

Supplementary Table 1 Information of 120 *Helicobacter pylori* strains

Sample ID	Sex	Endoscopic diagnosis	MLST population structure	<i>cag</i> PAI empty site	EPIYA pattern	EPIYA-A motif	First CM motif	Second CM motif	Third CM motif	CM pattern
DR4	M	DU	hpAfrica1 (hspWAfrica)		ABC	GLKNGKDKGPEEPIYAQVNK	FPLKRHDKVEDLSKVG	FPLRRSAKVEDLSKVG		W-Af1
DR5	F	GU	hpAfrica1 (hspWAfrica)		ABC	GLKNEPIYAKVNK	FLLKRHDKVDNLSKVG	FPLKRHDKVDDL SKVG		W-W
DR7	F	Gastritis	hpAfrica1 (hspWAfrica)		ABC	GLKNGKDKGPEEPIYAQVNK	FPLKKHAKVDDL SKVG	FPLRRSAKVEDLSKVG		W-Af1
DR8	M	GU	hpAfrica1 [hybrid (hspWAfrica/hpEurope)]		ABC	GLKNEPIYAKVNK	FPLKRHDKVDDL SKVG	FPLKRHDKVDDL SKVG		W-W
DR9	F	DU	hpAfrica1 (hspWAfrica)		ABC	GLKNEPVYAKVNK	FPLKRHDKVEDLSKVG	FPLRRSAKVEDLSKVG		W-Af1
DR10	M	Gastritis	hpAfrica1 (hspWAfrica)		ABC	GLKNGKDKGPEEPIYAQVNK	FPLKRHDKVDDL SKVG	FPLKKHAKVEDLSKVG		W-D
DR14	F	Gastritis	hpEurope (hspEuropeS)		ABC	GLKNEPIYAKVNK	FPLKKHDKVDDL SKVG	FPLKRHDKVDDL SKVG		W-W
DR18	F	Gastritis	hpAfrica1 (hspWAfrica)		ABC	GLKNGKDKGPEEPIYAQVNK	FPLKRHDKVDDL SKVG	FPLRRSAKVDDL SKVG		W-Af1
DR20	M	DU	hpEurope (hspEuropeS)	Positive						
DR30	F	Gastritis	hpEurope (hspEuropeS)	Positive						
DR32	M	Gastritis	hpEurope (hspEuropeS)	Positive						
DR39	F	Gastritis	hpAfrica1 (hspWAfrica)		ABC	GLKNEPIYAQVNK	FPLKRHDKVDDL SKVG	FPLRRSTKVEDLSKAG		W-Af1
DR43	F	Gastritis	hpEurope (hspEuropeS)		ABC	GLKNGKDKGPEEPIYAQVNK	FPLKKHAKVEDLSKVG	FPLRRSAKVEDLSKVG		D-Af1
DR44	F	Gastritis	hpAfrica1 (hspWAfrica)		ABC	GLKNGKDKGPEEPIYAQVNK	FPLKRHDKVDDL SKVG	FPFRRSDKVEDLSKVG		W-Af1
DR48	M	GU	hpAfrica1 (hspWAfrica)		ABC	GLKNGKDKGPEEPIYAQVNK	FPLKRHDKVEDLSKVG	FPLRRSAKVEDLSKVG		W-Af1
DR49	M	Gastritis	hpEurope (hspEuropeS)		ABCC	GLKNEPIYAQVNK	FPLKKHDKVEDLSKVG	FPLRRSAKVEDLSKVG	FPLRRSAKVEDLSKVG	W-Af1-Af1
DR50	F	GU	hpAfrica1 [hybrid (hspWAfrica/hpEurope)]		ABC	GLKNEPIYAKVNK	FPLKRHDKVDDL SKVG	FPLKRHDKVDDL SKVG		W-W
DR51	M	Gastritis	hpEurope (hspEuropeS)		AC	GLKNEPIYTQVAK	FPLKRHDKVDDL SKVG	FPLKKHAKVEDLSKVG		W-D
DR52	F	Gastritis	hpAfrica1 (hspWAfrica)	Positive						
DR57	M	Gastritis	hpAfrica1 [hybrid (hspWAfrica/hpEurope)]		ABC	GLKNGKDKGPEEPIYAQVNK	FPLKRHAKVDDL SKVG	FPLRRSAKVEDLSKVG		W-Af1
DR60	F	GU, DU	hpEurope (hspEuropeS)	Positive						
DR62	F	Gastritis	hpAfrica1 [hybrid (hspWAfrica/hpEurope)]		ABC	GLKNEPIYAKVNK	FPLKKHAKVDDL SKVG	FPLKRHDKVDDL SKVG		W-W

