	129	-	<i>rpsL</i>	Ribosomal protein S12
HH0361	347571	356252	2894	-	<i>rpoB</i>	DNA-dependent RNA polymerase $\beta$ subunit
HH0362	356403	356780	126	-	<i>rplL</i>	Ribosomal protein L7/L12
HH0363	356804	357283	160	-	<i>rplJ</i>	Ribosomal protein L10
HH0364	357377	358078	234	-	<i>rplA</i>	Ribosomal protein L1
HH0365	358098	358520	141	-	<i>rplK</i>	Ribosomal protein L11
HH0366	358553	359065	171	-	<i>nusG</i>	Transcription termination factor NusG
HH0367	359089	359268	60	-	<i>secE</i>	Preprotein translocase, subunit SecE
HH0368	359399	359566	56	-	<i>rpmG</i>	Ribosomal protein L33
HH0369	359584	360780	399	-	<i>tufA</i>	Translation elongation factor EF-Tu
HH0370	361949	362434	162	+		Hypothetical protein, predicted membrane-associated
HH0371	362976	363086	37	+		Hypothetical protein
HH0372	363192	364346	385	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0624, predicted aminotransferase
HH0373	364346	365662	439	+	<i>murC</i>	UDP-N-acetylmuramate-alanine ligase
HH0374	365665	366114	150	+		Hypothetical protein, predicted membrane-associated
HH0375	366104	368323	740	+	<i>mutS</i>	Mismatch repair ATPase MutS
HH0376	368393	369133	247	+		Hypothetical protein, predicted membrane-associated
HH0377	369136	369426	97	+		Hypothetical protein
HH0378	369448	369915	156	-		Predicted rRNA methylase (SpoU class), similar to <i>C. jejuni</i> CJ0904c
HH0379	370065	371636	524	+	<i>dcuA</i>	Anaerobic C4-dicarboxylate transporter DcuA
HH0380	371691	372725	345	+	<i>galE</i>	UDP-glucose 4-epimerase
HH0381	372745	373500	252	+		Hypothetical protein, predicted secreted protein
HH0382	373514	374518	335	+		Hypothetical protein
HH0383	374548	375918	457	+		Hypothetical protein
HH0384	376094	376618	175	+		Hypothetical protein
HH0385	376621	377160	180	+		Hypothetical protein, predicted membrane-associated
HH0386	377153	377797	215	+		Hypothetical protein
HH0387	377800	378360	187	+		Hypothetical protein, predicted membrane-associated

HH0388	378353	378730	126	+		Hypothetical protein
HH0389	378733	379083	117	+		Hypothetical protein, predicted membrane-associated
HH0390	379101	379643	181	+		Hypothetical protein
HH0391	379627	380205	193	+		Hypothetical protein, predicted membrane-associated
HH0392	380201	380677	159	+		Hypothetical protein
HH0393	380691	381182	164	+		Hypothetical protein, predicted membrane-associated
HH0394	381160	381519	120	+		Hypothetical protein
HH0395	381507	382451	315	-		Hypothetical protein
HH0396	382630	384528	633	+	<i>acoE</i>	Acetyl-CoA synthetase
HH0397	384535	385407	291	+	<i>prpB</i>	Carboxyphosphoenolpyruvate phosphomutase PrpB, involved in propionate metabolism
HH0398	385421	386566	382	+	<i>prpC</i>	Citrate synthase PrpC, involved in propionate metabolism
HH0399	386603	388057	485	+	<i>prpD</i>	Citrate synthase PrpD, involved in propionate metabolism
HH0400	388108	388620	171	+		Hypothetical protein
HH0401	388741	389253	171	-		Hypothetical protein
HH0402	389539	389691	51	-		Hypothetical protein
HH0403	389691	390569	293	-		Hypothetical protein, predicted membrane-associated
HH0404	390634	390990	119	-		Hypothetical protein, predicted membrane-associated
HH0405	391032	391439	136	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative acid periplasmic protein CJ0424
HH0406	391621	391863	81	+		Hypothetical protein, predicted membrane-associated
HH0407	391929	392603	225	+	<i>ureA</i>	Urease, $\alpha$ subunit
HH0408	392628	394334	569	+	<i>ureB</i>	Urease, $\beta$ subunit
HH0409	394347	394856	170	+	<i>ureI</i>	Urease accessory protein UreI
HH0410	394829	395380	184	+	<i>ureE</i>	Urease accessory protein UreE
HH0411	395380	396039	220	+	<i>ureF</i>	Urease accessory protein UreF
HH0412	396053	396652	200	+	<i>ureG</i>	Urease/hydrogenase-associated predicted GTPases UreG
HH0413	396730	397407	226	+	<i>ureH</i>	Urease accessory protein UreH
HH0414	397416	398126	237	-	<i>nikE</i>	Nickel transport ATP-binding protein NikE
HH0415	398123	399787	555	-	<i>nikD</i>	Nickel transport permease component NikD
HH0416	399787	400680	298	-	<i>nikB</i>	Nickel transport system permease protein NikB
HH0417	400800	402362	521	-	<i>nikA</i>	Nickel transport system periplasmic component NikA
HH0418	402505	404676	724	+		Conserved hypothetical protein, similar to <i>P. aeruginosa</i> outer membrane hemin receptor
HH0419	404743	405534	264	+	<i>proB</i>	Glutamate 5-kinase
HH0420	405498	406445	316	+	<i>fmt</i>	Methionyl-tRNA formyltransferase
HH0421	406464	407180	239	+	<i>birA</i>	Biotin operon repressor BirA
HH0422	407194	407976	261	+	<i>parA</i>	ATPases involved in chromosome partitioning ParA
HH0423	407985	408854	290	+	<i>parB</i>	Transcriptional regulator involved in chromosome partitioning ParB
HH0424	408934	409356	141	+	<i>atpF</i>	FoF1-type ATP synthase, subunit B'
HH0425	409369	409881	171	+	<i>atpF'</i>	FoF1-type ATP synthase, subunit B
HH0426	409884	410405	174	+	<i>atpH</i>	FoF1-type ATP synthase, delta subunit
HH0427	410430	411941	504	+	<i>atpA</i>	FoF1-type ATP synthase, $\alpha$ subunit
HH0428	411957	412847	297	+	<i>atpG</i>	FoF1-type ATP synthase, $\gamma$ subunit
HH0429	412869	414266	466	+	<i>atpD</i>	FoF1-type ATP synthase, $\beta$ subunit
HH0430	414278	414670	131	+	<i>atpC</i>	FoF1-type ATP synthase, $\epsilon$ subunit
HH0431	414683	415243	187	+		Biopolymer transport protein, ExbB-like

HH0432	415254	415646	131	+		Biopolymer transport protein ExbD-like
HH0433	415651	416340	230	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1127, predicted secreted protein
HH0434	416353	417609	419	+		Acetyl esterase TolB, periplasmic component of the Tol biopolymer transport system
HH0435	417669	418127	153	+		Conserved hypothetical protein, MotB-family
HH0436	418154	418996	281	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1124, predicted secreted protein
HH0437	418996	419547	184	+	<i>slyD</i>	FKBP-type peptidyl-prolyl cis-trans isomerases 2, rotamase
HH0438	419734	419997	88	+	<i>fliQ</i>	Flagellar basal body protein FliQ
HH0439	420004	420792	263	+	<i>murB</i>	UDP-N-acetylmuramate dehydrogenase
HH0440	421336	421731	132	+	<i>secG</i>	Membrane protein SecG involved in protein secretion
HH0441	421749	422303	185	+	<i>frr</i>	Ribosome releasing factor
HH0442	422309	424120	604	+	<i>thrS</i>	Threonyl-tRNA synthetase
HH0443	424120	424641	174	+	<i>infC</i>	Translation initiation factor IF3
HH0444	424616	424858	81	+	<i>rpml</i>	Ribosomal protein L35
HH0445	424944	425294	117	+	<i>rplT</i>	Ribosomal protein L20
HH0446	425458	426612	385	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1044, predicted membrane-associated
HH0447	426587	427249	221	-		Hypothetical protein
HH0448	427249	427419	57	-		Hypothetical protein, predicted membrane-associated
HH0449	427437	428129	231	-	<i>hisI</i>	Phosphoribosyl-AMP cyclohydrolase/ phosphoribosyl-ATP pyrophosphohydrolase
HH0450	428137	429231	365	-		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0233, predicted membrane-associated
HH0451	429236	430165	310	-	<i>ilvE</i>	Branched-chain-amino-acid aminotransferase IlvE
HH0452	430301	431770	490	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1249
HH0453	432151	434973	941	+	<i>ftsK</i>	DNA segregation ATPase FtsK/SpoIIIE
HH0454	435032	436462	477	+	<i>htrA</i>	Serine protease, similar to <i>C. jejuni</i> HtrA
HH0455	436487	437320	278	+	<i>cheR</i>	Chemotaxis protein methyltransferase CheR
HH0456	437327	438037	237	+	<i>cheB</i>	Chemotaxis protein methylesterase CheB
HH0457	438249	438494	82	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1436, predicted membrane-associated
HH0458	438507	441509	1001	-	<i>mfd</i>	Transcription-repair coupling factor
HH0459	441539	441955	139	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1542
HH0460	441916	442812	299	-		Membrane proteins related to metalloendopeptidases, similar to <i>H. pylori</i> HP1543
HH0461	442819	443691	291	-	<i>tagE</i>	Conserved hypothetical protein, similar to <i>V. cholerae</i> TagE (VC0843)
HH0462	443695	444900	402	-	<i>folC</i>	Folylpolyglutamate synthase
HH0463	444900	445931	344	-		Hypothetical protein
HH0464	445909	446418	170	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1546
HH0465	446421	448910	830	-	<i>leuS</i>	Leucyl-tRNA synthetase
HH0466	449135	450373	413	+	<i>alr</i>	Alanine racemase
HH0467	450486	452690	735	+	<i>flhA</i>	Flagellar basal body protein FlhA
HH0468	452702	453826	375	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1042
HH0469	453826	454092	89	+		Hypothetical protein
HH0470	454156	454728	191	+	<i>purN</i>	GAR transformylase PurN
HH0471	454728	455909	394	+	<i>kefB</i>	Conserved hypothetical protein, similar to <i>H. pylori</i> ion-channel HP1183
HH0472	455912	457306	465	+		Sodium-dependent transporter (SNF family), similar to <i>C. jejuni</i> CJ0601c
HH0473	457376	459148	591	+		Periplasmic binding component of ABC-type transport system, similar to <i>H. pylori</i> HP1252
HH0474	459280	461034	585	+		Predicted ATPase (AAA-family), similar to <i>C. jejuni</i> CJ0377
HH0475	461338	461646	103	+		Hypothetical protein, predicted secreted protein

HH0476	461646	462071	142	+		Hypothetical protein, predicted secreted protein
HH0477	462353	462676	108	+		Hypothetical protein
HH0478	462752	463798	349	+		Predicted ATPase, similar to <i>H. pylori</i> HP1079
HH0479	464216	464356	47	+		Hypothetical protein
HH0480	464383	464478	32	+		Hypothetical protein
HH0481	464455	466539	695	-		Conserved hypothetical protein, similar to methyl-accepting chemotaxis proteins, similar to <i>C. jejuni</i> CJ1506c
HH0482	466710	467771	354	+		Predicted ATPase (AAA-family), similar to <i>H. pylori</i> HP1321
HH0483	467788	469155	456	-	<i>purH</i>	AICAR transformylase PurH
HH0484	469382	470257	292	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1132c
HH0485	470499	471149	217	+	<i>hisH</i>	Glutamine amidotransferase HisH
HH0486	471235	472167	311	+	<i>trxB_1</i>	Thioredoxin reductase TrxB
HH0487	472213	472977	255	+	<i>dapB</i>	Dihydrodipicolinate reductase
HH0488	473048	474469	474	+	<i>purF</i>	Glutamine phosphoribosylpyrophosphate amidotransferase PurF
HH0489	474482	475441	320	+		Conserved hypothetical protein, similar to <i>E. coli</i> YhcC
HH0490	475479	476339	287	-		Conserved hypothetical protein, similar to <i>H. pylori</i> putative periplasmic protein
HH0491	476360	477607	416	-	<i>pgi</i>	Glucose-6-phosphate isomerase
HH0492	477617	478597	327	-	<i>gap_2</i>	Glyceraldehyde-3-phosphate dehydrogenase
HH0493	478615	478719	35	-		Hypothetical protein
HH0494	478827	479723	299	-		Hypothetical protein
HH0495	479807	481897	697	-	<i>ppk</i>	Polyphosphate kinase
HH0496	482101	482610	170	+		Hypothetical protein, predicted secreted protein
HH0497	482701	484542	614	+	<i>yigC</i>	Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0546
HH0498	484628	485053	142	+	<i>rplM</i>	Ribosomal protein L13
HH0499	485065	485451	129	+	<i>rpsI</i>	Ribosomal protein S9
HH0500	485552	486082	177	+	<i>ycbL</i>	Predicted hydrolase, similar to <i>C. jejuni</i> CJ0809c
HH0501	486136	486903	256	+	<i>motA</i>	Flagellar motor component MotA
HH0502	486926	487678	251	+	<i>motB</i>	Flagellar motor component MotB
HH0503	487742	487861	40	+		Hypothetical protein, may become fused with HH0504 due to slipped strand mispairing
HH0504	487930	488163	78	+		Hypothetical protein, may become fused with HH0503 due to slipped strand mispairing
HH0505	488422	488628	69	+		Hypothetical protein, predicted membrane-associated
HH0506	488675	489682	336	-	<i>ruvB</i>	Holliday junction DNA helicase RuvB
HH0507	489766	490557	264	-	<i>panB</i>	Ketopantoate hydroxymethyltransferase
HH0508	490587	490904	106	-		Predicted efflux protein, similar to <i>C. jejuni</i> CJ1174
HH0509	490908	491261	118	-		Predicted efflux protein
HH0510	491261	492136	292	-	<i>lgt</i>	Prolipoprotein diacylglyceryltransferase
HH0511	492142	492459	106	-		Hypothetical protein
HH0512	492522	492995	158	-		Hypothetical protein
HH0513	493014	494609	532	-		Conserved hypothetical protein, similar to methyl-accepting chemotaxis proteins
HH0514	494640	495227	196	-	<i>ruvA</i>	Holliday junction DNA helicase RuvA
HH0515	495286	497139	618	-		Hypothetical protein
HH0516	497317	498696	460	+		Conserved hypothetical protein, similar to <i>E. coli</i> MviN, predicted membrane-associated
HH0517	498696	500159	488	+	<i>cysS</i>	CysteinyI-tRNA synthetase
HH0518	500167	501024	286	-	<i>ribF</i>	Riboflavin kinase/FAD synthase RibF
HH0519	500996	501718	41	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1086

HH0520	501730	502242	171	-		Hypothetical protein
HH0521	502410	503300	297	+	<i>pyrB</i>	Aspartate carbamoyltransferase
HH0522	503427	504734	436	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1083, predicted secreted protein
HH0523	504844	505695	284	+	<i>cdsA</i>	CDP-diglyceride synthetase CdsA
HH0524	505702	506808	369	+	<i>dxr</i>	1-deoxy-D-xylulose 5-phosphate reductoisomerase
HH0525	506966	507601	212	+		Conserved hypothetical protein, similar to <i>H. pylori</i> Hop-family proteins
HH0526	507605	507697	31	+		Hypothetical protein
HH0527	507717	509258	514	+	<i>thrC</i>	Threonine synthase
HH0528	509346	509837	164	+	<i>purE</i>	NCAIR mutase PurE
HH0529	509850	510329	160	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> Cj0703
HH0530	510329	511246	306	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0703
HH0531	511258	512151	298	+	<i>glyQ</i>	Glycyl-tRNA synthetase, $\alpha$ subunit
HH0532	512154	514205	684	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative periplasmic protein
HH0533	514218	514901	228	+		Hypothetical protein
HH0534	515008	516849	614	+		Conserved hypothetical protein, predicted ribonuclease, similar to <i>H. pylori</i> HP1248
HH0535	517329	518336	336	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1247
HH0536	518434	518844	137	+	<i>rpsF</i>	Ribosomal protein S6
HH0537	518865	519374	170	+	<i>ssb</i>	Single-stranded DNA-binding protein
HH0538	519471	519647	59	+	<i>rpsR</i>	Ribosomal protein S18
HH0539	519753	521813	687	+		Hypothetical protein, predicted membrane-associated
HH0540	521952	522719	256	+		Hypothetical protein
HH0541	522727	522996	90	-	<i>rpsO</i>	Ribosomal protein S15
HH0542	523091	523234	48	-		Hypothetical protein
HH0543	523408	523560	51	-		Hypothetical protein
HH0544	523702	523923	74	-		Hypothetical protein
HH0545	523981	525849	623	-	<i>rpoD</i>	RNA polymerase $\sigma$ 70 factor
HH0546	525975	526919	315	-	<i>porB</i>	Pyruvate:ferredoxin oxidoreductase $\beta$ subunit
HH0547	526933	528150	406	-	<i>porA</i>	Pyruvate:ferredoxin oxidoreductase $\alpha$ subunit
HH0548	528165	528572	136	-	<i>porD</i>	Pyruvate:ferredoxin oxidoreductase delta subunit
HH0549	528595	529152	186	-	<i>porG</i>	Pyruvate:ferredoxin oxidoreductase $\gamma$ subunit
HH0550	529248	529805	186	-		Hypothetical protein
HH0551	529805	530215	137	-		Hypothetical protein
HH0552	530259	530387	43	-		Hypothetical protein
HH0553	530409	531095	229	-		Hypothetical protein
HH0554	531323	531901	193	-		Hypothetical protein, predicted secreted protein
HH0555	532010	533854	615	-		Hypothetical protein, predicted membrane-associated
HH0556	533869	533958	30	-		Hypothetical protein
HH0557	534065	535195	377	+		Hypothetical protein
HH0558	535467	536462	332	+	<i>trpS</i>	Tryptophanyl-tRNA synthetase
HH0559	536462	537739	426	+		Hypothetical protein, predicted secreted protein
HH0560	537878	539314	479	+	<i>glnA</i>	Glutamine synthase
HH0561	539343	539819	159	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0829c
HH0562	540133	540402	90	+		Hypothetical protein
HH0563	540432	541409	326	-	<i>yurV</i>	NifU-like protein

