Subjects	Age (y)	Sex	Race	BMI	Alcohol (units/time)	Smoking	Medical history	Medication use	Presenting symptoms	Findings DBE	Findings Pathology
1	50	M	Caucasian	20	4-5 units/month	-	1964: resection of small bowel	Methadone	Blood loss	Multiple polyps in proximal small bowel	Peutz Jeghers Polyps
2	38	F	Caucasian	21	-	15 cigarettes/day	BCRA1 gene mutation	Pancreatic enzymes Eye drops	Diarrhea	-	-
3	44	F	na	na	na	na	-	-	Abdominal pain	-	-
4	61	F	Caucasian	24	3 units/day	-	Atrial fibrillation	Proton pump inhibitor, Antiplatelet drug Paracetamol Acenocoumarol Benzodiazepine	Diarrhea; weight loss	Polyp in proximal duodenum	-
5	26	F	Caucasian	na	-	1-10 cigarettes/day	-	-	Abdominal pain	-	-
6	39	M	Black	na	na	na	Diabetes type 2	Metformin Proton pump inhibitor Antiplatelet drug	Abdominal pain	-	-
7	67	F	Caucasian	16	-	Yes	1997: liver failure based on hepatitis B infection wherefore liver transplantation 2005: osteopenia Mild COPD	Proton pump inhibitor Immunosuppressive (Ciclosporin) Calcium/Vitamin D	Iron deficiency anemia	-	-
8	47	F	Caucasian	15	-	-	Fibromyalgia Endometriosis	Budesonide H_2 antagonist Antispasmodic	Diarrhea; weight loss; abdominal pain	-	-
9	54	M	Caucasian	32	6 units/week	-	Hypertension Cholecystectomy Peripheral arterial disease	-	Diarrhea	Erosive abnormalities in jejunum	Reflux esophagitis
10	53	M	Caucasian	na	2	35	2007:	Antiplatelet drug	Iron deficiency	Venectasia	-

|										
					units/day	cigarettes/day	cerebrovascular accident 80% stenosis of a. carotid	Proton pump inhibitor Cholesterol inhibitor Iron supplement	anemia	
11	50	M	Caucasian	21	2 units/day	23 cigarettes/day	Barrett's esophagus	Cholesterol inhibitor Proton pump inhibitor	Weight loss	Small polyp in colon	-
12	55	M	Caucasian	29	-	23 cigarettes/day	Diabetes type 1 hypertension	Insulin pump Proton pump inhibitor Antiplatelet drug Fludrocortisone ACE inhibitor Cholesterol inhibitor Hydrocortisone	Iron deficiency anemia	-	-
13	74	F	Caucasian	na	na	na	Jejunoileal bypass surgery for obesity	Na	Iron deficiency anemia	Extensive ulcerative abnormalities in distal ileum obstructive mass in cecum	Ulcerative lesion in distal ileum *
14	62	M	na	27	1 unit/day	10 cigarettes/day	Peripheral arterial disease	Antiplatelet drug Proton pump inhibitor Iron supplements Cholesterol inhibitor Tramadol	Iron deficiency anemia	-	-

Supplementary Table 1: Baseline characteristics per individual subject. na = information is not available; - = no specialties, *no biopsies were taken during DBE, the mass was diagnosed as a cecum tumor during follow up endoscopy, m = male, f = female, DBE = double balloon enteroscopy

| Target	Forward	Reverse	Reference
16S	5'-CGGTGGAATACGTTCCCGG-3'	5'-TACGGCTACCTTGTTACGACTT-3'	[1-3]
UreA	5'-ATGAAACTCACCCCAAAAGA-3'	5'-TTCACTTCAAAGAAATGGAAGTGTGA-3'	[4, 5]
VacA S1/S1	5'-ATGGAAATACAACAAACACAC-3'	5'-CTGCTTGAATGCGCCAAAC-3'	Adapted from [6]
ACTB	5'-CTGGAACGGTGAAGGTGACA-3'	5'-AAGGGACTTCCTGTAACAATGCA-3'	[7]