DR63	F	Gastritis	hpEurope (hspEuropeS)	ABC	GLKNEPIYAKVNK	FPLKRHDKVEDLSKVG	FPLKRHDKVDDL SKVG		W-W
DR64	M	GU	hpAfrica1 (hspWAfrica)	ABCC	GLKNEPIYAKVNK	FPLKRHDKVEDLSKVG	FPLKKHDKVDDL SKVG	FPLKRHDKVDDL SKVG	W-W-W
DR71	M	Gastritis	hpAfrica1 [hybrid (hspWAfrica/hpEurope)]	ABC	GLKNGKDKGPEEPIYAQV NK	FPLKRHDKVEDLSKVG	FPLRRSAKVEDLSKVG		W-Af1
DR73	F	Gastritis	hpAfrica1 (hspWAfrica)	ABC	GLKNEPIYAKVNK	FPLKRHDKVDDL SKVG	FPLKRHDKVDDL SKVG		W-W
DR75	F	Gastritis	hpEurope (hspEuropeS)	Positive					
DR76	F	Gastritis	hpAfrica1 (hspWAfrica)		ABC	GLKNGKDKGPEEPIYAQV NK	FPLRRSDKVEDLSKVG		W-Af1
DR79	F	GU	hpAfrica1 (hspWAfrica)		ABC	GLKNGKDKGPEEPIYAQV NK	FPLKRHDKVEDLSKVG	FPLRRSAKVEDLSKVG	W-Af1
DR81	F	Gastritis	hpAfrica1 [hybrid (hspWAfrica/hpEurope)]		ABC	GLKNEPIYAQV NK	FPLKRHDKVDDL SKVG	FPLKRHDKVDDL SKVG	W-W
DR84	F	Gastritis	hpAfrica1 [hybrid (hspWAfrica/hpEurope)]	ABCC	GLKNEPIYAKVNK	FPLKRHDKVDDL SKVG	FPLKRHDKVDDL SKVG	FLLKRHDKVDDL SKVG	W-W-W
DR86	M	Gastritis	hpEurope (hspEuropeS)	ABC	GLKNEPIYAKVNK		FPLKRYDKVDNL SKVG		-W
DR87	F	Gastritis	hpAfrica1 (hspWAfrica)	ABC	GLKNGKDKGPEEPIYAQV NK	FPLRRSDKVDDL SKVG	FPLRRSDKVDNL SKVG		D-D
DR88	M	Gastritis	hpAfrica1 (hspWAfrica)	ABC	GLKNEPIYAKVNK		FPLKRYDKVDNL SKVG		-W
DR89	F	Gastritis	hpAfrica1 (hspWAfrica)	AB	GLKNGKDKGPEEPIYAQV NK	FPLKRHDKVEDLSKVG			W-
DR91	F	Gastritis	hpAfrica1 (hspSAfrica)	AABC	GLKNEPIYAQV NK	FPLKKHAKVEDLSKVG	FPLRRSAKVEDLSKVG		D-Af1
DR92	F	Gastritis	hpAfrica1 (hspWAfrica)	ABC	GLKNEPIYAKVNK	FPLKRHDKVEDLSKVG	FPLKRS AKVDDL SKVG		W-D
DR94	F	GU	hpAfrica1 [hybrid (hspWAfrica/hpEurope)]	ABC	GLKNEPIYAQV NK	FPLKRHDKVDDL SKVG	FPLKRHDKVDDL SKVG		W-W
DR95	F	Gastritis	hpEurope (hspEuropeS)	ABC	GLKNGKDKGPEEPIYAQV NK	FPLKRHDKVDDL SKVG	FPLKRHDKVDDL SKVG		W-W
DR96	F	Gastritis	hpAfrica1 (hspWAfrica)	ABC	GLKNEPIYAKVNK	FPLKRHDKVDDL SKVG	FPLKRHDKVDDL SKVG		W-W
DR99	M	Gastritis	hpEurope (hspEuropeS)	Positive					
DR100	F	DU	hpAfrica1 [hybrid (hspWAfrica/hpEurope)]		ABC	GLKNGKDKGPEEPIYAQV NK	FPLKKHDKVDDL SKVG	FPLKRHDKVDDL SKVG	W-W
DR103	F	Gastritis	hpAfrica1 [hybrid (hspWAfrica/hpEurope)]		ABC	GLKNEPIYAKVNK	FPLKRHDKVEDLSKVG	FPLRRSAKVEDLSKVG	W-Af1
DR104	F	Gastritis	hpAfrica1 (hspWAfrica)		ABC	GLKNGKDKGPEEPIYAQV NK	FPLKKHDKVEDLSKVG	FPLRRSAKVEDLSKVG	W-Af1
DR105	F	Gastritis	hpEurope (hspEuropeS)	ABBC	GLKNEPIYAKVNK	FPLKRHDKVDDL SKVG	FPLKKHAKVDDL SKVG		W-W