HH0564	541612	542775	388	-	<i>nifS</i>	Cysteine desulfurase
HH0565	542919	544292	458	-	<i>flil</i>	Flagellum-specific ATP synthase Flil
HH0566	544365	545690	442	+	<i>tig</i>	FKBP-type peptidyl-prolyl cis-trans isomerase (trigger factor)
HH0567	545690	546277	196	+	<i>clpP</i>	Endopeptidase ClpP
HH0568	546302	547450	383	+		Hypothetical protein
HH0569	547401	547943	181	+	<i>def</i>	N-formylmethionyl-tRNA deformylase
HH0570	548037	549473	479	+		Competence protein ComM
HH0571	549501	549779	93	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0510c
HH0572	549795	550559	255	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1050c, Sir2 family protein
HH0573	550613	552220	536	-		Hypothetical protein, predicted membrane-associated
HH0574	552229	552846	206	-		Hypothetical protein
HH0575	552961	553560	200	-		Hypothetical protein, predicted secreted protein
HH0576	553584	554846	421	-	<i>murA</i>	UDP-N-acetylglucosamine enolpyruvyl transferase MurA (MurZ)á
HH0577	554866	555270	135	-		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0592, predicted secreted protein
HH0578	555266	556015	250	-	<i>galU</i>	UTP- glucose-1-phosphate uridylyltransferase
HH0579	555999	556106	36	+		Hypothetical protein
HH0580	556109	557734	542	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative secreted transglycosylase CJ0843c
HH0581	557759	558055	99	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> integral membrane protein CJ0844c
HH0582	558084	559406	441	-	<i>gltX_2</i>	Glutamyl-tRNA synthetase
HH0583	559409	559975	189	-		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0349
HH0584	560485	560955	157	+		Hypothetical protein
HH0585	560964	562517	518	-		Conserved hypothetical protein, predicted transporter protein
HH0586	562622	564706	695	+		Cation transport ATPase, similar to <i>H. pylori</i> CadA (JHP0727)
HH0587	564794	566167	458	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1209
HH0588	566292	566993	234	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1208, possible 5-formyltetrahydrofolate cyclo-ligase
HH0589	566971	567657	229	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative signal recognition particle protein
HH0590	567657	568535	293	+	<i>ftsY</i>	Signal recognition particle-docking GTPase FtsY
HH0591	568538	569881	448	+		Predicted ATP-dependent serine protease (Sms family), RadA-like
HH0592	570138	571511	458	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> possible sugar transferase
HH0593	571788	572096	103	-	<i>atpE</i>	ATP synthase F0, subunit c (AtpE)
HH0594	572207	574333	709	-	<i>pnp</i>	Polyribonucleotide nucleotidyltransferase
HH0595	574336	574998	221	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1214
HH0596	575015	577144	710	-		Organic solvent tolerance protein, Imp/OstA-like
HH0597	577225	577695	157	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1251, predicted membrane-associated
HH0598	577695	578972	426	-	<i>purD</i>	GAR synthetase PurD
HH0599	579221	579973	251	-		Hypothetical protein
HH0600	580066	580164	33	+		Hypothetical protein
HH0601	580222	580965	248	-	<i>truA</i>	TRNA pseudouridine synthase
HH0602	580968	581984	339	-		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP1018, predicted membrane-associated
HH0603	581987	582631	215	-	<i>hopD</i>	Type IV prepilin peptidase HopD
HH0604	582650	583303	218	-	<i>pcm</i>	L-isoaspartate protein carboxymethyltransferase type II
HH0605	583306	584040	245	-		Conserved hypothetical protein, similar to Aquifex aeolicus AQ_103
HH0606	584033	585079	349	-	<i>nrdB</i>	Ribonucleoside diphosphate reductase, β subunit
HH0607	585191	585334	48	-		Hypothetical protein

HH0608	585381	587267	629	-	<i>dxs</i>	1-deoxyxylulose-5-phosphate synthase
HH0609	587296	588126	277	-	<i>fliH</i>	Flagellar assembly protein FliH
HH0610	588116	589144	343	-	<i>fliG</i>	Flagellar motor switch protein FliG
HH0611	589163	590872	570	-	<i>fliF</i>	Flagellar basal body M-ring protein FliF
HH0612	590885	591994	370	-	<i>hisC</i>	Histidinol-phosphate aminotransferase
HH0613	592187	593632	482	+	<i>glmM</i>	Phosphohexosemutase
HH0614	593645	594673	343	+	<i>pyrC_2</i>	Dihydroorotase
HH0615	594696	595808	371	-	<i>hemN_2</i>	Oxygen-independent coproporphyrinogen III oxidase
HH0616	595846	595953	36	+		Hypothetical protein
HH0617	595982	596413	144	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative NTPase CJ0581
HH0618	596478	597680	401	+	<i>lysC</i>	Aspartokinase, $\alpha$ and $\beta$ subunits
HH0619	597631	598242	204	+		Hypothetical protein
HH0620	598268	598885	206	+	<i>holB</i>	DNA polymerase III subunit delta'
HH0621	598966	600012	349	+	<i>folP</i>	Dihydropteroate synthase
HH0622	600012	600995	328	+		Hypothetical protein
HH0623	601070	602371	434	+		Conserved hypothetical protein, similar to <i>H. pylori</i> putative resistance-nodulation-division efflux system protein HefF
HH0624	602371	603453	361	+		Conserved hypothetical protein, similar to <i>H. pylori</i> putative resistance-nodulation-division efflux system protein HefE
HH0625	603456	606518	1021	+		Conserved hypothetical protein, similar to <i>H. pylori</i> putative resistance-nodulation-division efflux system protein HefD
HH0626	606525	607490	322	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0504c
HH0627	607486	608577	364	-	<i>wlaK</i>	Conserved hypothetical protein, similar to degT family amidotransferases
HH0628	608633	609133	167	-	<i>aroK</i>	Shikimate kinase
HH0629	609139	609753	205	-		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0144, predicted secreted protein
HH0630	609753	610016	88	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1671c, predicted membrane-associated
HH0631	610034	611308	425	-	<i>eno</i>	Enolase
HH0632	611338	611553	72	-		Hypothetical protein
HH0633	611575	612609	345	-	<i>recA</i>	RecA protein
HH0634	612710	613564	285	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1674
HH0635	613580	614644	355	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0567, predicted membrane-associated
HH0636	614897	616186	430	+	<i>metY</i>	O-acetylhomoserine (thiol)-lyase MetY
HH0637	616198	617076	293	+	<i>metA</i>	Homoserine O-succinyltransferase
HH0638	617111	617944	278	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0705
HH0639	617980	618753	258	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0958
HH0640	618784	620037	418	+	<i>waaA</i>	3-Deoxy-D-manno-octulosonic-acid transferase
HH0641	620040	620774	245	+		Ribosomal pseudouridine synthase
HH0642	620783	621364	194	+		Hypothetical protein
HH0643	621385	622275	297	-		Hypothetical protein, predicted secreted protein
HH0644	622356	623693	446	-	<i>kfiD</i>	UDP-glucose 6-dehydrogenase
HH0645	623732	624268	179	-		Hypothetical protein
HH0646	624467	624742	92	-	<i>fdxA</i>	Ferredoxin
HH0647	624954	625889	312	+		Nucleotide sugar dehydratase
HH0648	625889	626899	337	+		Conserved hypothetical protein, similar to <i>Dichelobacter nodosus</i> lipopolysaccharide biosynthesis protein LpsA
HH0649	626956	628728	591	-	<i>lldP</i>	L-lactate permease
HH0650	629022	629750	243	+		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0127, predicted secreted protein
HH0651	629756	631192	479	+		Conserved hypothetical protein containing a ferredoxin-like domain, similar to <i>H. pylori</i> HP0138

HH0652	631188	631841	218	+		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0125
HH0653	631855	632259	135	+	<i>modE</i>	Conserved hypothetical protein, possible molybdenum transport protein ModE
HH0654	632336	633106	257	+	<i>modA</i>	Molybdenum-binding periplasmic protein ModA
HH0655	633131	633544	138	+		Hypothetical protein
HH0656	633547	634221	225	+	<i>modB</i>	Molybdenum ABC transporter permease component ModB
HH0657	634221	635108	296	+	<i>modC</i>	Molybdenum ABC transporter ATP-binding component ModC
HH0658	635119	636438	440	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0701, predicted protease
HH0659	636441	637094	218	-		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0156
HH0660	637224	638321	366	-	<i>prfB</i>	Peptide chain release factor 2
HH0661	638450	640726	759	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0839, predicted outer membrane protein
HH0662	640901	642034	378	-	<i>ansB</i>	L-asparaginase
HH0663	642113	643987	625	-	<i>dnaK</i>	Heat shock protein DnaK
HH0664	644012	644566	185	-	<i>grpE</i>	Heat shock protein GrpE
HH0665	644591	645382	264	-	<i>hrcA</i>	Transcriptional regulator of heat shock genes HrcA
HH0666	645624	645722	33	+		Hypothetical protein
HH0667	645722	646342	207	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0112
HH0668	646362	647726	455	+		Conserved hypothetical protein, predicted peptidase
HH0669	647879	648760	294	+	<i>argC</i>	N-acetyl- $\gamma$ -glutamyl-phosphate reductase
HH0670	648773	649675	301	+		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0987
HH0671	649679	650626	316	+		Chemotaxis signal transduction protein CheV, similar to <i>H. pylori</i> HP0393 (CheV3)
HH0672	650672	653026	785	+	<i>cheA</i>	Chemotaxis protein histidine kinase CheA
HH0673	653031	653519	163	+	<i>cheW</i>	Chemotaxis signal transduction response regulator CheW
HH0674	653614	654438	275	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0282
HH0675	655154	656584	477	+		Conserved hypothetical protein, probable mannose-1-phosphate guanylyltransferase ManC
HH0676	656587	657762	392	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0421, predicted glycosyl transferase
HH0677	657892	658302	137	+	<i>ndk</i>	Nucleoside diphosphate kinase
HH0678	658306	658656	117	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> small hydrophobic protein
HH0679	658674	658820	49	+	<i>rpmF</i>	Ribosomal protein L32
HH0680	658845	659843	333	+	<i>plsX</i>	Fatty acid/phospholipid biosynthesis enzyme PlsX
HH0681	659856	660851	332	+	<i>fabH</i>	3-oxoacyl-[acyl-carrier-protein] synthase III
HH0682	660935	663175	747	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0791, probable cation transport ATPase
HH0683	663198	663407	70	+		Conserved hypothetical protein, similar to <i>H. pylori</i> copper ion binding protein HP1073
HH0684	663394	665106	571	+	<i>msbA</i>	Multidrug resistance protein MsbA
HH0685	665272	666039	256	+	<i>frdC</i>	Fumarate reductase, cytochrome B component FrdC
HH0686	666043	668016	658	+	<i>frdA</i>	Fumarate reductase, flavoprotein component FrdA
HH0687	668019	668759	247	+	<i>frdB</i>	Fumarate reductase, iron-sulfur protein FrdB
HH0688	668814	670373	520	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0190, predicted secreted protein
HH0689	670397	670783	129	-		Conserved hypothetical protein
HH0690	670770	670973	68	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1047c
HH0691	670976	672337	454	-	<i>glmU</i>	UDP-N-acetylglucosamine pyrophosphorylase
HH0692	672436	673230	265	+	<i>fliP</i>	Flagellar basal body protein FliP
HH0693	673245	674456	404	+	<i>trmA</i>	TRNA (uracil-5-)-methyltransferase TrmA
HH0694	674465	675634	390	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1241, possible permease
HH0695	675666	676373	236	-		Hypothetical protein



HH0696	676571	677362	264	+		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0604
HH0697	677368	678450	361	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0660, predicted secreted protein
HH0698	678422	678865	148	+	<i>rnhA</i>	Ribonuclease HI
HH0699	678861	679580	240	+	<i>rnc</i>	Ribonuclease III
HH0700	679580	680653	358	+	<i>aroC</i>	Chorismate synthase
HH0701	680733	682073	447	+	<i>gatA</i>	Glu-tRNA <sup>Gln</sup> amidotransferase, subunit A
HH0702	682096	683538	481	+	<i>guaB</i>	Inosinic acid dehydrogenase GuaB
HH0703	683552	683797	82	+		Hypothetical protein
HH0704	683806	684579	258	+	<i>fliR</i>	Flagellar biosynthetic protein FliR
HH0705	684587	685150	188	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0323, predicted endonuclease
HH0706	685229	687040	604	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1178c
HH0707	687043	687642	200	+	<i>gmk</i>	Guanylate kinase
HH0708	687718	687963	82	+		Component of Sec-independent protein secretion pathway TatA, similar to <i>C. jejuni</i> CJ1176c
HH0709	687966	689609	548	+	<i>argS</i>	Arginyl-tRNA synthetase
HH0710	689614	690306	231	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1331, predicted membrane-associated
HH0711	690299	690637	113	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1330, predicted membrane-associated
HH0712	690674	691168	165	-	<i>fldA</i>	Flavodoxin FldA
HH0713	691323	692126	268	-	<i>yaeC</i>	Conserved hypothetical protein, similar to <i>H. pylori</i> HP1564, predicted outer membrane protein
HH0714	692180	693010	277	-		Conserved hypothetical protein, similar to <i>H. pylori</i> putative outer membrane protein HP1564
HH0715	693037	693744	236	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1577, predicted ABC transporter permease component
HH0716	693758	694810	351	-	<i>abc</i>	Conserved hypothetical protein, similar to <i>H. pylori</i> HP1576, predicted ABC transporter ATP binding component
HH0717	694906	695679	258	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1459, possible pseudouridine synthase
HH0718	695683	696813	377	-		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0571, predicted secreted protein
HH0719	696883	698088	402	-	<i>dapD</i>	2,3,4,5-tetrahydropyridine-2-carboxylate N-succinyltransferase DapD
HH0720	698316	698786	157	-		Conserved hypothetical protein, predicted secreted protein
HH0721	699209	701392	728	+	<i>cfrA</i>	Conserved hypothetical protein, similar to <i>C. jejuni/coli</i> siderophore receptor protein CfrA
HH0722	701495	702931	479	+	<i>fumC</i>	Fumarase
HH0723	703014	704438	475	+	<i>dcuB</i>	Anaerobic C4-dicarboxylate transporter DcuB
HH0724	704468	704569	34	+		Hypothetical protein, predicted membrane-associated
HH0725	704613	706667	685	+		Conserved hypothetical protein, similar to methyl-accepting chemotaxis protein, similar to <i>C. jejuni</i> CJ1506c
HH0726	706759	707682	308	-	<i>accA</i>	Acetyl-CoA carboxylase, $\alpha$ subunit
HH0727	707698	708930	411	-	<i>fabF</i>	3-oxoacyl-[acyl-carrier-protein] synthase II FabF
HH0728	709009	709236	76	-		Acyl carrier protein
HH0729	709267	709452	62	+		Hypothetical protein
HH0730	709455	710132	226	-		Hypothetical protein
HH0731	710148	710300	51	-		Hypothetical protein
HH0732	710400	711140	247	-	<i>fabG</i>	3-oxoacyl-[acyl-carrier protein] reductase
HH0733	711194	713506	771	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0597, predicted penicillin binding protein
HH0734	713506	718950	1815	-		Hypothetical protein, predicted membrane-associated
HH0735	719037	719945	303	-	<i>sfhB</i>	Conserved hypothetical protein, similar to <i>H. pylori</i> HP0347, predicted pseudouridylate synthase, SfhB-like
HH0736	720688	722130	481	-		Hypothetical protein, predicted membrane-associated
HH0737	722273	722389	39	+		Hypothetical protein
HH0738	722420	723244	275	+		Amino-acid ABC transporter periplasmic solute-binding protein
HH0739	723288	723782	165	-	<i>msrA</i>	Peptide methionine sulfoxide reductase MrsA

HH0740	723867	725234	456	+	<i>selA</i>	L-seryl-tRNA selenium transferase
HH0741	725248	727143	632	+	<i>selB</i>	Selenocysteine-specific elongation factor SelB
HH0742	727163	728263	367	+		Hypothetical protein
HH0743	728277	729512	412	+	<i>moeA</i>	Molybdopterin biosynthesis enzyme
HH0744	729543	729956	138	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0031
HH0745	729969	731621	551	+		Hypothetical protein, predicted secreted protein
HH0746	731701	732138	146	+		Hypothetical protein, predicted secreted protein
HH0747	732229	732339	37	-		Hypothetical protein
HH0748	732419	733102	228	-		Hypothetical protein
HH0749	733425	733610	62	+		Hypothetical protein
HH0750	733628	735877	750	+		Hypothetical protein
HH0751	735939	736067	43	+		Hypothetical protein
HH0752	736252	737121	290	+		Conserved hypothetical protein, similar to <i>Campylobacter coli</i> , predicted phage transposition protein MuB
HH0753	737135	737314	60	+		Hypothetical protein
HH0754	737308	737784	159	+		Conserved hypothetical protein, similar to <i>Campylobacter coli</i> , predicted host-nuclease inhibitor protein Gam
HH0755	737818	738201	128	+		Hypothetical protein
HH0756	738204	738452	83	+		Hypothetical protein
HH0757	738627	738854	76	+		Hypothetical protein
HH0758	738850	739350	167	+		Hypothetical protein
HH0759	739469	740005	179	-		Hypothetical protein
HH0760	740019	741512	498	-		Hypothetical protein
HH0761	741730	742557	276	-		Hypothetical protein
HH0762	742721	743071	117	+		Hypothetical protein, predicted secreted protein
HH0763	743058	743264	69	+		Hypothetical protein, predicted secreted protein
HH0764	743264	743449	62	+		Hypothetical protein, predicted membrane-associated
HH0765	743449	743760	104	+		Hypothetical protein, predicted membrane-associated
HH0766	743760	743861	34	+		Hypothetical protein, predicted secreted protein
HH0767	743877	744440	188	+		Hypothetical protein
HH0768	744506	745075	190	+		Hypothetical protein
HH0769	745179	745481	101	+		Hypothetical protein
HH0770	745547	745735	63	+		Hypothetical protein
HH0771	745735	747399	555	+		Hypothetical protein, predicted membrane-associated
HH0772	747418	748287	290	+		Hypothetical protein
HH0773	748506	750068	521	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1135, predicted glycosyl transferase
HH0774	750115	751998	628	-		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP1312, predicted membrane-associated
HH0775	751998	752681	228	-		Hypothetical protein, predicted membrane-associated
HH0776	752681	753421	247	-	<i>yhcG</i>	ABC transporter, ATP binding component
HH0777	753516	753725	70	-	<i>rpsU</i>	Ribosomal protein S21
HH0778	753965	755176	404	-	<i>ftsZ</i>	Cell division protein FtsZ
HH0779	755192	756559	456	-	<i>ftsA</i>	Cell division protein FtsA
HH0780	756570	758066	499	-		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0911, predicted secreted protein
HH0781	758096	758221	42	-		Hypothetical protein, predicted membrane-associated
HH0782	758297	759436	380	-	<i>ftsW</i>	Bacterial cell division membrane protein FtsW/MrdB/SpoVE
HH0783	759497	760549	351	+		Ribosomal pseudouridine synthase

HH0784	760482	761744	41.019	+		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0683, predicted secreted protein
HH0785	761747	762934	396	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1278c
HH0786	762941	763606	222	+	<i>ftsE</i>	ABC transporter, ATP-binding component, possibly involved in cell division
HH0787	763596	764402	41.948	+	<i>ftsX</i>	Cell division protein FtsX
HH0788	764353	765621	423	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0750
HH0789	765679	766068	130	+	<i>flaG</i>	Conserved hypothetical protein, similar to FlaG protein involved in polar flagella biogenesis, similar to <i>H. pylori</i> HP0751
HH0790	766121	768166	682	+	<i>fliD</i>	Flagellar filament capping protein FliD
HH0791	768180	768560	127	+	<i>fliS</i>	Flagellin FlaA and FlaB chaperone protein FliS
HH0792	768547	768777	77	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0754
HH0793	768908	769192	95	+		Histone-like DNA-binding protein HU (HupB), similar to <i>C. jejuni</i> CJ0913c
HH0794	769224	770156	311	-	<i>gpsA</i>	Glycerol 3-phosphate dehydrogenase
HH0795	770203	770880	226	-		Hypothetical protein, predicted secreted protein
HH0796	771081	772502	474	+	<i>gatB</i>	Glu-tRNA <sup>Gln</sup> amidotransferase, subunit B
HH0797	772873	775929	1019	+		Conserved hypothetical protein, possible SNF2 family helicase
HH0798	775929	779096	1056	+		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP1409, predicted type II DNA modification enzyme (methyltransferase)
HH0799	779190	780506	439	+		Hypothetical protein
HH0800	780641	781687	349	+		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0346
HH0801	782105	782245	47	+		Hypothetical protein
HH0802	782301	782447	49	+		Conserved hypothetical protein
HH0803	782538	782630	31	-		Hypothetical protein
HH0804	782667	783227	187	-		Hypothetical protein, predicted secreted protein
HH0805	783235	784812	526	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0256, predicted membrane-associated
HH0806	784817	786052	412	-	<i>proA</i>	$\gamma$ -glutamyl phosphate reductase
HH0807	786055	787116	354	-	<i>gcpE</i>	GcpE protein homolog
HH0808	787130	787552	141	+	<i>hypA</i>	Hydrogenase expression/formation protein HypA
HH0809	787568	788020	151	+		Hypothetical protein
HH0810	788039	789202	388	+	<i>lpxB</i>	Lipid A disaccharide synthetase
HH0811	789458	790852	465	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0497, putative sodium-dependent transporter
HH0812	790964	791629	222	-		Conserved hypothetical protein, similar to <i>H. pylori</i> Hop-family proteins
HH0813	792001	792906	302	-		Hypothetical protein
HH0814	792921	793781	287	-		Hypothetical protein
HH0815	793721	794452	244	-		Hypothetical protein, predicted membrane-associated
HH0816	794556	795320	255	-		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP1437, predicted secreted protein
HH0817	795324	796307	328	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0727, predicted transcriptional regulator
HH0818	796311	797543	411	-	<i>nspC</i>	Carboxynorspermidine decarboxylase NspC
HH0819	797533	798495	321	-		Chemotaxis signal transduction protein CheV, similar to <i>H. pylori</i> HP0019 (CheV1)
HH0820	798556	799275	240	-	<i>pssA</i>	Phosphatidylserine synthase PssA
HH0821	799268	799897	210	-		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0354, predicted membrane-associated
HH0822	799910	801742	611	-	<i>ftsH_2</i>	Membrane bound zinc metallopeptidase, cell division protein FtsH
HH0823	801742	801858	39	-		Hypothetical protein
HH0824	801834	802784	317	-	<i>prmA</i>	Ribosomal protein L11 methyltransferase
HH0825	802809	803183	125	-	<i>cheY</i>	Chemotaxis regulatory protein CheY
HH0826	803274	804002	243	-	<i>hisA</i>	Phosphoribosylformimino-5-aminoimidazole carboxamide ribonucleotide (ProFAR) isomerase

HH0827	804008	804859	284	-		Hypothetical protein, predicted membrane-associated
HH0828	804878	806041	388	-	<i>amiA</i>	N-acetylmuramoyl-L-alanine amidase
HH0829	806053	807135	361	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0773
HH0830	807149	808348	400	-	<i>tyrS</i>	Tyrosyl-tRNA synthetase
HH0831	808364	810511	716	-	<i>spoT</i>	Conserved hypothetical protein, similar to guanosine-3',5'-bis(diphosphate) 3'-pyrophosphohydrolase
HH0832	810524	810745	74	-	<i>rpoZ</i>	Conserved hypothetical protein, similar to <i>H. pylori</i> HP0776, possibly DNA-directed RNA polymerase, omega subunit
HH0833	810826	811533	236	-	<i>pyrH</i>	Uridylate kinase
HH0834	811676	812179	168	-		Hypothetical protein, predicted secreted protein
HH0835	812265	812651	129	-		Hypothetical protein, predicted secreted protein
HH0836	812683	814107	475	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1249
HH0837	814153	814902	250	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1504
HH0838	814893	815936	348	-	<i>ribD</i>	Riboflavin biosynthesis protein RibD
HH0839	815923	816393	157	-		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0379
HH0840	816407	816754	116	-	<i>rbfA</i>	Ribosome-binding factor A
HH0841	816747	817889	381	-	<i>tgt</i>	Queuine tRNA-ribosyltransferase
HH0842	817906	818757	284	-	<i>proC</i>	Pyrroline-5-carboxylate reductase
HH0843	818760	819263	168	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1377
HH0844	819333	819971	213	+	<i>comL</i>	Conserved hypothetical protein, similar to <i>H. pylori</i> HP1378, predicted ComL-like lipoprotein
HH0845	819983	822388	802	+	<i>lon</i>	ATP-dependent protease LA
HH0846	822438	823631	398	-		Hypothetical protein
HH0847	823782	825152	457	-		Hypothetical protein
HH0848	825289	825402	38	-		Hypothetical protein, predicted secreted protein
HH0849	825490	826389	300	+	<i>cysK</i>	Cysteine synthase
HH0850	826493	828208	572	-		Dihydroxy-acid dehydratase
HH0851	828292	829194	301	-	<i>metF</i>	Conserved hypothetical protein, possible 5,10-methylenetetrahydrofolate reductase
HH0852	829233	831506	758	-	<i>metE</i>	5-methyltetrahydropteroyltriglutamate-homocysteine methyltransferase
HH0853	831727	832581	285	-	<i>pldA</i>	Phospholipase A
HH0854	832635	834485	60	+	<i>glmS</i>	Glucosamine-fructose-6-phosphate aminotransferase
HH0855	834478	834894	139	-		Hypothetical protein, predicted membrane-associated
HH0856	834937	835836	300	-		Membrane protease subunits, similar to phage lambda cII repressor protease
HH0857	836061	837419	453	+		Hypothetical protein
HH0858	837433	837558	42	+		Hypothetical protein
HH0859	837576	840251	892	-	<i>alaS</i>	Alanyl-tRNA synthetase
HH0860	840306	840731	142	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1580, predicted membrane-associated
HH0861	840971	841894	308	-	<i>pdxA</i>	Pyridoxal phosphate biosynthetic protein A
HH0862	841885	842685	267	-	<i>pdxJ</i>	Pyridoxal phosphate biosynthetic protein J
HH0863	842699	843178	160	-	<i>ilvH</i>	Acetolactate synthase, small subunit
HH0864	843183	844892	570	-	<i>ilvI</i>	Acetolactate synthase, large subunit
HH0865	845046	846212	389	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> predicted transport transmembrane protein CJ1040c
HH0866	846277	846669	131	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ202c, predicted secreted protein
HH0867	846644	846811	56	+		Hypothetical protein, predicted membrane-associated
HH0868	846898	847101	68	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative integral membrane protein CJ0201c
HH0869	847277	848674	466	-	<i>glcD</i>	Glycolate oxidase, subunit D
HH0870	848680	849423	248	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1214c, predicted secreted protein

HH0871	849437	850096	220	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0507
HH0872	850089	851285	399	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0506, predicted secreted protein
HH0873	851450	851635	62	+		Hypothetical protein, predicted membrane-associated
HH0874	851729	851938	70	+	<i>flgM</i>	Flagellar anti FliA ( $\sigma$ 28) factor FlgM
HH0875	852006	852428	141	+		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP1048
HH0876	852440	854257	606	+	<i>flgK</i>	Flagellar hook-associated protein FlgK
HH0877	854244	854969	242	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0174, predicted membrane-associated
HH0878	855057	855431	125	-		Hypothetical protein
HH0879	855415	857100	562	-	<i>ftsH_1</i>	ATP-dependent zinc metalloproteinase, cell division protein FtsH
HH0880	857090	858358	423	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0285
HH0881	858373	859992	540	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0284, predicted membrane-associated
HH0882	859992	861050	353	-	<i>aroB</i>	3-dehydroquinate synthase
HH0883	861062	862492	477	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0282
HH0884	862560	863240	227	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0778
HH0885	863252	863506	85	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0495
HH0886	863513	863926	138	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0496
HH0887	864254	865504	417	+		Conserved hypothetical protein, similar to <i>H. pylori</i> sodium- and chloride-dependent transporter
HH0888	865515	866648	378	-	<i>carA</i>	Carbamoylphosphate synthase small subunit
HH0889	866648	867196	183	-		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP1157
HH0890	867269	869275	669	-	<i>pbpA</i>	Penicillin-binding protein
HH0891	869286	870689	468	-		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0546, predicted methyl-accepting chemotaxis protein (MCP)
HH0892	870764	870859	32	-		Hypothetical protein
HH0893	870931	871389	153	+	<i>fur</i>	Ferric uptake regulation protein
HH0894	871573	872250	226	-		Hypothetical protein
HH0895	872256	873557	434	-		Conserved hypothetical protein, similar to <i>H. pylori</i> conserved hypothetical integral membrane protein
HH0896	873570	874793	408	-	<i>cysK</i>	Threonine dehydratase
HH0897	874796	875782	329	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1234, predicted membrane-associated
HH0898	875782	875874	31	-		Hypothetical protein
HH0899	875956	876687	244	+	<i>flgH</i>	Flagellar basal body L-ring protein FlgH
HH0900	876702	877406	235	+	<i>neuA</i>	Acylneuraminate cytidyltransferase
HH0901	877415	877660	82	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0761
HH0902	877651	877845	65	-		Hypothetical protein
HH0903	877866	879089	408	-		Hypothetical protein, predicted secreted protein
HH0904	879112	879285	58	-		Hypothetical protein
HH0905	879336	879662	109	-		Hypothetical protein
HH0906	879791	880045	85	+		Hypothetical protein
HH0907	880147	881691	515	+		Conserved hypothetical protein, putative flagellar modification protein
HH0908	881691	882737	349	+		Sialic acid synthase
HH0909	882806	883918	371	+		Conserved hypothetical protein, possible aminotransferase
HH0910	883938	884843	302	+	<i>miaA</i>	TRNA delta(2)-isopentenylpyrophosphate transferase
HH0911	884850	885248	133	-		Hypothetical protein
HH0912	885262	885951	230	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0920, predicted membrane-associated
HH0913	886072	887445	458	-		Conserved hypothetical protein, possible ferredoxin-like protein, predicted membrane-associated
HH0914	887587	889194	536	+		ABC transport system, ATP-binding protein

HH0915	889352	889552	67	-		Hypothetical protein
HH0916	889542	889829	96	-		Hypothetical protein, predicted secreted protein
HH0917	889913	890683	257	-		Hypothetical protein
HH0918	890890	891297	136	+		Hypothetical protein
HH0919	891881	892390	170	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0952, CinA/YgaD-like
HH0920	892487	893563	359	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0604
HH0921	893662	894402	247	+		Carbonic anhydrase
HH0922	894455	894781	109	+		Hypothetical protein
HH0923	894824	895495	224	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1509, predicted membrane-associated
HH0924	895498	895830	111	+		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP1403, predicted dihydroneopterin aldolase
HH0925	895841	896812	324	-		Hypothetical protein
HH0926	896891	898282	464	-	<i>gltX</i>	Glutamyl-tRNA synthetases
HH0927	898426	899475	350	+	<i>murG</i>	UDP-N-acetylglucosamine-N-acetylmuramyl-(pentapeptide) pyrophosphoryl-undecaprenol N-acetylglucosamine transferase
HH0928	899641	900396	252	+	<i>lexA</i>	Exodeoxyribonuclease LexA
HH0929	900423	901049	209	+		Conserved hypothetical protein, possible uracil-DNA glycosylase
HH0930	902671	903972	434	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0275, predicted secreted protein
HH0931	903975	906002	676	-	<i>rep</i>	ATP-dependent DNA helicase
HH0932	906016	906432	139	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1154
HH0933	906508	909204	899	+	<i>valS</i>	Valyl-tRNA synthetase
HH0934	909813	910946	378	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0760
HH0935	910961	911314	118	-	<i>rplS</i>	Ribosomal protein L19
HH0936	911314	912036	241	-	<i>trmD</i>	TRNA-(guanine-N1)-methyltransferase
HH0937	912036	912494	153	-		Conserved hypothetical protein
HH0938	912584	912820	79	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0711
HH0939	912839	913069	77	-	<i>rpsP</i>	Ribosomal protein S16
HH0940	913147	914487	447	-	<i>ffh</i>	Signal recognition particle protein
HH0941	914523	914630	36	+		Hypothetical protein, predicted membrane-associated
HH0942	914630	915037	136	+		Transcriptional regulator, FurR family
HH0943	915048	917090	681	-		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0417
HH0944	917099	918154	352	-		Conserved hypothetical protein, possible peptidase
HH0945	918158	918631	158	-		3-dehydroquinate dehydratase II
HH0946	918754	920421	556	-		Hypothetical protein
HH0947	920430	921578	383	-		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0703, predicted membrane-associated
HH0948	921640	921912	91	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0764
HH0949	922013	922255	81	+		Hypothetical protein
HH0950	922408	924891	828	-	<i>bisC</i>	Biotin sulfoxide reductase BisC
HH0951	924894	925484	197	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0265c, predicted cytochrome c-type protein
HH0952	925595	926404	270	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0257, predicted secreted protein
HH0953	926404	926829	142	-		Conserved hypothetical protein, similar to <i>Caulobacter crescentus</i> FliJ, similar to <i>H. pylori</i> HP0256
HH0954	926839	928083	415	-	<i>purA</i>	Adenylosuccinate synthetase PurA
HH0955	928116	928955	280	-		Hypothetical protein
HH0956	929079	930113	345	+	<i>trmU</i>	TRNA (5-methylaminomethyl-2-thiouridylate)-methyltransferase, putative
HH0957	930235	930621	129	+		Conserved hypothetical protein, similar to <i>H. pylori</i> replication protein A