DR112	F	Gastritis	hpAfrica1 [hybrid (hspWAfrica/hpEurope)]		ABC	GLKNEPIYAQVNK	FPLKRHDKVDDLSKVG	FPLKRHDKVDDLSKVG		W-W
DR115	F	Gastritis	hpEurope (hspEuropeS)	Positive						
DR116	F	Gastritis	hpEurope (hspEuropeS)		ABC	GLKNEPIYAKVNK	FPLKRHDKVDDLSKVG	FPLKRHDKVDDLSKVG		W-W
DR117	F	Gastritis	hpAfrica1 (hspWAfrica)	Positive						
DR118	F	Gastritis	hpAfrica1 (hspWAfrica)		ABC	GLKNEPVYAKVNK	FPLKRHDKVDDLSKVG	FPLKRHDKVDDLSKVG		W-W
DR126	F	GU	hpAfrica1 (hspWAfrica)		ABC	GLKNGKDKGPEEPIYAQVNK	FPLKRHDKVDDLSKVG	FPLRRSAKVEDLSKVG		W-Af1
DR130	M	DU	hpEurope (hspEuropeS)	Positive						
DR134	F	DU	hpAfrica1 (hspWAfrica)		ABC	GLKNGKDKGPEEPIYAQVNK	FPLKRHDKVDDLSKVG	FPLRRSAKVEDLSKVG		W-Af1
DR137	M	Gastritis	hpEurope (hspEuropeS)	Positive						
DR142	F	Gastritis	hpAfrica1 (hspWAfrica)		ABC	GLKNEPIYAKVNK	FPLKRHDKVDDLSKVG	FPSKKHAKVEDLSKVG		W-D
DR143	M	Gastritis	hpEurope (hspEuropeS)	Positive						
DR146	F	Gastritis	hpAfrica1 (hspWAfrica)		ABC	GLKNGKDKGPEEPIYAQVNK	FPLKKHAKVEDLSEVG	FPLRRSAKVDDLSKVG		D-Af1
DR147	F	GU	hpAfrica1 (hspWAfrica)	Positive						
DR148	F	Gastritis	hpEurope (hspEuropeN)	Positive						
DR150	M	Gastritis	hpEurope (hspEuropeS)	Positive						
DR151	F	Gastritis	hpEurope (hspEuropeS)		ABC	GLKNEPIYAKVNK	FPLKRHDKVDDLSKVG	FPLKRHDKVDDLSKVG		W-W
DR152	F	Gastritis	hpAfrica1 (hspWAfrica)		ABC	GLKNEPVYAQVNK	FPLKRHDKVDDLSKVG	FPLRRSAAVDDLSKVG		W-E
DR153	F	Gastritis	hpAfrica1 (hspWAfrica)		ABC	GLKNGKDKGPEEPIYAQVNK	FPLKKHDKVEDLSKVG	FPLKKHAKVEDLSKVG		W-D
DR157	M	Gastric cancer	Undetermined	Positive						
DR2_2016	F	GU	hpEurope (hspEuropeS)	Positive						
DR4_2016	M	Gastritis	hpEurope (hspEuropeS)	Positive						
DR6_2016	F	Gastritis	hpAfrica1 (hspWAfrica)		ABC	GLKNEPVYAKVNK	FPLKRHDKVDDLSKVG	FPLKRHDKVDDLSKVG		W-W
DR7_2016	M	Gastritis	hpAfrica1 [hybrid (hspWAfrica/hpEurope)]		ABC	GLKNEPIYAKVNK	FPLKRHDKVDDLSKVG	FPLKKHAKVDDLSKVG		W-W
DR8_2016	F	Gastritis	hpAfrica1 [hybrid (hspWAfrica/hpEurope)]		ABC	GLKNGKDKGPEEPIYAKVNK	FPLKRHDKVDDLSKVG	FPLKRHDKVDDLSKVG		W-W
DR9_2016	F	Gastritis	hpEurope (hspEuropeS)	Positive						
DR12_2016	F	Gastritis	hpEurope (hspEuropeS)	Positive						