HH0958	930636	930779	48	-		Hypothetical protein
HH0959	930886	931281	132	+		Hypothetical protein
HH0960	931337	931990	218	+		Hypothetical protein, predicted membrane-associated
HH0961	932075	932239	55	+		Hypothetical protein, predicted secreted protein
HH0962	933064	933525	154	-		Hypothetical protein, predicted membrane-associated
HH0963	933512	933943	144	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative integral membrane protein, predicted membrane-associated
HH0964	933949	935253	435	-	<i>hemL</i>	Glutamate-1-semialdehyde 2,1-aminomutase
HH0965	935277	935366	30	+		Hypothetical protein, predicted secreted protein
HH0966	935462	936019	186	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative periplasmic protein
HH0967	936181	937899	573	+		Hypothetical protein
HH0968	938008	938538	177	-		Conserved hypothetical protein
HH0969	938727	939923	399	+	<i>argD</i>	Acetylornithine aminotransferase
HH0970	939907	941001	365	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0812
HH0971	941085	943073	663	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative methyl-accepting chemotaxis signal transduction protein
HH0972	943107	944147	347	-		Hypothetical protein
HH0973	944232	945089	286	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ20248
HH0974	945233	946540	436	-		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0611, predicted glycerol-3-phosphate dehydrogenase GlpC
HH0975	946553	947938	462	-	<i>hemN_1</i>	Oxygen-independent coproporphyrinogen III oxidase
HH0976	947956	948384	143	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0664
HH0977	948391	949377	329	-	<i>argF</i>	Ornithine carbamoyltransferase
HH0978	949456	950025	190	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0838, predicted secreted protein
HH0979	950052	950747	232	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative lipoprotein
HH0980	951095	951847	251	-		Conserved hypothetical protein, predicted glycosyl transferase
HH0981	951840	952838	333	-		Conserved hypothetical protein, glucosyl transferase
HH0982	958826	959767	314	-		Lauroyl/myristoyl acyltransferase involved in lipid A biosynthesis
HH0983	959770	960861	364	-		Lipopolysaccharide heptosyltransferase
HH0984	960888	962357	490	-	<i>ppx</i>	Exopolyphosphatase
HH0985	962360	962608	83	-	<i>fdxB</i>	Ferredoxin
HH0986	962683	963330	216	-		Hypothetical protein
HH0987	963351	963455	35	-		Hypothetical protein, predicted membrane-associated
HH0988	963968	964069	34	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative periplasmic protein
HH0989	964113	965048	312	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ504c
HH0990	965011	966270	420	-		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0602, predicted protease
HH0991	966324	967421	366	-		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0601
HH0992	967448	969682	745	-		Conserved hypothetical outer membrane protein
HH0993	969754	970599	282	-	<i>tyrA</i>	Prephenate dehydrogenase
HH0994	970630	971337	236	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0374
HH0995	971341	971766	142	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0375, predicted membrane-associated
HH0996	971883	972815	311	+	<i>hemH</i>	Ferrochelatase
HH0997	972844	973461	206	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0377, predicted membrane-associated
HH0998	973476	976283	936	+		Cytochrome c biogenesis protein, putative
HH0999	976341	978383	681	+		Hypothetical protein, predicted secreted protein
HH1000	978927	979496	190	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1162, predicted membrane-associated

HH1001	979532	980221	230	-	<i>ybbA</i>	ABC transporter, ATP-binding component
HH1002	980385	980915	177	+		Conserved hypothetical protein, similar to <i>H. pylori</i> secreted protein
HH1003	980435	980923	163	-		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP1206, predicted secreted protein
HH1004	981083	981193	37	-		Hypothetical protein
HH1005	981363	982226	288	-		Conserved hypothetical protein, similar to two-component response regulator proteins
HH1006	982468	983694	409	-		Ubiquinol cytochrome c oxidoreductase, cytochrome b subunit
HH1007	983707	984213	169	-		Ubiquinol cytochrome C oxidoreductase, 2Fe-2S subunit
HH1008	984364	985185	274	+	<i>nadE</i>	NH(3)-dependent NAD(+) synthetase NadE
HH1009	985198	986097	300	+	<i>lpxK</i>	Lipid A biosynthesis protein LpxK, tetraacyldisaccharide-1-P 4'-kinase
HH1010	986130	986585	152	+	<i>bcp</i>	Bacterioferritin comigratory protein Bcp
HH1011	986626	989271	882	-	<i>infB</i>	Translation initiation factor 2 (GTPase)
HH1012	989262	989510	83	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1049
HH1013	989533	990429	299	-	<i>thrB</i>	Homoserine kinase
HH1014	990549	991031	161	-		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0374
HH1015	991068	991964	299	-	<i>lpxC</i>	UDP-3-O-acyl-N-acetylglucosamine deacetylase
HH1016	991964	992557	198	-		Conserved hypothetical protein, possible bacterial septum site-determining protein MinC
HH1017	992574	993956	461	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0131, predicted secreted protein
HH1018	994017	995141	375	-	<i>flhB_1</i>	Flagellar basal body protein FlhB
HH1019	995148	995714	189	-	<i>mobA</i>	Molybdopterin-guanine dinucleotide biosynthesis protein
HH1020	995808	996803	332	+	<i>moaA</i>	Molybdenum cofactor biosynthesis protein A
HH1021	996902	997984	361	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1368
HH1022	998096	1000480	795	+		Cation-transporting ATPase, P-type, CopA-like
HH1023	1000593	1001705	371	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0069
HH1024	1001788	1001988	67	-		Hypothetical protein
HH1025	1002152	1004659	836	+		Conserved hypothetical protein, similar to <i>E. coli</i> Z1202, predicted helicase
HH1026	1004718	1005527	270	-		Conserved hypothetical protein, similar to <i>Thermotoga maritima</i> oxidoreductase/aldo/keto reductase family protein
HH1027	1005984	1006649	222	+		Conserved hypothetical protein, similar to <i>E. coli</i> YfcA, predicted membrane-associated
HH1028	1007202	1007375	58	+		Hypothetical protein, predicted secreted protein
HH1029	1007352	1009586	745	-		Hypothetical protein
HH1030	1009586	1011262	559	-		Hypothetical protein, predicted secreted protein
HH1031	1011453	1011923	157	-		Conserved hypothetical protein, similar to <i>Y. pestis</i> putative exported protein YP02003
HH1032	1011901	1012296	132	-		Hypothetical protein
HH1033	1012406	1013440	345	-		Conserved hypothetical protein, similar to <i>E. coli</i> Z0347, predicted secreted protein
HH1034	1013460	1014530	357	-		Conserved hypothetical protein, predicted oxidoreductase
HH1035	1014704	1015279	192	+		Hypothetical protein
HH1036	1015368	1015829	154	+		Hypothetical protein, predicted secreted protein
HH1037	1015879	1016388	170	+	<i>ogt</i>	Methylated DNA-protein cysteine methyltransferase
HH1038	1016511	1017743	411	+		Type II R/M system, modification methylase
HH1039	1017751	1019646	632	+		Hypothetical protein
HH1040	1019651	1021042	464	+		Hypothetical protein
HH1041	1021081	1021440	120	+		Conserved hypothetical protein
HH1042	1021479	1022060	194	-		Conserved hypothetical protein, predicted transcriptional regulator
HH1043	1022060	1022470	137	-		Conserved hypothetical protein
HH1044	1022474	1023229	252	-		Conserved hypothetical protein



HH1045	1023447	1024709	421	+		Hypothetical protein, predicted secreted protein
HH1046	1024751	1025413	221	+		Conserved hypothetical protein, predicted acetyltransferase
HH1047	1025545	1025676	44	+		Hypothetical protein
HH1048	1025766	1026626	287	-	<i>rocF</i>	Arginase
HH1049	1026748	1027857	370	+		Hypothetical protein, predicted secreted protein
HH1050	1027879	1028889	337	-		Conserved hypothetical protein, similar to <i>H. pylori</i> ulcer associated adenine specific DNA methyltransferase IceA
HH1051	1028896	1029567	224	-		Conserved hypothetical protein, similar to Neisseria lactamica type II restriction endonuclease
HH1052	1029637	1029756	40	+		Hypothetical protein
HH1053	1029759	1029863	35	-		Hypothetical protein
HH1054	1029866	1030381	172	+		Conserved hypothetical protein, similar to Listeria monocytogenes LMO2438
HH1055	1030384	1030503	40	-		Hypothetical protein
HH1056	1030511	1030915	135	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1556
HH1057	1031045	1031662	206	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1555c
HH1058	1031695	1031817	41	+		Hypothetical protein, predicted membrane-associated
HH1059	1031810	1032199	130	+		Conserved hypothetical protein, predicted membrane-associated
HH1060	1032321	1032875	185	+		Conserved hypothetical protein, similar to Listeria monocytogenes LMO2083
HH1061	1032985	1034745	587	+		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0572
HH1062	1034767	1035174	136	+		Conserved hypothetical protein
HH1063	1035272	1036150	293	+		Conserved hypothetical protein, similar to Bacillus subtilis aminoglycoside 6-adenyltransferase AAD(6)
HH1064	1036272	1037435	388	+		Conserved hypothetical protein, predicted membrane-associated
HH1065	1037674	1038363	230	+		Hypothetical protein, predicted membrane-associated
HH1066	1038474	1039169	232	-		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0907, predicted secreted protein
HH1067	1039241	1041349	703	+	<i>glyS</i>	Glycyl-tRNA synthetase, $\beta$ subunit
HH1068	1041349	1042467	373	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1486
HH1069	1042614	1042835	74	+		Hypothetical protein
HH1070	1042850	1043611	254	-		Hypothetical protein, predicted membrane-associated
HH1071	1043641	1044705	355	-	<i>tfs</i>	Translation elongation factor Ts
HH1072	1044710	1045501	264	-	<i>rpsB</i>	Ribosomal protein S2
HH1073	1045584	1045676	31	+		Hypothetical protein
HH1074	1045707	1047014	436	-	<i>rpoN</i>	RNA polymerase $\sigma$ 54 factor
HH1075	1047014	1047733	240	-	<i>yhbG</i>	ABC-transporter ATP-binding protein
HH1076	1047733	1048164	144	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0716
HH1077	1048160	1049752	531	-	<i>dnaX</i>	DNA polymerase III $\gamma$ and tau subunits DnaX
HH1078	1049733	1049840	36	+		Hypothetical protein
HH1079	1049901	1050530	210	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0593c, predicted membrane-associated
HH1080	1050591	1050704	38	+		Hypothetical protein
HH1081	1050682	1051467	262	+	<i>flgG_2</i>	Flagellar distal rod protein FlgG, similar to HP1585 (FlgG2)
HH1082	1051486	1052742	419	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0609c
HH1083	1052736	1054055	440	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative periplasmic protein CJ0610c
HH1084	1054101	1055510	470	-		Conserved hypothetical protein, predicted membrane-associated
HH1085	1055675	1056340	222	-		Hypothetical protein, predicted membrane-associated
HH1086	1056457	1057668	404	-		Conserved hypothetical protein, similar to Xylella fastidiosa XF1738, predicted membrane-associated
HH1087	1057763	1058146	128	-		Conserved hypothetical protein, possible transcriptional regulator
HH1088	1058235	1060208	658	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative methyl-accepting chemotaxis

						signal transduction protein CJ1564
HH1089	1060339	1060443	35	+		Hypothetical protein
HH1090	1060468	1061298	277	+	<i>flgG_1</i>	Flagellar distal rod protein FlgG, similar to HP1092 (FlgG1/FlgF)
HH1091	1061331	1063019	563	+		Type I restriction enzyme, modification subunit
HH1092	1063023	1063535	171	+		Conserved hypothetical protein
HH1093	1063535	1064245	237	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1221
HH1094	1064330	1065541	404	+		Malate oxidoreductase
HH1095	1065856	1065990	45	-		Hypothetical protein
HH1096	1066087	1066548	154	-		Hypothetical protein
HH1097	1066720	1067298	193	-		Hypothetical protein, predicted secreted protein
HH1098	1067295	1068890	532	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1507
HH1099	1069035	1070012	326	+	<i>lpxD</i>	UDP-3-O-[3-hydroxymyristoyl] glucosamine N-acyltransferase
HH1100	1070053	1071429	459	+	<i>sdaC</i>	Serine transporter
HH1101	1071441	1071545	35	-		Hypothetical protein, predicted membrane-associated
HH1102	1071565	1072686	374	-	<i>cydB</i>	Cytochrome bd quinol oxidase, subunit II
HH1103	1072689	1074260	524	-	<i>cydA</i>	Cytochrome bd quinol oxidase, subunit I
HH1104	1074290	1074538	83	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0080
HH1105	1074682	1077009	776	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0411, predicted ATP/GTP binding protein
HH1106	1077025	1078866	614	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0412, predicted ATP/GTP binding protein
HH1107	1078876	1079046	57	+		Hypothetical protein, predicted secreted protein
HH1108	1079084	1079260	59	+		Hypothetical protein
HH1109	1079410	1080597	396	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative efflux protein CJ1687
HH1110	1080622	1081989	456	-	<i>dnaA</i>	Chromosomal replication initiator protein DnaA
HH1111	1082089	1082643	185	+	<i>ruvC</i>	Holliday junction resolvase RuvC
HH1112	1082643	1084043	467	+		Hypothetical protein, predicted membrane-associated
HH1113	1084036	1084671	212	+		Hypothetical protein, predicted membrane-associated
HH1114	1084671	1085054	128	+		Hypothetical protein, predicted secreted protein
HH1115	1085054	1086652	533	+		Conserved hypothetical protein, similar to <i>N. meningitidis</i> pilin PilQ
HH1116	1086655	1088220	522	+	<i>gspE</i>	Conserved hypothetical protein, similar to <i>N. meningitidis</i> pilin PilT
HH1117	1088211	1089452	414	+		Conserved hypothetical protein, similar to <i>N. meningitidis</i> pilin PilG
HH1118	1089445	1090548	368	-		Conserved hypothetical protein
HH1119	1090590	1090730	47	+		Hypothetical protein
HH1120	1090780	1091280	167	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1533
HH1121	1091292	1091885	198	-		Hypothetical protein
HH1122	1091885	1092658	258	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1464, predicted membrane-associated
HH1123	1092646	1093449	268	-		ABC transporter, ATP-binding component
HH1124	1093449	1094492	348	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1466, predicted ABC transporter, permease component
HH1125	1094687	1094788	34	+		Hypothetical protein, predicted membrane-associated
HH1126	1094815	1095873	353	+	<i>dnaN</i>	DNA polymerase III, $\beta$ subunit
HH1127	1095901	1098216	772	+	<i>gyrB</i>	DNA gyrase (topoisomerase II), subunit B
HH1128	1098235	1099386	384	-		Hypothetical protein, predicted secreted protein
HH1129	1099399	1100643	415	-		Alginate O- acetylation protein, may become fused with HH1130 due to slipped strand mispairing
HH1130	1100837	1101136	100	-		Alginate O- acetylation protein, may become fused with HH1129 due to slipped strand mispairing
HH1131	1101123	1101302	60	-		Hypothetical protein, predicted membrane-associated