DR15_2016	F	Gastritis	hpAfrica1 (hspWAfrica)		ABC	GLKNGKDKGPEEPIYAQVNK	FPLKRHAKVDDLSKVG	FPLRRSAKVEDLSKVG		W-Af1
DR16_2016	M	Gastritis	hpAfrica1 (hspSAfrica)		ABC	GLKNGKDKGPEEPIYAQVNK	FPLKRHAKVDDLSKVG	FPLRRSAKVEDLSKVG		W-Af1
DR19_2016	F	GU	hpEurope (hspEuropeS)		AC	GLKNEPIYTQVAK	FPLKRHDKVDDLSKVG	FPLKKHAKVEDLSKVG		W-D
DR21_2016	M	DU	hpEurope (hspEuropeS)		ABCC	GLKNEPIYAKVNK	FPLKKHDKVDDLSKVG	FPLRRSAKVEDLSKVG	FPLRRSAKVEDLSKVG	W-Af1-Af1
DR22_2016	F	Gastritis	hpEurope (hspEuropeS)	Positive						
DR23_2016	F	Gastritis	hpAfrica1 (hspWAfrica)		ABC	GLKNGKDKGPEEPIYAQVNK	FPLKRHDKVEDLSKVG	FPLRRGAKVEDLSKVG		W-Af1
DR24_2016	F	DU	hpEurope (hspEuropeS)	Positive						
DR25_2016	F	Gastritis	hpAfrica1 (hspWAfrica)		ABC	GLKNEPIYAQVNK	FPLKRHDKVDDLSKVG	FPLKRSKVEDLSKVG		W-Af1
DR26_2016	F	Gastritis	hpAfrica1 (hspSAfrica)		ABC	GLKNEPIYAKVNK	FPLKRHDKVDDLSKVG	FPLKRHDKVDDLSKVG		W-W
DR28_2016	M	Gastritis	hpEurope (hspEuropeS)		ABC	GLKNEPIYAKVNK	FPLKRHDKVDDLSKVG	FPLKRHDKVDDLSKVG		W-W
DR29_2016	F	Gastritis	hpEurope (hspEuropeN)	Positive						
DR31_2016	F	Gastritis	hpAfrica1 (hspWAfrica)		ABC	GLKNEPIYAKVNK	FPLKRHDKVDDLSKVG	FPLKRHDKVDDLSKVG		W-W
DR35_2016	F	Gastritis	hpAfrica1 (hspWAfrica)		ABC	GLKNGKDKGPEEPIYAQVNK	FPLKRHDKVEDLSKVG	FPLKRSKVEDLSKVG		W-D
DR37_2016	F	GU	hpEurope (hspEuropeN)		ABCC	GLKNEPIYAKVNK	FPLKRHDKVDDLSKVG	FPLKRHDKVDDLSKVG	FPLKRHDKVDDLSKVG	W-W-W
DR39_2016	F	Gastritis	hpEurope (hspEuropeS)	Positive						
DR42_2016	F	Gastritis	hpAfrica1 (hspWAfrica)		ABC	GLKNGKDKGPEEPIYAQVNK	FPLKKHAKVEDLSKVG	FPLRKS KVEDLSKVG		D-Af1
DR43_2016	M	Gastritis	hpEurope (hspEuropeS)		ABC	GLKNEPIYAKVNK	FPLKRHDKVDDLSKVG	FPLKRHDKVDDLSKVG		W-W
DR45_2016	F	Gastritis	hpEurope (hspEuropeS)	Positive						
DR46_2016	F	Gastritis	hpEurope (hspEuropeS)	Positive						
DR47_2016	F	Gastritis	hpAfrica1 (hspWAfrica)		ABC	GLKNGKDKGPEEPIYAQVNK	FPLKRHDKVEDLSKVG	FPLRRSAKVEDLSKVG		W-Af1
DR49_2016	F	Gastritis	hpEurope (hspEuropeS)		ABC	GLKNEPIYAKVNK	FPLKRHDKVDDLSKVG	FPLKKHAKVEDLSKVG		W-D
DR51_2016	M	Gastritis	hpEurope (hspEuropeS)	Positive						
DR52_2016	F	Gastritis	hpEurope (hspEuropeS)		ABCC	GLKNEPIYAKVNK	FPLKRHDKVDDLSKVG	FPLKRHDKVDDLSKVG	FPLKRHDKVDDLSKVG	W-W-W
DR55_2016	F	Gastritis	hpEurope (hspEuropeS)		ABC	GLKNEPIYAKVNK	FPLKRHDKVDDLSKVG	FPLKRHDKVDDLSKVG		W-W
DR57_2016	F	Gastritis	hpEurope (hspEuropeS)		ABC	GLKNEPIYAQVNK	FPLKRHDKVEDLSKVG	FPLRRSAKVEDLSKVG		W-Af1
DR58_2016	F	Gastritis	hpAfrica1 (hspWAfrica)	Positive						
DR59_2016	M	Gastritis	hpAfrica1 (hspWAfrica)		ABC	GLKNEPIYAKVNK	FPLKRHDKVDDLSKVG	FPLKRHDKVDDLSKVG		W-W
DR60_2016	F	Gastritis	hpAfrica1 (hspWAfrica)		ABC	GLKNEPIYAQVNK	FPLKRHDKVDDLSKVG	FPLKRSKVEDLSKVG		W-Af1
DR64_2016	F	DU	hpAfrica1 (hspWAfrica)		ABCC	GLKNEPIYAKVNK	FPLKRHDKVDDLSKVG	FPLKRHDKVDDLSKVG	FPLKRHDKVDDLSKVG	W-W-W