HH1132	1101308	1101466	53	-		Hypothetical protein
HH1133	1101587	1101727	47	-		Hypothetical protein, predicted secreted protein
HH1134	1101730	1102677	316	-	<i>leuB</i>	Isopropylmalate dehydrogenase
HH1135	1102820	1103314	165	-	<i>leuD</i>	3-isopropylmalate dehydratase, small subunit
HH1136	1103373	1104632	420	-	<i>leuC</i>	3-isopropylmalate dehydratase, large subunit
HH1137	1104651	1106324	558	-	<i>leuA</i>	Isopropylmalate synthase
HH1138	1106496	1106693	66	-		Hypothetical protein
HH1139	1106723	1106824	34	+		Hypothetical protein
HH1140	1106917	1107762	282	+	<i>tal</i>	Transaldolase
HH1141	1107779	1108522	248	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0231, possible protein disulfide isomerase
HH1142	1108600	1109124	175	+	<i>folK</i>	7,8-dihydro-6-hydroxymethylpterin-pyrophosphokinase
HH1143	1109219	1110667	483	+	<i>flhF</i>	Flagellar GTP-binding protein FlhF
HH1144	1110683	1111552	290	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1034, predicted ATP-binding protein
HH1145	1111580	1111933	118	+		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0391, predicted membrane-associated
HH1146	1112083	1112652	190	+	<i>fliA</i>	RNA polymerase $\sigma$ 28 factor
HH1147	1112648	1113706	353	+	<i>fliM</i>	Flagellar motor switch protein FliM
HH1148	1113706	1114539	278	+	<i>fliY</i>	Flagellar protein FliY
HH1149	1114622	1114822	67	-		Hypothetical protein, predicted membrane-associated
HH1150	1114921	1115541	207	+		Hypothetical protein
HH1151	1115558	1116889	444	+		Hypothetical protein
HH1152	1116993	1117565	191	+		Hypothetical protein, predicted membrane-associated
HH1153	1117568	1118536	323	-	<i>trxB_2</i>	Conserved hypothetical protein, similar to <i>H. pylori</i> HP1164, predicted thioredoxin reductase
HH1154	1118532	1118753	74	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1163, predicted secreted protein
HH1155	1118909	1120576	556	+		Conserved hypothetical protein, similar to methyl-accepting chemotaxis proteins
HH1156	1120607	1122490	628	-	<i>recG</i>	ATP-dependent DNA recombinase RecG
HH1157	1122502	1123515	338	-	<i>gap_1</i>	Glyceraldehyde-3-phosphate dehydrogenase
HH1158	1123611	1124372	254	+		Hypothetical protein, predicted secreted protein
HH1159	1124386	1126425	680	-		Conserved hypothetical protein, similar to <i>P. aeruginosa</i> PA1689, predicted membrane-associated
HH1160	1126573	1126884	104	-	<i>trxA</i>	Thioredoxin
HH1161	1126896	1127930	345	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative integral membrane protein
HH1162	1128278	1128880	201	-		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP1206, predicted secreted protein
HH1163	1128894	1129388	165	-		Conserved hypothetical protein, predicted transcriptional regulator
HH1164	1129446	1129652	69	+		Hypothetical protein
HH1165	1129745	1132213	823	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0022, predicted membrane-associated
HH1166	1132409	1133497	363	+	<i>cad</i>	Putative NADP-dependent alcohol dehydrogenase
HH1167	1133520	1134779	420	-	<i>murD</i>	UDP-N-acetylmuramoylalanine-D-glutamate ligase
HH1168	1134792	1135868	359	-	<i>mraY</i>	Phospho-N-acetylmuramoyl-pentapeptide transferase
HH1169	1135976	1137445	490	+	<i>pgm</i>	Phosphoglyceromutase
HH1170	1137491	1138063	191	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative integral membrane protein CJ1356c
HH1171	1138207	1138443	79	-		Conserved hypothetical protein
HH1172	1138479	1139444	322	-		Conserved hypothetical protein, similar to <i>H. pylori</i> putative capsule biosynthesis protein KpsF (HP1429)
HH1173	1139460	1141604	715	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1430
HH1174	1141561	1142409	283	-	<i>ksgA</i>	Dimethyladenosine transferase (rRNA methylation)
HH1175	1142449	1142544	32	+		Hypothetical protein

HH1176	1142585	1143337	251	+	<i>hisF</i>	Cyclase HisF
HH1177	1143435	1144046	204	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1530
HH1178	1144064	1145170	369	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1428
HH1179	1145202	1145294	31	+		Hypothetical protein, predicted membrane-associated
HH1180	1145332	1146435	368	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0100
HH1181	1146482	1146988	169	+	<i>fabZ</i>	3-hydroxymyristoyl-(acyl carrier protein) dehydratase
HH1182	1147001	1147780	260	+	<i>lpxA</i>	UDP-N-acetylglucosamine acyltransferase
HH1183	1147776	1149053	426	+	<i>clpX</i>	ATP-dependent Clp protease, ATP-binding subunit ClpX
HH1184	1149139	1150170	344	+	<i>mreB</i>	Rod shape-determining protein MreB
HH1185	1150182	1151066	295	+	<i>mreC</i>	Rod shape-determining protein MreC
HH1186	1150987	1153287	767	+		Hypothetical protein
HH1187	1153450	1154889	480	+		Hypothetical protein, predicted secreted protein
HH1188	1154913	1156157	415	+		Hypothetical protein
HH1189	1156160	1157095	312	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0021c, predicted isomerase
HH1190	1157210	1159999	930	+	<i>ileS</i>	Isoleucyl-tRNA synthetase
HH1191	1160044	1160187	48	+		Hypothetical protein, predicted membrane-associated
HH1192	1160209	1160730	174	-		Hypothetical protein, predicted secreted protein
HH1193	1160896	1161225	110	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative coiled-coil protein
HH1194	1161212	1161520	103	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1391, predicted membrane-associated
HH1195	1161593	1162438	282	+		Hypothetical protein, predicted secreted protein
HH1196	1162686	1164887	734	-		Isocitrate dehydrogenase
HH1197	1165037	1165243	69	-		Hypothetical protein
HH1198	1165392	1166435	348	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1633
HH1199	1166416	1167972	519	-	<i>dnaG</i>	DNA primase
HH1200	1168356	1168625	90	+	<i>hspA</i>	Chaperone protein HspA (GroES/HSP10 family)
HH1201	1168662	1170296	545	+	<i>hspB</i>	Chaperone protein HspB (GroEL/HSP60 family)
HH1202	1170406	1171128	241	-		Hypothetical protein
HH1203	1171134	1173830	899	-	<i>ppc</i>	Phosphoenolpyruvate carboxylase
HH1204	1173945	1174967	341	+	<i>ilvC</i>	Ketol-acid reductoisomerase
HH1205	1175065	1176462	466	+	<i>ktrB</i>	Conserved hypothetical protein, predicted Na <sup>+</sup> or K <sup>+</sup> uptake protein
HH1206	1176490	1177146	219	+	<i>ktrA</i>	Conserved hypothetical protein, predicted potassium uptake protein
HH1207	1177142	1177900	253	-	<i>bioC</i>	Conserved hypothetical protein, predicted biotin biosynthesis protein BioC
HH1208	1177882	1178574	231	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0305c, predicted membrane-associated
HH1209	1178574	1179767	398	-	<i>bioF</i>	8-amino-7-oxononanoate synthase
HH1210	1179847	1181157	437	+	<i>bioA</i>	Adenosylmethionine-8-amino-7-oxononanoate aminotranferase
HH1211	1181165	1181791	209	-	<i>bioD</i>	Dethiobiotin synthetase
HH1212	1181832	1182758	309	-		Conserved hypothetical protein, similar to <i>P. aeruginosa</i> PA3954
HH1213	1182758	1182898	47	-		Hypothetical protein
HH1214	1182876	1183880	335	-		Conserved hypothetical protein, similar to Bacillus halodurans BH0835
HH1215	1183873	1185315	481	-		Conserved hypothetical protein, similar to <i>P. aeruginosa</i> PA2326
HH1216	1185659	1185919	87	-		Hypothetical protein, predicted secreted protein
HH1217	1186029	1186235	69	+		Hypothetical protein, predicted secreted protein
HH1218	1186430	1186753	108	-	<i>cutA</i>	Divalent cation tolerance protein CutA
HH1219	1186887	1187858	324	+		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0437, predicted catalase-like protein

HH1220	1187868	1188959	364	-		Conserved hypothetical protein, similar to <i>V. cholerae</i> VCA0834, predicted membrane-associated
HH1221	1189082	1190293	404	+	<i>argG</i>	Argininosuccinate synthase
HH1222	1190297	1191811	505	+		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0197, predicted secreted protein
HH1223	1191873	1192685	271	+	<i>minD</i>	Cell division inhibitor MinD
HH1224	1192685	1192918	78	+	<i>minE</i>	Bacterial cell division topological specificity factor MinE
HH1225	1192921	1193034	38	-		Hypothetical protein
HH1226	1193051	1193917	289	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative periplasmic protein CJ0633
HH1227	1193930	1194718	263	+	<i>dprA</i>	DNA processing protein DprA, possibly involved in DNA uptake
HH1228	1194781	1195119	113	+		Hypothetical protein, predicted membrane-associated
HH1229	1195122	1195535	138	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0635
HH1230	1195703	1196134	144	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> integral membrane protein
HH1231	1196390	1197559	390	+		Hypothetical protein, predicted secreted protein
HH1232	1197570	1198058	163	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0121
HH1233	1198153	1200003	617	+	<i>speA</i>	Arginine decarboxylase
HH1234	1200006	1200707	234	+	<i>cysE</i>	Serine acetyltransferase
HH1235	1200722	1201744	341	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0948, predicted membrane-associated
HH1236	1201747	1202100	118	-	<i>dksA</i>	DnaK suppressor protein DskA
HH1237	1202113	1202502	130	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0949
HH1238	1202546	1203421	292	-	<i>accD</i>	Acetyl-CoA carboxylase, $\beta$ subunit
HH1239	1203427	1204170	248	-	<i>suhB</i>	Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0128c, predicted extragenic suppressor protein SuhB
HH1240	1204239	1204862	208	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0951
HH1241	1204978	1206327	450	+	<i>gdhA</i>	Glutamate dehydrogenase
HH1242	1206418	1207467	350	-	<i>mutY</i>	A/G-specific adenine glycosylase
HH1243	1207616	1208818	401	+	<i>ndh</i>	NADH dehydrogenase Ndh
HH1244	1209054	1209734	227	+		Adenine-specific DNA methylase
HH1245	1209808	1210812	335	+	<i>purM</i>	AIR synthetase (FGAM cyclase) PurM
HH1246	1210831	1211619	263	+		Hypothetical protein, predicted secreted protein
HH1247	1211625	1212428	268	+	<i>aroE</i>	Shikimate 5-dehydrogenase
HH1248	1212487	1212762	92	+	<i>gatC</i>	Glu-tRNA <sup>Gln</sup> amidotransferase, subunit C
HH1249	1212762	1213466	235	+	<i>ung</i>	Uracil DNA glycosylase
HH1250	1213479	1215173	565	-	<i>kefB</i>	Glutathione-regulated potassium-efflux system protein KefB
HH1251	1215345	1216601	419	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0846, predicted membrane-associated
HH1252	1216753	1217448	232	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0343c, predicted membrane-associated
HH1253	1217541	1217687	49	-		Hypothetical protein
HH1254	1217707	1218492	262	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1613c
HH1255	1218550	1219818	423	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0728, predicted PP-loop superfamily ATPase
HH1256	1219927	1221387	487	+	<i>fixN</i>	Cb-type cytochrome C oxidase subunit I
HH1257	1221406	1222143	246	+	<i>fixO</i>	Cb-type cytochrome C oxidase subunit II
HH1258	1222143	1222370	76	+	<i>fixQ</i>	Cb-type cytochrome C oxidase subunit IV
HH1259	1222370	1223239	290	+	<i>fixP</i>	Cb-type cytochrome C oxidase subunit III
HH1260	1223254	1223451	66	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative periplasmic protein
HH1261	1223464	1223568	35	+		Hypothetical protein, predicted membrane-associated
HH1262	1223575	1224246	224	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0149, predicted secreted protein
HH1263	1224266	1224895	210	+		Hypothetical protein, predicted secreted protein

HH1264	1224908	1225204	99	+		Hypothetical protein, predicted secreted protein
HH1265	1225207	1225968	254	+		Hypothetical protein
HH1266	1226034	1226375	114	+		Hypothetical protein
HH1267	1226460	1227647	396	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1687, predicted efflux protein
HH1268	1227665	1230562	966	-	<i>dld</i>	Conserved hypothetical protein, similar to <i>H. pylori</i> HP1222, predicted D-lactate dehydrogenase Dld
HH1269	1230617	1231030	138	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0950c, predicted secreted protein
HH1270	1231087	1234740	1218	-	<i>dnaE</i>	DNA-dependent DNA polymerase III, $\alpha$ chain
HH1271	1234897	1236297	467	+		Hypothetical protein, predicted secreted protein
HH1272	1236300	1237424	375	-	<i>nusA</i>	Transcription termination factor NusA
HH1273	1237600	1237857	86	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0459c
HH1274	1237945	1239273	443	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0269
HH1275	1239270	1239911	214	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0270
HH1276	1239977	1241014	346	+		Hypothetical protein
HH1277	1241021	1241566	182	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0272, predicted secreted protein
HH1278	1241562	1242140	193	+		Hypothetical protein, predicted membrane-associated
HH1279	1242153	1243103	317	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0707
HH1280	1243107	1243472	122	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0692c, predicted membrane-associated
HH1281	1243550	1243645	32	+		Hypothetical protein
HH1282	1243793	1244677	295	+	<i>fabD</i>	Malonyl CoA-acyl carrier protein transacylase
HH1283	1244695	1245390	232	+		S-adenosylhomocysteine nucleosidase
HH1284	1245405	1245920	172	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1002c
HH1285	1245933	1246400	156	+		Conserved hypothetical protein, similar to <i>N. meningitidis</i> pilin Pile
HH1286	1246807	1247655	283	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1467
HH1287	1247726	1249078	451	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1489, predicted secreted protein
HH1288	1249103	1250074	324	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1488, predicted secreted protein
HH1289	1250147	1250332	62	+	<i>rpmB</i>	Ribosomal protein L28
HH1290	1250353	1251477	375	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0490, predicted potassium channel
HH1291	1251473	1252684	37.923	+		Ornithine acetyltransferase
HH1292	1252803	1253021	73	+		Conserved hypothetical protein
HH1293	1253203	1253325	41	+		Hypothetical protein
HH1294	1253517	1254881	455	-		Fibronectin/fibrinogen-binding protein
HH1295	1254907	1256445	513	-	<i>recN</i>	DNA repair protein RecN
HH1296	1256463	1257365	301	-		Conserved hypothetical protein, possible kinase
HH1297	1257377	1257982	202	-		Hypothetical protein, predicted secreted protein
HH1298	1258222	1259445	408	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative integral membrane protein
HH1299	1259460	1259696	79	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1501
HH1300	1259771	1259890	40	+		Hypothetical protein
HH1301	1259972	1260487	172	+		Hypothetical protein
HH1302	1260715	1261968	418	+		Hypothetical protein
HH1303	1262036	1262215	60	+		Hypothetical protein
HH1304	1262296	1262904	203	+		Conserved hypothetical protein, similar to <i>H. pylori</i> Hop-family proteins
HH1305	1262967	1264160	398	-		Hypothetical protein, predicted secreted protein
HH1306	1264186	1265091	302	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1336
HH1307	1265218	1265691	158	-		Conserved hypothetical protein, similar to <i>Archaeoglobus fulgidus</i> AF2335