DR66_2016	F	DU	hpEurope (hspEuropeS)	Positive								
DR69_2016	F	Gastritis	hpEurope (hspEuropeS)	Positive								
DR71_2016	F	Gastritis	hpAfrica1 (hspWAfrica)	Positive								
DR72_2016	M	GU	hpEurope (hspEuropeS)	Positive								
DR73_2016	F	Gastritis	hpAfrica1 [hybrid (hspWAfrica/hpEurope)]		ABC	GLKNGKDKGPEEPIYAQVNK	FPLKRHAKVDDLSKVG	FPLRRSAKVEDLSKVG				W-Af1
DR75_2016	M	Gastritis	hpEurope (hspEuropeS)		ABC	GLKNEPIYAKVNK	FPLKRHDKIDDLSKVG	FPLRRSAKVEDLSKAG				W-Af1
DR76_2016	M	GU	hpAfrica1 (hspWAfrica)		ABC	GLKNEPIYAKVNK	FPLKRHDKVEDLSKVG	FPLKRHDKVEDLSKVG				W-W
DR77_2016	F	Gastritis	hpAfrica1 [hybrid (hspWAfrica/hpEurope)]		ABC	GLKNGKDKGPEEPIYAQVNK	FPLKRHDKVEDLSKVG	FPLRRSAKVEDLSKAG				W-Af1
DR81_2016	F	Gastritis	hpEurope (hspEuropeN)	Positive								
DR82_2016	F	Gastritis	hpAfrica1 (hspWAfrica)		ABC	GLKNEPVYAKVNK	FPLKRHDKVDDLSKVG	FPLKRHDKVDDLSKVG				W-W
DR84_2016	M	Gastritis	hpEurope (hspEuropeS)		ABC	GLKNEPIYAKVNK	FPLKRHDKVDDLSKVG	FPLKKHAKVEDLSKVG				W-D
DR87_2016	M	DU, GU	hpAfrica1 [hybrid (hspWAfrica/hpEurope)]		ABC	GLKNEPIYAQVNK	FPLKRHDKVDDLSKVG	FPLRRSAKVEDLSKAG				W-Af1
DR88_2016	F	Gastritis	hpAfrica1 [hybrid (hspWAfrica/hpEurope)]		ABC	GLKNEPIYAKVNK	FPLKRHDKVDDLSKVG	FPLKKHAKVEDLSKVG				W-D
DR89_2016	F	Gastritis	hpAfrica1 (hspSAfrica)		ABC	GLKNEPIYAQVNK	FPLKKHAKVEDLSKAG	FPLRRSAKVEDLSKVG				D-Af1
DR94_2016	F	Gastritis	hpAfrica1 (hspWAfrica)	Undetermined								
DR95_2016	F	Gastritis	hpAfrica1 (hspWAfrica)	Positive								
DR96_2016	M	Gastritis	hpAfrica1 (hspSAfrica)		ABC	GLKNGKDKGPEEPIYAQVNK	FPLKRHDKVEDLSKVG	FPLRRSAKVEDLSKAG				W-Af1
DR97_2016	F	Gastritis	hpEurope (hspEuropeS)		ABC	GLKNEPIYAKVNK	FPLKRHDKVDDLSKVG	FPLKRHDKVDDLSKVG				W-W
DR98_2016	M	Gastritis	hpEurope (hspEuropeS)	Positive								
DR100_2016	M	Gastritis	hpEurope (hspEuropeS)		ABC	GLKNEPIYAKVNK	FPLKRHDKVDDLSKVG	FPLKRHDKVDDLSKVG				W-W