HH1308	1265776	1266978	401	-	<i>ackA</i>	Acetate kinase
HH1309	1267001	1267993	331	-	<i>pta</i>	Phosphotransacetylase
HH1310	1268188	1270191	668	-		Methyl-accepting chemotaxis protein
HH1311	1270288	1271631	448	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1454c
HH1312	1271792	1272382	197	+		Hypothetical protein, predicted secreted protein
HH1313	1272385	1273212	276	-		Enoyl-[acyl-carrier-protein] reductase (NADH)
HH1314	1273345	1273728	128	+		Hypothetical protein, predicted secreted protein
HH1315	1273746	1274450	235	-	<i>tpi</i>	Triosephosphate isomerase
HH1316	1274627	1275685	353	+	<i>yhjA</i>	Cytochrome c551 peroxidase
HH1317	1275810	1278545	912	+	<i>polA</i>	DNA polymerase I
HH1318	1278675	1278977	101	+		Hypothetical protein
HH1319	1279263	1280435	391	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1487, predicted membrane-associated
HH1320	1280435	1280710	92	-	<i>flhB_2</i>	Flagellar basal body protein FlhB, similar to <i>H. pylori</i> HP1575 (FlhB2)
HH1321	1280722	1281357	212	-	<i>ribC</i>	Riboflavin synthase, $\alpha$ chain
HH1322	1281447	1282241	265	+		Conserved hypothetical protein
HH1323	1282265	1283386	374	+	<i>dniR</i>	Conserved hypothetical protein, similar to <i>H. pylori</i> HP1572, possibly regulatory protein DniR
HH1324	1283404	1284297	298	+	<i>rlpA</i>	Rare lipoprotein A
HH1325	1284326	1284934	203	+	<i>hisB</i>	Imidazoleglycerol-phosphate dehydratase
HH1326	1284934	1285425	164	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1570
HH1327	1285394	1285939	182	+		Conserved hypothetical protein, predicted secreted protein
HH1328	1285942	1286409	156	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1568, predicted membrane-associated
HH1329	1286457	1287122	222	+		Conserved hypothetical protein, possible ATP/GTP binding protein
HH1330	1287115	1287582	156	+		Conserved hypothetical protein, similar to Aquifex aeolicus AQ1359, predicted acetyltransferase
HH1331	1287549	1287998	150	+		Hypothetical protein, predicted membrane-associated
HH1332	1287998	1289782	595	+		Penicillin-binding protein
HH1333	1289800	1290795	332	+	<i>flmA</i>	Flagellar glycosylation protein FlmA
HH1334	1290872	1291363	164	+		Ferritin
HH1335	1291455	1292693	413	+	<i>dfp</i>	Pantothenate metabolism flavoprotein
HH1336	1292693	1293421	243	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0842
HH1337	1293461	1295563	701	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative MCP-type signal transduction protein CJ1506c
HH1338	1295669	1296043	125	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0977
HH1339	1296081	1296176	32	+		Hypothetical protein
HH1340	1296140	1297084	315	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0976, predicted methyltransferase
HH1341	1297065	1298105	347	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0418
HH1342	1298127	1300055	643	-	<i>metG</i>	Methionyl-tRNA synthetase
HH1343	1300078	1300275	66	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1384
HH1344	1300271	1301107	279	-	<i>fbp</i>	Fructose-1,6-biphosphatase
HH1345	1301158	1301850	231	-		Hypothetical protein
HH1346	1301932	1302579	216	+	<i>rpe</i>	Ribulose-phosphate 3-epimerase
HH1347	1302588	1303385	266	+	<i>dnaQ</i>	DNA polymerase III, $\epsilon$ subunit
HH1348	1303369	1304205	279	-	<i>hemK</i>	Possible DNA methylase HemK
HH1349	1304198	1305421	408	-		Zinc-metallo protease
HH1350	1305554	1307173	540	+	<i>pyrG</i>	CTP synthase (UTP-ammonia lyase)
HH1351	1307193	1308758	522	+	<i>recJ</i>	Single-stranded DNA-specific exonuclease

HH1352	1308778	1309554	259	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1056c
HH1353	1309759	1311087	443	+	<i>purB</i>	Adenylosuccinate lyase PurB
HH1354	1311071	1311646	192	-		Conserved hypothetical protein, similar to <i>H. pylori</i> conserved hypothetical mitochondrial protein 4
HH1355	1311655	1312266	204	-	<i>pyrE</i>	Orotate phosphoribosyltransferase
HH1356	1312284	1312961	226	-		Hypothetical protein
HH1357	1313105	1313608	168	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1028, predicted secreted protein
HH1358	1313613	1315724	704	+		DNA helicase II
HH1359	1315724	1316638	305	+		Hypothetical protein , predicted secreted protein
HH1360	1316695	1317285	197	+	<i>ubiD</i>	Phenylacrylic acid decarboxylase
HH1361	1317288	1317782	165	+	<i>kdtB</i>	Lipopolysaccharid core biosynthesis protein
HH1362	1317785	1318369	195	+	<i>tmk</i>	Thymidylate kinase
HH1363	1318376	1318984	203	+		Conserved hypothetical protein
HH1364	1319075	1320598	508	+	<i>flaA_1</i>	Major flagellin subunit FlaA_1
HH1365	1320663	1320986	108	-		Conserved hypothetical protein, predicted secreted protein
HH1366	1321061	1321918	286	+	<i>folD</i>	Methylenetetrahydrofolate dehydrogenase
HH1367	1321918	1322928	337	+	<i>lepB</i>	Signal peptidase I
HH1368	1322943	1323383	147	+	<i>rpiB</i>	Ribose 5-phosphate isomerase RpiB
HH1369	1323402	1323752	117	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative membrane protein
HH1370	1323783	1324316	178	+	<i>apt</i>	Adenine phosphoribosyltransferase
HH1371	1324319	1325077	253	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0571, predicted membrane-associated
HH1372	1325120	1326541	474	+	<i>pepA</i>	Aminopeptidase
HH1373	1326545	1327642	366	+		Conserved hypothetical protein, possible GTP-binding protein
HH1374	1327844	1328068	75	-		Hypothetical protein
HH1375	1328068	1328511	148	-		Hypothetical protein
HH1376	1328511	1329365	285	-		Hypothetical protein
HH1377	1329706	1330014	103	+	<i>rpsJ</i>	Ribosomal protein S10
HH1378	1330100	1330648	183	+	<i>rplC</i>	Ribosomal protein L3
HH1379	1330663	1331283	207	+	<i>rplD</i>	Ribosomal protein L4
HH1380	1331287	1331565	93	+	<i>rplW</i>	Ribosomal protein L23
HH1381	1331578	1332402	275	+	<i>rplB</i>	Ribosomal protein L2
HH1382	1332416	1332694	93	+	<i>rpsS</i>	Ribosomal protein S19
HH1383	1332707	1333276	190	+	<i>rplV</i>	Ribosomal protein L22
HH1384	1333282	1333989	236	+	<i>rpsC</i>	Ribosomal protein S3
HH1385	1333996	1334418	141	+	<i>rplP</i>	Ribosomal protein L16/L10E
HH1386	1334408	1334593	62	+	<i>rpmC</i>	Ribosomal protein L29
HH1387	1334600	1334863	88	+	<i>rpsQ</i>	Ribosomal protein S17
HH1388	1334863	1335228	122	+	<i>rplN</i>	Ribosomal protein L14
HH1389	1335231	1335464	78	+	<i>rplX</i>	Ribosomal protein L24
HH1390	1335467	1336009	181	+	<i>rplE</i>	Ribosomal protein L5
HH1391	1336033	1336143	37	+		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP1226
HH1392	1336209	1336601	131	+	<i>rpsH</i>	Ribosomal protein S8
HH1393	1336614	1337147	178	+	<i>rplF</i>	Ribosomal protein L6
HH1394	1337166	1337519	118	+	<i>rplR</i>	Ribosomal protein L18
HH1395	1337532	1337969	146	+	<i>rpsE</i>	Ribosomal protein S5



HH1396	1337983	1338381	133	+	<i>rplO</i>	Ribosomal protein L15
HH1397	1338381	1339628	416	+	<i>secY</i>	Preprotein translocase, subunit SecY
HH1398	1339633	1340388	252	+	<i>map</i>	Methionine aminopeptidase
HH1399	1340394	1340609	72	+	<i>infA</i>	Translation initiation factor IF-1
HH1400	1340816	1341175	120	+	<i>rpsM</i>	Ribosomal protein S13
HH1401	1341188	1341577	130	+	<i>rpsK</i>	Ribosomal protein S11
HH1402	1341591	1342214	208	+	<i>rpsD</i>	Ribosomal protein S4
HH1403	1342245	1343246	334	+	<i>rpoA</i>	DNA-dependent RNA polymerase, $\alpha$ subunit
HH1404	1343264	1343611	116	+	<i>rplQ</i>	Ribosomal protein L17
HH1405	1344048	1345616	523	+		Hypothetical protein
HH1406	1345664	1346782	373	+		Hypothetical protein, predicted secreted protein
HH1407	1346855	1347286	144	+	<i>flgB</i>	Flagellar basal body rod protein FlgB
HH1408	1347308	1347796	163	+	<i>flgC</i>	Flagellar basal body rod protein FlgC
HH1409	1347809	1348117	103	+	<i>fliE</i>	Flagellar hook-basal body protein FliE
HH1410	1348129	1349919	597	+		Conserved hypothetical protein, probable penicillin-binding protein
HH1411	1349931	1350068	46	+		Hypothetical protein
HH1412	1350151	1350702	184	+		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0216
HH1413	1350705	1353566	954	-		Hypothetical protein, predicted membrane-associated
HH1414	1353573	1354373	267	-	<i>trpA</i>	Tryptophan synthase, $\alpha$ chain
HH1415	1354518	1355777	420	+	<i>trpB</i>	Tryptophan synthase, $\beta$ chain
HH1416	1355797	1356162	122	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1112c
HH1417	1356167	1357156	330	-		Hypothetical protein, predicted secreted protein
HH1418	1357286	1360003	906	+		Hypothetical protein
HH1419	1360016	1360954	313	+		Hypothetical protein
HH1420	1360957	1363023	689	+		Hypothetical protein
HH1421	1363026	1364291	422	+		Hypothetical protein
HH1422	1364426	1365439	338	+		Conserved hypothetical protein, similar to <i>N. meningitidis</i> NMA1635
HH1423	1365552	1366976	475	+		Type I restriction-modification system, methyltransferase subunit
HH1424	1367061	1368365	435	+		Conserved hypothetical protein, possible arsenical pump membrane protein
HH1425	1368440	1370014	525	+		Hypothetical protein
HH1426	1370098	1370937	280	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1420c
HH1427	1370990	1371772	261	+		Conserved hypothetical protein, possible methyltransferase
HH1428	1371816	1373405	530	+		Hypothetical protein
HH1429	1373504	1374196	231	+		Hypothetical protein
HH1430	1374211	1374549	113	+		Hypothetical protein
HH1431	1374657	1374986	110	+		Hypothetical protein
HH1432	1375002	1375511	170	+		Hypothetical protein, predicted secreted protein
HH1433	1375515	1375688	58	+		Hypothetical protein
HH1434	1376248	1379739	1164	+		Type I restriction/modification enzyme
HH1435	1379811	1380458	216	+		Conserved hypothetical protein, possible restriction/modification enzyme
HH1436	1380629	1382959	777	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1418c
HH1437	1382959	1383588	210	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1417c
HH1438	1383594	1384196	201	+	<i>cysC</i>	Adenylylsulfate kinase
HH1439	1384199	1384954	252	+		Conserved hypothetical protein, possible sugar nucleotidyltransferase

HH1440	1385005	1385802	266	+	<i>cysQ</i>	Conserved hypothetical protein, probable CysQ protein homolog
HH1441	1386020	1386409	130	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1137c
HH1442	1386468	1387922	485	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0140
HH1443	1387900	1389909	670	-		Putative endonuclease
HH1444	1390108	1394232	1375	+	<i>guaA</i>	Guanosine monophosphate synthetase GuaA
HH1445	1394487	1394810	108	+		Conserved hypothetical protein, similar to <i>H. pylori</i> type II DNA modification enzyme JHP0045
HH1446	1395180	1395872	231	+	<i>cdtA</i>	Cytolethal distending toxin CdtA
HH1447	1395895	1396713	273	+	<i>cdtB</i>	Cytolethal distending toxin CdtB
HH1448	1396726	1397274	183	+	<i>cdtC</i>	Cytolethal distending toxin CdtC
HH1449	1397252	1397518	89	+		Hypothetical protein
HH1450	1397568	1398113	182	+		Hypothetical protein
HH1451	1398440	1398868	143	+		Conserved hypothetical membrane protein, possible cation efflux pump
HH1452	1398868	1399179	104	+		Conserved hypothetical membrane protein, possible cation efflux pump
HH1453	1399278	1399379	34	+		Hypothetical protein
HH1454	1399379	1400542	388	+		Conserved hypothetical protein, similar to <i>Listeria monocytogenes</i> antibiotic resistance protein LMO0872
HH1455	1400616	1401536	307	-		Hypothetical protein, predicted membrane-associated
HH1456	1401536	1402252	239	-		Hypothetical protein, predicted membrane-associated
HH1457	1402255	1402944	230	-		Hypothetical protein, predicted membrane-associated
HH1458	1402950	1403522	191	-		Hypothetical protein, predicted membrane-associated
HH1459	1403590	1403751	54	+		Hypothetical protein
HH1460	1403772	1404284	171	+		Conserved hypothetical protein, similar to <i>Y. pestis</i> YP1998, predicted secreted protein
HH1461	1404325	1405239	305	+		Hypothetical protein, predicted secreted protein
HH1462	1405284	1406441	386	+		Aldo-keto reductase
HH1463	1406584	1407066	161	-		Conserved hypothetical protein, similar to <i>Bacillus halodurans</i> BH0306
HH1464	1407211	1408710	500	+		Conserved hypothetical protein, similar to <i>P. aeruginosa</i> PA1316, predicted efflux transporter
HH1465	1408875	1409480	202	+		Hypothetical protein
HH1466	1409559	1409666	36	-		Hypothetical protein
HH1467	1409791	1410045	85	+		Hypothetical protein, predicted secreted protein
HH1468	1410045	1410551	169	+		Conserved hypothetical protein, similar to <i>Lactococcus lactis</i> $\gamma$ -carboxymuconolactone decarboxylase
HH1469	1410599	1411213	205	+		Conserved hypothetical protein, possible galactoside acyltransferase
HH1470	1411334	1413262	643	+		Hypothetical protein, predicted secreted protein
HH1471	1413597	1414472	292	+		Aldo-keto reductase
HH1472	1414566	1415147	194	+	<i>mdaB</i>	Putative modulator of drug activity MdaB
HH1473	1415203	1415949	249	+		Conserved hypothetical protein, predicted secreted protein
HH1474	1415929	1416495	189	-		Conserved hypothetical protein, similar to <i>Bacteroides vulgaris</i> nitroimidazole antibiotic resistance protein
HH1475	1416675	1417043	123	-		Hypothetical protein, predicted membrane-associated
HH1476	1416898	1417290	131	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1523c
HH1477	1417378	1417473	32	+		Hypothetical protein
HH1478	1417559	1418593	345	+		Conserved hypothetical protein, similar to <i>E. coli</i> HybA hydrogenase
HH1479	1418593	1419264	224	+		Conserved hypothetical protein, similar to <i>V. cholerae</i> VC1511, predicted hydrogenase cytochrome B component
HH1480	1419518	1420180	221	+	<i>glnQ</i>	ABC-type amino-acid transporter, ATP-binding protein
HH1481	1420203	1420982	260	+		Probable ABC-type amino-acid transporter periplasmic solute-binding protein
HH1482	1420990	1421736	249	+		Putative ABC-type amino-acid transporter permease protein
HH1483	1421750	1422406	219	+	<i>gltK</i>	Putative ABC-type amino-acid transporter permease protein

HH1484	1422527	1422940	138	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> HP1065
HH1485	1422940	1423158	73	-		Hypothetical protein, predicted membrane-associated
HH1486	1423191	1423745	185	-	<i>gidB</i>	Glucose inhibited division protein B
HH1487	1423784	1424878	365	-	<i>queA</i>	S-adenosylmethionine:tRNA-ribosyltransferase-isomerase (queuine synthetase)
HH1488	1424878	1425672	265	-	<i>tatC</i>	Sec-independent protein secretion pathway component TatC
HH1489	1425678	1426244	189	-		Conserved hypothetical protein, similar to <i>H. pylori</i> Sec-independent translocase protein TatB homolog HP1060
HH1490	1426404	1427669	422	+	<i>serS</i>	Seryl-tRNA synthetase
HH1491	1427685	1430165	827	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1479, predicted membrane-associated
HH1492	1430182	1430532	117	-		Hypothetical protein
HH1493	1430783	1432063	427	+	<i>gltA</i>	Citrate synthase
HH1494	1432130	1432663	178	+	<i>rplY</i>	Ribosomal protein L25
HH1495	1432666	1433334	223	+	<i>pth</i>	Peptidyl-tRNA hydrolase
HH1496	1433340	1434416	359	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1498, predicted membrane-associated
HH1497	1434494	1435171	226	+	<i>atpB</i>	FoF1-type ATP synthase, A subunit
HH1498	1435161	1435757	199	+		Conserved hypothetical protein, similar to Aquifex aeolicus thiamine phosphate synthase AQ1366
HH1499	1435732	1437816	695	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative integral membrane protein CJ1055c
HH1500	1437912	1438778	289	+		Conserved hypothetical protein, predicted membrane-associated
HH1501	1438904	1439224	107	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0945, predicted secreted protein
HH1502	1439276	1440082	269	-		Conserved hypothetical protein, similar to Bacillus halodurans BH0857, predicted secreted protein
HH1503	1440054	1441856	601	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0522, predicted membrane-associated
HH1504	1441882	1442784	301	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0937, predicted integral membrane protein
HH1505	1443006	1444106	367	+	<i>mpr</i>	Putative ATP/GTP-binding protein
HH1506	1444109	1445434	442	-		Hypothetical protein, predicted secreted protein
HH1507	1445971	1447242	424	+	<i>lysA</i>	Diaminopimelate decarboxylase
HH1508	1447265	1448359	365	+	<i>pheA</i>	Chorismate mutase/prephenate dehydratase
HH1509	1448391	1449275	295	+		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0277
HH1510	1449353	1450084	244	+		Conserved hypothetical protein, similar to Streptomyces globisporus lysozyme M1 precursor
HH1511	1450091	1451065	325	+		Conserved hypothetical protein
HH1512	1451159	1452388	410	+		Hypothetical protein
HH1513	1452401	1453531	377	+		Conserved hypothetical protein, similar to Mycobacterium tuberculosis Rv1679, predicted acyl-CoA dehydrogenase
HH1514	1453537	1454406	290	+		Conserved hypothetical protein, similar to Mycobacterium tuberculosis Rv1680
HH1515	1454409	1455563	385	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0926
HH1516	1455569	1456600	344	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> alanine racemase CJ0905c
HH1517	1456648	1456950	101	-		Cytochrome c553
HH1518	1457049	1457633	195	-	<i>recR</i>	Recombination protein RecR
HH1519	1457748	1458902	385	+	<i>dnaJ_2</i>	Co-chaperone and heat shock protein DnaJ
HH1520	1458898	1459326	143	-		Hypothetical protein
HH1521	1459361	1459903	181	-		Hypothetical protein
HH1522	1460145	1460957	271	-		Hypothetical protein, predicted secreted protein
HH1523	1460964	1461254	97	-		Hypothetical protein, predicted secreted protein
HH1524	1461321	1461686	122	-		Hypothetical protein, predicted membrane-associated
HH1525	1461761	1462057	99	-		Hypothetical protein, predicted secreted protein
HH1526	1462176	1462880	235	-		Hypothetical protein, predicted secreted protein
HH1527	1462901	1463215	105	-		Hypothetical protein, predicted secreted protein