MLST: Multilocus sequence typing; PAI: Pathogenicity island; EPIYA: Glu-Pro-Ile-Tyr-Ala; CM: CagA-multimerization; M: Male; F: Female; DU: Duodenal ulcer; GU: Gastric ulcer; W-Af1: Strains with one Western and one Africa1 CM motif in their CagA; W-W: Strains with two Western CM motifs in their CagA; W-D: Strains with one Western and one Different CM motif in their CagA; D-Af1: Strains with one Different and one Africa1 CM motif in their CagA; W-Af1-Af1: Strains with one Western and two Africa1 CM motifs in their CagA; W-W-W: Strains with three Western CM motifs in their CagA; -W: Indicates that only one Western CM motif was observed following the Glu-Pro-Ile-Tyr-Ala (EPIYA)-C motif, in the absence of a CM motif before the EPIYA-C motif; D-D: Strains with two Different CM motifs in their CagA; W-: Indicates that only one Western CM motif was observed before the EPIYA-C motif, in the absence of a CM motif following the EPIYA-C motif; W-E: Strains with one Western and one East Asian CM motif in their CagA.

Supplementary Table 2 List of strains containing Western-CagA multimerization, East Asian-CagA multimerization, African 1-CagA multimerization and Different-CagA multimerization peptide sequences found using GenBank BLAST search

0	Type	Number of strains observed in the Dominican Republic			Number of strains with perfectly sequence match found in GenBank (search done June 2020)
		First motif	Second motif	Third motif	
FPLKRHDKVDDLSKVG	W-CM	45	31	4	Undetermined ¹
FPLKRHDKVEDLSKVG	W-CM	17	1	0	Undetermined ¹
FPLKRHAKVDDLSKVG	W-CM	4	0	0	South Africa1
					Philippines1
FPLKKHDKVEDLSKVG	W-CM	3	2	0	Senegal9
					Thailand7
					Cambodia5
					Greece3
					Bangladesh2
					Colombia2
					Malaysia2
					Myanmar2
					Switzerland2
					Australia1
					Gambia1
					Germany1
					India1
					Mexico1
					United States1
FPLKKHDKVDDLSKVG	W-CM	3	1	0	Undetermined ¹
FPLKKHAKVDDLSKVG	W-CM	2	0	0	Mexico11
					Colombia9
					Senegal4
					Spain2

						Switzerland	2					
						United States	2					
						El Salvador	1					
						India	1					
						Venezuela	1					
FLLKRHDKVDNLSKVG	W-CM	1	0	0		0						
FPLKRHDKIDDLKVG	W-CM	1	0	0		1						
						Cambodia	1					
						Cuba	1					
						Japan	1					
						Myanmar	1					
						FPLKRYDKVDNLSKVG	W-CM	0	2	0		1
FLLKRHDKVDDLKVG	W-CM	0	0	1		4						
						United States	4					
						Australia	3					
						Canada	2					
						Mexico	2					
						China	1					
						Greece	1					
						India	1					
						Iran	1					
						Italy	1					
						Pakistan	1					
						South Korea	1					
						Switzerland	1					
						FPLRRSAAVDDLKVG	E-CM	0	1	0		2
						China	1					
						Colombia	1					
Gambia	1											
Japan	1											
United States	1											

FPLRRSAKVEDLSKVG	Af1-CM	0	21	2	Senegal	18
					United States	16
					South Africa	15
					Colombia	5
					Australia	3
					France	3
					Mexico	3
					Gambia	2
					Cuba	1
FPLRRSAKVEDLSKAG	Af1-CM	0	4	0	Senegal	2
					United States	2
					Colombia	1
FPLKRSKVEDLSKVG	Af1-CM	0	2	0	Senegal	14
					Gambia	5
					South Korea	2
FPLRRSAKVDDLSKVG	Af1-CM	0	2	0	United States	5
					Gambia	4
					Senegal	4
					Australia	1
					Colombia	1
					United Kingdom	1
					Venezuela	1
FPLRRSTKVEDLSKAG	Af1-CM	0	1	0		0
FPLRRGAKVEDLSKVG	Af1-CM	0	1	0	Australia	1
FPLRKSAKVEDLSKVG	Af1-CM	0	1	0		0
FPFRRSDKVEDLSKVG	Af1-CM	0	1	0		0
FPLRRSDKVEDLSKVG	Af1-CM	0	1	0		0
FPLKKHAKVEDLSKVG	D-CM	3	7	0	Senegal	13
					Colombia	10