HH1528	1463464	1464798	445	-		Conserved hypothetical protein
HH1529	1464823	1467849	1009	-		Conserved hypothetical protein, similar to Clostridium acetobutylicum CAC2401, predicted activator of 2-hydroxyglutaryl-CoA dehydratase
HH1530	1467926	1468615	230	-		Hypothetical protein, predicted membrane-associated
HH1531	1468563	1469150	196	-	<i>gmhA</i>	Phosphoheptose isomerase
HH1532	1469138	1470583	482	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative ADP-heptose synthase
HH1533	1470610	1471614	335	-		ADP-L-glycero-D-manno-heptose-6-epimerase
HH1534	1471628	1472158	177	-		Conserved hypothetical protein, putative phosphatase
HH1535	1472395	1473138	248	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1493c, predicted membrane-associated
HH1536	1473148	1474074	309	-	<i>prsA</i>	Ribose-phosphate pyrophosphokinase
HH1537	1474134	1474841	236	-		Hypothetical protein
HH1538	1474976	1475065	30	+		Hypothetical protein
HH1539	1475123	1476583	487	+	<i>yphC</i>	GTP-binding protein YphC
HH1540	1476604	1477761	386	-	<i>metK</i>	S-adenosylmethionine synthetase
HH1541	1477980	1479986	669	+		Conserved hypothetical protein
HH1542	1480045	1480185	47	+		Hypothetical protein, predicted secreted protein
HH1543	1480257	1480844	196	+		Conserved hypothetical protein, similar to <i>H. pylori</i> Hop-family proteins
HH1544	1480946	1481539	198	+	<i>tsaA</i>	Alkyl hydroperoxide reductase TsaA
HH1545	1480952	1481569	206	-		Hypothetical protein, predicted membrane-associated
HH1546	1481826	1482206	127	+		Conserved hypothetical protein, similar to <i>P. aeruginosa</i> PA3235, predicted membrane-associated
HH1547	1482209	1483855	549	+	<i>yjcG</i>	Conserved hypothetical protein, putative sodium/solute symporter
HH1548	1483881	1485854	658	-	<i>uvrB</i>	Excinuclease ABC, subunit B
HH1549	1485924	1486142	73	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0681
HH1550	1486145	1486408	88	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0386
HH1551	1486408	1488318	637	+	<i>priA</i>	Primosomal protein N'
HH1552	1488377	1488814	146	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1460
HH1553	1488866	1489453	196	+		Conserved hypothetical protein, putative DNA methylase
HH1554	1489459	1490046	196	+	<i>fliL</i>	Flagellar basal body protein FliL
HH1555	1490054	1490413	120	+	<i>acpS</i>	Putative holo- [acyl-carrier protein] synthase
HH1556	1490412	1490567	52	-		Hypothetical protein, predicted secreted protein
HH1557	1490659	1491912	418	-	<i>aroF</i>	Phospho-2-dehydro-3-deoxyheptonate aldolase
HH1558	1491944	1492054	37	-		Hypothetical protein
HH1559	1492066	1492815	250	-		Oxidoreductase
HH1560	1492815	1493819	335	-		Conserved hypothetical protein, similar to <i>P. aeruginosa</i> PA1116
HH1561	1493785	1494357	191	-		Hypothetical protein
HH1562	1494383	1494481	33	-		Hypothetical protein
HH1563	1494555	1495316	254	-		Conserved hypothetical protein, possible ATP/GTP-binding protein
HH1564	1495300	1497573	758	-	<i>clpB</i>	ATP-dependent CLP protease ClpB, ATP-binding subunit
HH1565	1497589	1497849	87	-		Conserved hypothetical protein, similar to <i>N. meningitidis</i> NMB0837
HH1566	1497851	1497943	31	+		Hypothetical protein
HH1567	1498064	1498618	185	-	<i>oorC</i>	OorC subunit of 2-oxoglutarate:acceptor oxidoreductase
HH1568	1498623	1499447	275	-	<i>oorB</i>	OorB subunit of 2-oxoglutarate:acceptor oxidoreductase
HH1569	1499452	1500573	374	-	<i>oorA</i>	OorA subunit of 2-oxoglutarate:acceptor oxidoreductase
HH1570	1500586	1500894	103	-	<i>oorD</i>	OorD subunit of 2-oxoglutarate:acceptor oxidoreductase

HH1571	1500942	1501886	315	-	<i>mdh</i>	Malate dehydrogenase
HH1572	1502018	1502917	300	-	<i>pabC</i>	Conserved hypothetical protein, similar to <i>H. pylori</i> aminodeoxychorismate lyase HP0587
HH1573	1502880	1505834	985	+		Hypothetical protein, predicted secreted protein
HH1574	1505888	1506160	91	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1397
HH1575	1506171	1506860	230	+	<i>nth</i>	Endonuclease III
HH1576	1506941	1507342	134	+		Hypothetical protein
HH1577	1507362	1507712	117	+	<i>fliN</i>	Flagellar motor switch protein FliN
HH1578	1507833	1508621	263	+		Hypothetical protein, predicted membrane-associated
HH1579	1508624	1509379	252	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0582, TonB-like
HH1580	1509397	1509693	99	-		Conserved hypothetical protein
HH1581	1509710	1511080	457	-	<i>thiC</i>	Thiamine biosynthesis protein ThiC
HH1582	1511265	1512431	389	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1607
HH1583	1512482	1513387	302	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> possible two-component response regulator CJ1608
HH1584	1513387	1513869	161	+	<i>pgpA</i>	Phosphatidylglycerophosphatase A
HH1585	1513897	1514412	172	-		Hypothetical protein, predicted secreted protein
HH1586	1514439	1514537	33	-		Hypothetical protein
HH1587	1514562	1515104	181	-		Hypothetical protein
HH1588	1515152	1515961	270	-	<i>thiF</i>	Thiamine biosynthesis protein ThiF
HH1589	1515964	1518330	789	-	<i>pflA</i>	Paralysed flagella protein PflA
HH1590	1518373	1519848	492	-	<i>nuoN</i>	Donor-ubiquinone reductase I, subunit N
HH1591	1519853	1521427	525	-	<i>nuoM</i>	Donor-ubiquinone reductase I, subunit M
HH1592	1521427	1523301	625	-	<i>nuoL</i>	Donor-ubiquinone reductase I, subunit L
HH1593	1523307	1523606	100	-	<i>nuoK</i>	Donor-ubiquinone reductase I, subunit K
HH1594	1523606	1524124	173	-	<i>nuoJ</i>	Donor-ubiquinone reductase I, subunit J
HH1595	1524120	1524755	212	-	<i>nuoI</i>	Donor-ubiquinone reductase I, subunit I
HH1596	1524767	1525762	332	-	<i>nuoH</i>	Donor-ubiquinone reductase I, subunit H
HH1597	1525762	1528233	824	-	<i>nuoG</i>	Donor-ubiquinone reductase I, subunit G
HH1598	1528233	1529042	270	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1265, predicted donor-ubiquinone reductase I, subunit F homolog
HH1599	1529042	1529269	76	-		Conserved hypothetical protein, similar to <i>H. pylori</i> 1264, predicted donor-ubiquinone reductase I, subunit E homolog
HH1600	1529282	1530508	409	-	<i>nuoD</i>	Donor-ubiquinone reductase I, subunit D
HH1601	1530508	1531248	247	-	<i>nuoC</i>	Donor-ubiquinone reductase I, subunit C
HH1602	1531265	1531771	169	-	<i>nuoB</i>	Donor-ubiquinone reductase I, subunit B
HH1603	1531756	1532157	134	-	<i>nuoA</i>	Donor-ubiquinone reductase I, subunit A
HH1604	1532288	1532875	196	-	<i>yebC</i>	Conserved hypothetical protein, similar to <i>H. pylori</i> HP0162
HH1605	1532989	1533090	34	+		Hypothetical protein
HH1606	1533125	1534099	325	-	<i>hemB</i>	Delta-aminolevulinic acid dehydratase
HH1607	1534113	1535369	31	-		Two-component system histidine kinase
HH1608	1535387	1536049	221	-		Two-component system response regulator, BaeR-like
HH1609	1536243	1536356	38	+		Hypothetical protein
HH1610	1536477	1536833	119	-		Hypothetical protein
HH1611	1536806	1537066	87	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0787
HH1612	1537146	1537946	267	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1182

HH1613	1537939	1538244	102	-		Hypothetical protein, predicted membrane-associated
HH1614	1538251	1539579	443	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1181, predicted efflux transporter
HH1615	1539599	1540129	177	-	<i>ppiA</i>	Peptidyl-prolyl cis-trans isomerase (rotamase)
HH1616	1540369	1541262	298	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1440
HH1617	1541280	1541369	30	-		Hypothetical protein
HH1618	1541379	1542761	461	+		Protease
HH1619	1542780	1543487	236	+	<i>purC</i>	SAICAR synthetase PurC
HH1620	1543500	1543739	80	+	<i>purS</i>	Conserved hypothetical protein, predicted PurS-like protein
HH1621	1543739	1544404	222	+	<i>purQ</i>	FGAM synthetase [glutamine amidotransferase domain] PurQ
HH1622	1544420	1545511	364	+		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP1268, predicted membrane-associated
HH1623	1545498	1546223	242	+	<i>plsC</i>	1-acyl-glycerol-3-phosphate acyltransferase PlsC
HH1624	1546443	1547846	468	+	<i>pyrD</i>	Dihydroorotate dehydrogenase
HH1625	1547880	1549175	432	+		Putative zinc protease
HH1626	1549181	1550059	293	+	<i>dapA</i>	Dihydrodipicolinate synthetase
HH1627	1550059	1550859	267	+		Conserved hypothetical protein, possible oxidoreductase
HH1628	1551027	1552226	400	+		Conserved hypothetical protein, possible apolipoprotein N-acyltransferase
HH1629	1552335	1553093	253	+		Hypothetical protein, predicted secreted protein
HH1630	1553201	1554862	554	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1679
HH1631	1554894	1556297	468	-	<i>dagA</i>	Predicted amino-acid transport protein
HH1632	1556475	1557098	208	-		Conserved hypothetical protein, similar to <i>E. coli</i> YeaS, predicted membrane-associated
HH1633	1557237	1559708	824	+	<i>gyrA</i>	DNA gyrase, subunit A
HH1634	1559752	1560222	157	+		Hypothetical protein, predicted secreted protein
HH1635	1560222	1561529	436	+	<i>flgR</i>	Transcriptional activator FlgR (NtrC family)
HH1636	1561553	1562071	173	+		Hypothetical protein, predicted secreted protein
HH1637	1562124	1562984	287	-		Conserved hypothetical protein, similar to <i>V. cholerae</i> VC0271, predicted membrane-associated
HH1638	1563172	1564134	321	-		Conserved hypothetical protein, similar to <i>V. cholerae</i> VC0271, predicted membrane-associated
HH1639	1564265	1565158	298	-		Hypothetical protein, predicted secreted protein
HH1640	1565154	1566386	411	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1026
HH1641	1566383	1566757	125	-	<i>hspR</i>	Putative heat shock transcriptional regulator
HH1642	1566786	1567676	297	-	<i>cbpA</i>	Curved DNA-binding protein CbpA
HH1643	1567835	1570747	971	+		Putative helicase
HH1644	1571029	1572408	460	+		Conserved hypothetical protein, similar to <i>H. pylori</i> NA(+)/H(+) antiporter 1 jhp1447
HH1645	1572432	1573763	444	+	<i>nhaA</i>	Na <sup>+</sup> /H <sup>+</sup> antiporter
HH1646	1573817	1574107	97	+		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP1448, predicted membrane-associated
HH1647	1574117	1575952	612	+	<i>secD</i>	Preprotein translocase subunits SecD
HH1648	1575959	1576927	323	+	<i>secF</i>	Preprotein translocase subunits SecF
HH1649	1576941	1577279	113	+		Conserved hypothetical protein, similar to <i>H. pylori</i> conserved hypothetical integral membrane protein
HH1650	1577318	1578028	237	+		Hypothetical protein
HH1651	1578043	1580130	696	+		Hypothetical protein, predicted secreted protein
HH1652	1580140	1580598	153	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> putative hydrolase
HH1653	1580835	1582358	508	+	<i>flaA_2</i>	Major flagellin subunit FlaA_2
HH1654	1582612	1583277	222	+		Conserved hypothetical protein, similar to <i>E. coli</i> YfcA, predicted membrane-associated
HH1655	1583353	1583766	138	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0721, predicted secreted protein
HH1656	1583821	1584489	223	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> chemotaxis two-component response regulator CJ1223c

HH1657	1584505	1585785	427	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> chemotaxis two-component histidine kinase CJ1222c
HH1658	1585869	1587329	487	+	<i>dnaB</i>	Replicative DNA helicase
HH1659	1587342	1588676	445	+		Conserved hypothetical protein, similar to <i>H. pylori</i> competence protein ComE3
HH1660	1588655	1589941	429	-		Conserved hypothetical protein, possible UDP-glucose 6-dehydrogenase
HH1661	1589944	1590522	193	-		Conserved hypothetical protein, possible acyltransferase
HH1662	1590522	1591481	320	-	<i>wbpB</i>	Lipopolysaccharide biosynthesis protein wbpB
HH1663	1591492	1592415	308	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0404, predicted transmembrane protein
HH1664	1592463	1593005	181	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0184
HH1665	1593020	1594267	416	-	<i>glyA</i>	Glycine hydroxymethyltransferase
HH1666	1594270	1595823	518	-	<i>lysS</i>	Lysyl-tRNA synthetases
HH1667	1595839	1596459	207	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0181, predicted membrane-associated
HH1668	1596645	1597538	298	+	<i>ubiA</i>	4-hydroxybenzoate octaprenyltransferase
HH1669	1597531	1598094	188	+		Hypothetical protein
HH1670	1598101	1598625	175	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1358, predicted membrane-associated
HH1671	1598650	1599834	395	+		Conserved hypothetical protein, possible aspartate aminotransferase
HH1672	1599841	1601130	430	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0580, predicted membrane-associated
HH1673	1601130	1601801	224	+		Hypothetical protein, predicted membrane-associated
HH1674	1601878	1603845	656	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0578, predicted membrane-associated
HH1675	1603852	1604616	255	+		Hypothetical protein
HH1676	1604639	1604770	44	+		Conserved hypothetical protein, similar to <i>H. pylori</i> Hop-family proteins, may become fused with HH1677 due to slipped strand mispairing
HH1677	1604823	1605449	209	+	<i>omp30</i>	Conserved hypothetical protein, similar to <i>H. pylori</i> Hop-family proteins, may become fused with HH1676 due to slipped strand mispairing
HH1678	1605557	1606231	225	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0186c, predicted membrane-associated
HH1679	1606270	1607235	322	-	<i>corA</i>	Mg and Co transporter
HH1680	1607380	1607922	181	+	<i>pgsA</i>	Phosphatidylglycerophosphate synthase
HH1681	1607922	1608974	351	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1068, predicted metallopeptidase
HH1682	1608987	1609652	222	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0395
HH1683	1609652	1610035	128	+		Hypothetical protein, predicted secreted protein
HH1684	1610064	1611371	436	+		Hypothetical protein
HH1685	1611384	1612115	244	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0984
HH1686	1612194	1613990	599	+	<i>pycB</i>	Oxaloacetate decarboxylase, $\alpha$ chain
HH1687	1613968	1615161	398	+	<i>nifS</i>	NifS family aminotransferase
HH1688	1615164	1618514	1117	-	<i>carB</i>	Carbamoylphosphate synthase, large subunit
HH1689	1618719	1618892	58	+		Hypothetical protein, predicted membrane-associated
HH1690	1618909	1619121	71	-		Hypothetical protein, predicted membrane-associated
HH1691	1619133	1619984	284	-	<i>purU</i>	Formyltetrahydrofolate deformylase PurU
HH1692	1619984	1620865	294	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1435, predicted protease
HH1693	1620891	1621268	126	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1388
HH1694	1621338	1621802	155	+		Hypothetical protein, predicted secreted protein
HH1695	1621909	1624473	855	+	<i>flgL</i>	Flagellar hook-associated protein FlgL
HH1696	1624473	1625228	252	+		Hypothetical protein
HH1697	1625279	1625956	226	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> chemotaxis two-component response regulator CJ0355c
HH1698	1626048	1626146	33	-		Hypothetical protein