						Gambia	7
						United States	6
						Australia	5
						France	3
						South Africa	3
						Greece	2
						Canada	1
						Costa Rica	1
						Japan	1
						Mexico	1
						Nicaragua	1
						Nigeria	1
						South Korea	1
						Venezuela	1
FPLKRSAKVDDLSKVG	D-CM	0	2	0		Senegal	3
						Gambia	2
						Switzerland	1
FPLRRSDKVDDLSKVG	D-CM	1	0	0			0
FPLKKHAKVEDLSEVG	D-CM	1	0	0			0
FPLKKHAKVEDLSKAG	D-CM	1	0	0		Gambia	4
						Senegal	4
FPLRRSDKVDNLSKVG	D-CM	0	1	0			0
FPSKKHAKVEDLSKVG	D-CM	0	1	0			0

¹It was difficult to create the list, because 100 or more strains were matched in the BLAST search. CM: CagA multimerization; W-CM: Western CM motif; E-CM: East-Asian CM motif; Af1-CM: Africa1-CM motif; D-CM: Different CM motif.

Supplementary Table 3 Histological scores according to the CagA multimerization motif patterns in *Helicobacter pylori* strains

	W-Af1, W-Af1-Af1	W-W, W-W-W	P value
Number of strains	29	35	
Antrum			
Activity	1.34 ± 0.72	1.23 ± 0.65	0.68
Inflammation	1.66 ± 0.77	1.69 ± 0.58	0.84
Atrophy	0.93 ± 0.65	1.03 ± 0.57	0.52
Intestinal metaplasia	0.00 ± 0.00	0.09 ± 0.37	0.20
Bacterial density	1.66 ± 0.81	1.49 ± 0.70	0.37
Corpus			
Activity	1.07 ± 0.62	1.00 ± 0.64	0.65
Inflammation	1.26 ± 0.59	1.23 ± 0.49	0.97
Atrophy	0.44 ± 0.51	0.54 ± 0.56	0.53
Intestinal metaplasia	0.00 ± 0.00	0.11 ± 0.53	0.22
Bacterial density	1.67 ± 0.78	1.54 ± 0.74	0.58
OLGA score	1.07 ± 0.55	1.06 ± 0.64	0.79

OLGA: Operative Link on Gastritis Assessment system; W-Af1: Strains with one Western and one Africa1 CagA multimerization (CM) motif in their CagA; W-Af1-Af1: Strains with one Western and two Africa1 CM motifs in their CagA; W-W: Strains with two Western CM motifs in their CagA; W-W-W: Strains with three Western CM motifs in their CagA.

Supplementary Table 4 Association of CagA multimerization motif patterns in *Helicobacter pylori* strains with clinical outcomes

	Endoscopic diagnosis	
	Gastritis	Peptic ulcer
W-W	24	6
W-Af1	20	7
W-D	9	1
D-Af1	5	0
W-W-W	2	3
-W	2	0
D-D	1	0
W-E	1	0
W-Af1-Af1	1	1
W-	1	0
Total	66	18

W-W: Strains with two Western CagA multimerization (CM) motifs in their CagA; W-Af1: Strains with one Western and one Africa1 CM motif in their CagA; W-D: Strains with one Western and one Different CM motif in their CagA; D-Af1: Strains with one Different and one Africa1 CM motif in their CagA; W-W-W: Strains with three Western CM motifs in their CagA; -W: Indicates that only one Western CM motif was observed following the Glu-Pro-Ile-Tyr-Ala (EPIYA)-C motif, in the absence of a CM motif before the EPIYA-C motif; D-D: Strains with two Different CM motifs in their CagA; W-E: Strains with one Western and one East Asian CM motif in their CagA; W-Af1-Af1: Strains with one Western and two Africa1 CM motifs in their CagA; W-: Indicates that only one Western CM motif was observed before the EPIYA-C motif, in the absence of a CM motif following the EPIYA-C motif.