HH1699	1626294	1626953	220	+	<i>speE</i>	Spermidine synthase
HH1700	1626959	1627579	207	+		Putative ATP/GTP-binding protein
HH1701	1627596	1628387	264	+	<i>dapF</i>	Diaminopimelate epimerase
HH1702	1628402	1628650	83	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0667
HH1703	1628653	1629099	149	-		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0852
HH1704	1629286	1631439	718	+	<i>flgE</i>	Flagellar hook protein FlgE, similar to <i>H. pylori</i> HP0870 (FlgE1)
HH1705	1631612	1632535	308	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> possible periplasmic protein
HH1706	1632564	1633073	170	-		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0273, predicted membrane-associated
HH1707	1633186	1634337	384	+		Conserved hypothetical protein, similar to <i>E. coli</i> ECS4630
HH1708	1634237	1635640	468	+	<i>pcnB</i>	Poly(A) polymerase
HH1709	1635673	1637574	634	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CiaB protein
HH1710	1637582	1637671	30	+		Hypothetical protein
HH1711	1637704	1638630	309	+	<i>htpX</i>	Heat shock protein HtpX
HH1712	1638709	1639326	206	+	<i>foiE</i>	GTP cyclohydrolase I
HH1713	1639445	1640569	375	+		Conserved hypothetical protein, similar to <i>H. pylori</i> Hop-family proteins
HH1714	1640750	1641535	262	-		Conserved hypothetical protein, similar to <i>Deinococcus radiodurans</i> putative histidinol phosphatase DR0470
HH1715	1641680	1642090	137	+		Hypothetical protein
HH1716	1642090	1642710	207	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1485
HH1717	1642731	1643168	146	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1484, predicted membrane-associated
HH1718	1643182	1644597	472	+	<i>argH</i>	Argininosuccinate lyase
HH1719	1644593	1645321	243	+	<i>ubiE</i>	Ubiquinone/menaquinone biosynthesis methyltransferase
HH1720	1645523	1647004	494	+		Conserved hypothetical protein, possible malate:quinone oxidoreductase
HH1721	1647128	1648435	436	+	<i>hisD</i>	Histidinol dehydrogenase
HH1722	1648442	1648702	87	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0539
HH1723	1648698	1649171	158	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0242
HH1724	1649171	1650079	303	+		Conserved hypothetical protein, possible geranyl transferase
HH1725	1650093	1651412	440	+	<i>hemA</i>	Glutamyl-tRNA reductase
HH1726	1651425	1653188	588	+	<i>proS</i>	Prolyl-tRNA synthetase
HH1727	1653201	1654163	321	+	<i>hemC</i>	Porphobilinogen deaminase
HH1728	1654309	1654410	34	-		Hypothetical protein
HH1729	1654478	1654915	146	+		Conserved hypothetical protein, similar to <i>H. pylori</i> Hop-family proteins
HH1730	1654974	1655858	295	-	<i>rbn</i>	TRNA-processing ribonuclease BN
HH1731	1655873	1656721	283	-	<i>bioB</i>	Biotin synthetase
HH1732	1656817	1658067	417	+	<i>xseA</i>	Exonuclease VII, large subunit
HH1733	1658087	1658776	230	-		Hypothetical protein
HH1734	1658855	1659745	297	-	<i>selD</i>	Selenophosphate synthase
HH1735	1659762	1659866	35	+		Hypothetical protein
HH1736	1659911	1660522	204	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1505c
HH1737	1660708	1663284	859	-	<i>acnB</i>	Aconitate hydratase
HH1738	1663392	1663625	78	+		Hypothetical protein, predicted membrane-associated
HH1739	1663628	1665052	475	+	<i>nifS</i>	Conserved hypothetical protein, similar to <i>H. pylori</i> HP0405, predicted NifS-like protein
HH1740	1665138	1666991	618	-	<i>htpG</i>	Heat shock protein HtpG
HH1741	1667185	1668096	304	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1618c
HH1742	1668186	1669322	379	+		Hypothetical protein, predicted secreted protein



HH1743	1669344	1670600	419	+		Hypothetical protein, predicted secreted protein
HH1744	1670759	1670962	68	+	<i>rpmE</i>	Ribosomal protein L31
HH1745	1670970	1671827	286	+		Conserved hypothetical protein
HH1746	1671835	1672521	229	+		Conserved hypothetical protein, possible rRNA methylase
HH1747	1672511	1673665	385	+		Hypothetical protein, predicted membrane-associated
HH1748	1673662	1674468	269	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0555, predicted secreted protein
HH1749	1674507	1675712	402	+		Conserved hypothetical protein, possible aminotransferase
HH1750	1675725	1677017	431	+	<i>hom</i>	Homoserine dehydrogenase
HH1751	1677044	1677373	110	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0823
HH1752	1677388	1677771	128	-		Hypothetical protein
HH1753	1677764	1678234	157	-		Hypothetical protein
HH1754	1678266	1678355	30	+		Hypothetical protein
HH1755	1678358	1678816	153	-		Hypothetical protein, predicted secreted protein
HH1756	1678836	1681379	848	-		Putative serine/threonine protein phosphatase
HH1757	1681418	1681606	63	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0085, predicted secreted protein
HH1758	1681606	1682415	270	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0141c, possible ABC transporter
HH1759	1682411	1683139	243	-	<i>fecE</i>	ABC transporter, ATP-binding protein
HH1760	1683146	1684012	289	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0143c, predicted periplasmic solute binding protein for ABC transport system
HH1761	1684012	1685379	456	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0087, predicted secreted protein
HH1762	1685383	1685763	127	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0717
HH1763	1685778	1686275	166	-		Putative phosphotyrosine protein phosphatase
HH1764	1686275	1687546	424	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0067, predicted hydrolase
HH1765	1687549	1688370	274	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0983, predicted membrane-associated
HH1766	1688373	1689650	426	-	<i>pyrC_1</i>	Dihydroorotase
HH1767	1689655	1690392	246	-	<i>ccdA</i>	Cytochrome c biogenesis protein CcdA
HH1768	1690505	1692094	530	+	<i>deaD</i>	ATP-dependent RNA helicase DeaD
HH1769	1692110	1692688	193	+		Hypothetical protein
HH1770	1692713	1693534	274	-		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0739, predicted membrane-associated
HH1771	1693612	1694181	190	+	<i>adk</i>	Adenylate kinase
HH1772	1694417	1696093	559	+	<i>yihK</i>	GTP-binding protein
HH1773	1696168	1696788	207	+	<i>frxA</i>	Conserved hypothetical protein, similar to <i>H. pylori</i> HP0642 (FrxA), predicted nitroreductase
HH1774	1696801	1699173	791	+	<i>nrdA</i>	Ribonucleoside diphosphate reductase, $\alpha$ subunit
HH1775	1699244	1699594	117	+		Hypothetical protein, predicted membrane-associated
HH1776	1699540	1700616	359	-		$\alpha$ -1,3-fucosyltransferase
HH1777	1700616	1701680	355	-	<i>prfA</i>	Peptide chain release factor 1
HH1778	1701709	1702023	105	-	<i>rpsT</i>	Ribosomal protein S20
HH1779	1702066	1703424	453	+	<i>glmM</i>	Phosglucosamine mutase
HH1780	1703450	1703947	166	+	<i>lspA</i>	Lipoprotein signal peptidase
HH1781	1704224	1705063	280	+		Hypothetical protein, predicted secreted protein
HH1782	1705076	1705945	290	+		Hypothetical protein, predicted secreted protein
HH1783	1706005	1706238	78	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0916c
HH1784	1706321	1707370	350	+	<i>oppB</i>	Oligopeptide ABC transporter, permease protein OppB
HH1785	1707366	1708430	355	+	<i>oppC</i>	Oligopeptide ABC transporter, permease protein OppC

HH1786	1708549	1710000	484	+	<i>oppD</i>	Oligopeptide ABC transporter, ATP-binding protein OppD
HH1787	1709942	1710652	237	+	<i>magIII</i>	3-methyladenine DNA glycosylase
HH1788	1710683	1711120	146	+		Hypothetical protein
HH1789	1711202	1711330	43	+		Hypothetical protein, predicted membrane-associated
HH1790	1711412	1711687	92	+		Hypothetical protein, predicted secreted protein
HH1791	1711838	1712497	220	+		Hypothetical protein
HH1792	1712563	1713405	281	+	<i>ttdA</i>	Fumarate hydratase, $\alpha$ subunit
HH1793	1713419	1713973	185	+	<i>ttdB</i>	Fumarate hydratase, $\beta$ subunit
HH1794	1714136	1714435	100	+		Hypothetical protein
HH1795	1715103	1717001	633	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1337, predicted secreted protein
HH1796	1717036	1718577	514	-	<i>flaB</i>	Minor flagellin subunit FlaB
HH1797	1718606	1718710	35	-		Hypothetical protein
HH1798	1718740	1720986	749	+	<i>topA</i>	DNA topoisomerase I
HH1799	1721226	1721774	183	+		Conserved hypothetical protein, similar to <i>H. pylori</i> Hop-family proteins
HH1800	1721955	1722263	103	-		Conserved hypothetical protein, similar to <i>Thermotoga maritima</i> TM0763
HH1801	1722276	1724018	581	-	<i>aspS</i>	Aspartyl-tRNA synthetase
HH1802	1724070	1725035	322	-	<i>cheV_2</i>	Chemotaxis signal transduction protein CheV, similar to <i>H. pylori</i> HP0616 (CheV2)
HH1803	1725150	1727099	650	+	<i>lig</i>	DNA ligase
HH1804	1727112	1727717	202	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1029
HH1805	1727738	1728913	392	-	<i>dapE</i>	Succinyl-diaminopimelate desuccinylase
HH1806	1728918	1729301	128	-		Hypothetical protein
HH1807	1729297	1729920	208	-		Conserved hypothetical protein, similar to <i>P. aeruginosa</i> PA1644
HH1808	1729920	1731149	410	-		ADP-heptose:LPS heptosyltransferase
HH1809	1731325	1732650	442	+	<i>hisS</i>	Histidyl-tRNA synthetase
HH1810	1732655	1734508	618	+	<i>pepF</i>	Oligoendopeptidase PepF
HH1811	1734480	1734968	163	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1100
HH1812	1735054	1735719	222	+		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0420
HH1813	1735740	1736552	271	+		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0420
HH1814	1736556	1736861	102	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0467, predicted membrane-associated
HH1815	1736919	1737803	295	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0466
HH1816	1737851	1738345	165	+		Hypothetical protein
HH1817	1738359	1738775	139	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0436
HH1818	1738787	1739281	165	-	<i>tpx</i>	Thiol peroxidase
HH1819	1739349	1740779	477	+	<i>phoH</i>	Conserved hypothetical protein, putative phosphate starvation-inducible protein PhoH
HH1820	1740779	1741486	236	+		Hypothetical protein, predicted membrane-associated
HH1821	1741519	1742235	239	+		Conserved hypothetical protein, predicted lipoprotein
HH1822	1742338	1742658	107	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1429c, may become fused with HH1823 due to slipped strand mispairing
HH1823	1742726	1743277	184	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1429c, may become fused with HH1822 due to slipped strand mispairing
HH1824	1743354	1745780	809	-	<i>ppsA</i>	Phosphoenolpyruvate synthase
HH1825	1745942	1748176	745	+	<i>purL</i>	FGAM synthase [synthetase domain] PurL
HH1826	1748192	1748737	182	+		Conserved hypothetical protein, predicted secreted protein
HH1827	1748801	1750264	488	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0235

HH1828	1750331	1750972	214	-	<i>thiE</i>	Thiamine monophosphate synthase
HH1829	1750982	1751704	241	-		Arginyl tRNA transferase
HH1830	1751704	1752927	408	-	<i>mltC</i>	Membrane-bound lytic murein transglycosylase C (MltC)
HH1831	1753076	1754005	310	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP0117
HH1832	1754121	1754753	211	+	<i>sodF</i>	Superoxide dismutase
HH1833	1754869	1755696	276	+	<i>nadC</i>	Nicotinate-nucleotide pyrophosphorylase
HH1834	1755703	1756701	333	+	<i>thiL</i>	Thiamine monophosphate kinase
HH1835	1756714	1757427	238	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ1374c
HH1836	1757518	1759317	600	+		Hypothetical protein, predicted membrane-associated
HH1837	1759343	1759912	190	+		Hypothetical protein, predicted membrane-associated
HH1838	1759912	1760694	261	+	<i>psd</i>	Phosphatidylserine decarboxylase
HH1839	1760723	1761733	337	+	<i>nadA</i>	Quinolinate synthase
HH1840	1761899	1762393	165	+		Hypothetical protein, predicted membrane-associated
HH1841	1762366	1762695	110	+		Hypothetical protein
HH1842	1762709	1763782	358	-	<i>gcp</i>	Sialoglycoprotease Gcp
HH1843	1763848	1764957	370	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0949c
HH1844	1765101	1765667	189	-	<i>thiJ</i>	4-methyl-5( $\beta$ -hydroxyethyl)-thiazole monophosphate synthesis protein ThiJ
HH1845	1765915	1767000	362	+	<i>xerD</i>	Integrase/recombinase XerD
HH1846	1767013	1767567	185	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1580, predicted membrane-associated
HH1847	1768331	1770376	682	+	<i>frpB</i>	Iron-regulated outer membrane protein FrpB
HH1848	1770458	1770955	166	+	<i>ppa</i>	Inorganic pyrophosphatase
HH1849	1770994	1772415	474	+		Conserved hypothetical protein, possible pyruvate carboxylase A subunit
HH1850	1772435	1773865	477	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1363
HH1851	1773865	1774653	263	+	<i>thiG</i>	Thiazol biosynthesis protein thiG
HH1852	1774672	1775388	239	+		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0590
HH1853	1775563	1776201	213	+		Hypothetical protein
HH1854	1776268	1776990	241	+		Hypothetical protein
HH1855	1776997	1777632	212	+		Conserved hypothetical protein, similar to <i>E. coli</i> ECS2092, predicted secreted protein
HH1856	1777650	1778864	405	-		ABC transporter, ATP-binding component
HH1857	1778867	1779553	229	-		ABC transporter, ATP-binding component
HH1858	1779574	1780866	431	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0606, predicted membrane-associated
HH1859	1780866	1782374	503	-		Conserved hypothetical protein, similar to <i>C. jejuni</i> CJ0364c, predicted outer membrane channel protein
HH1860	1782378	1782473	32	-		Hypothetical protein
HH1861	1782509	1783930	474	+		Conserved hypothetical protein, similar to <i>H. pylori</i> JHP0016
HH1862	1783971	1784528	186	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1457
HH1863	1784556	1785131	192	+		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1456, predicted lipoprotein
HH1864	1785166	1786077	304	+		Hypothetical protein, predicted secreted protein
HH1865	1786086	1787474	463	-	<i>murE</i>	UDP-N-acetylmuramyl tripeptide synthase
HH1866	1787449	1788087	213	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1493
HH1867	1788096	1788368	91	-		Conserved hypothetical protein, similar to <i>H. pylori</i> HP1492, predicted NifU-like protein
HH1868	1788566	1789564	333	+		Putative C4-dicarboxylatebinding periplasmic protein
HH1869	1789585	1790199	205	+		Conserved hypothetical protein, similar to <i>Wolinella succinogenes</i> putative small integral C4-dicarboxylate membrane transport protein
HH1870	1790213	1791484	424	+		Conserved hypothetical protein, similar to <i>Wolinella succinogenes</i> putative large integral C4-dicarboxylate

					membrane transport protein
HH1871	1791499	1793085	529	+	Phosphate permease
HH1872	1793147	1794466	440	+	Conserved hypothetical protein, similar to <i>H. pylori</i> HP1490, predicted membrane-associated
HH1873	1794461	1795480	340	-	<i>hemE</i> Uroporphyrinogen decarboxylase
HH1874	1795498	1796520	341	-	<i>asd</i> Aspartate-semialdehyde dehydrogenase
HH1875	1796869	1799037	723	-	<i>cstA</i> Carbon starvation protein A homolog