**Supplementary Table S2: Primers used for DNA amplification**
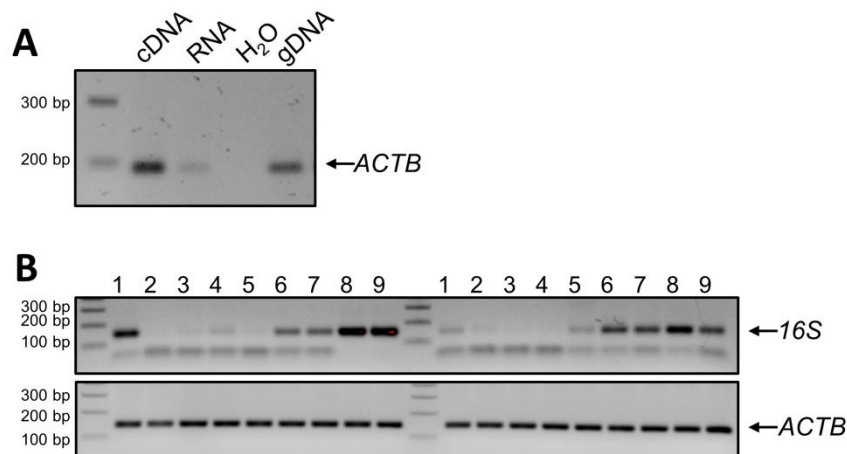
Supplementary Figure S1. Bacterial abundance, unlike human genomic content, fluctuates along the intestinal tract. (A) Human *ACTB* primers identify the gene encoding beta-Actin in both human copyDNA (cDNA) and genomic DNA (gDNA) isolated from human colorectal epithelial cancer cell lines CACO2. **(B)** Two representative examples of comparison of bacterial DNA (16S) and human DNA (ACTB) along the intestinal tract from two subjects (S1 and S2). 1: distal oesophagus; 2: antrum; 3: proximal duodenum; 4: distal jejunum, 5: proximal ileum; 6: distal ileum; 7: ascending colon; 8: descending colon; 9: rectum.
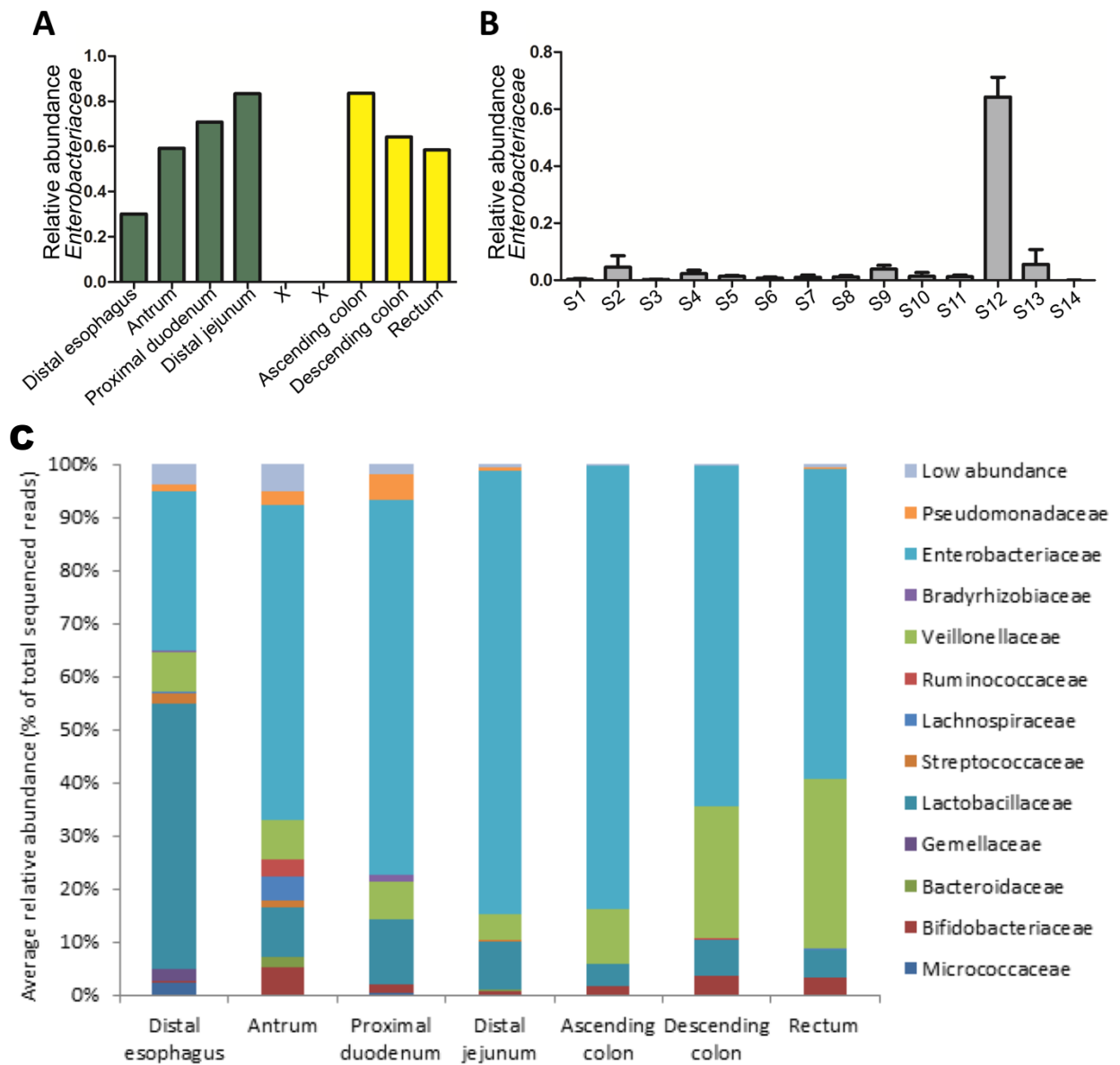
Supplementary Figure S2: Abundance of *Enterobacteriaceae* at family level along the gastrointestinal tract (A) Relative abundance of enterobacteriaceae in mucosal biopsies from a patient with a cecum tumor (S12) is shown. X: missing sample. Green: upper gastrointestinal locations. Yellow: lower gastrointestinal locations (B) Comparison of abundance of *Enterobacteriaceae* at family level between patients, mean±SEM of all the GI locations are shown for subjects 1-14. (C) Most important bacteria at family level (>1% abundance) per location in patient with a cecum tumor.
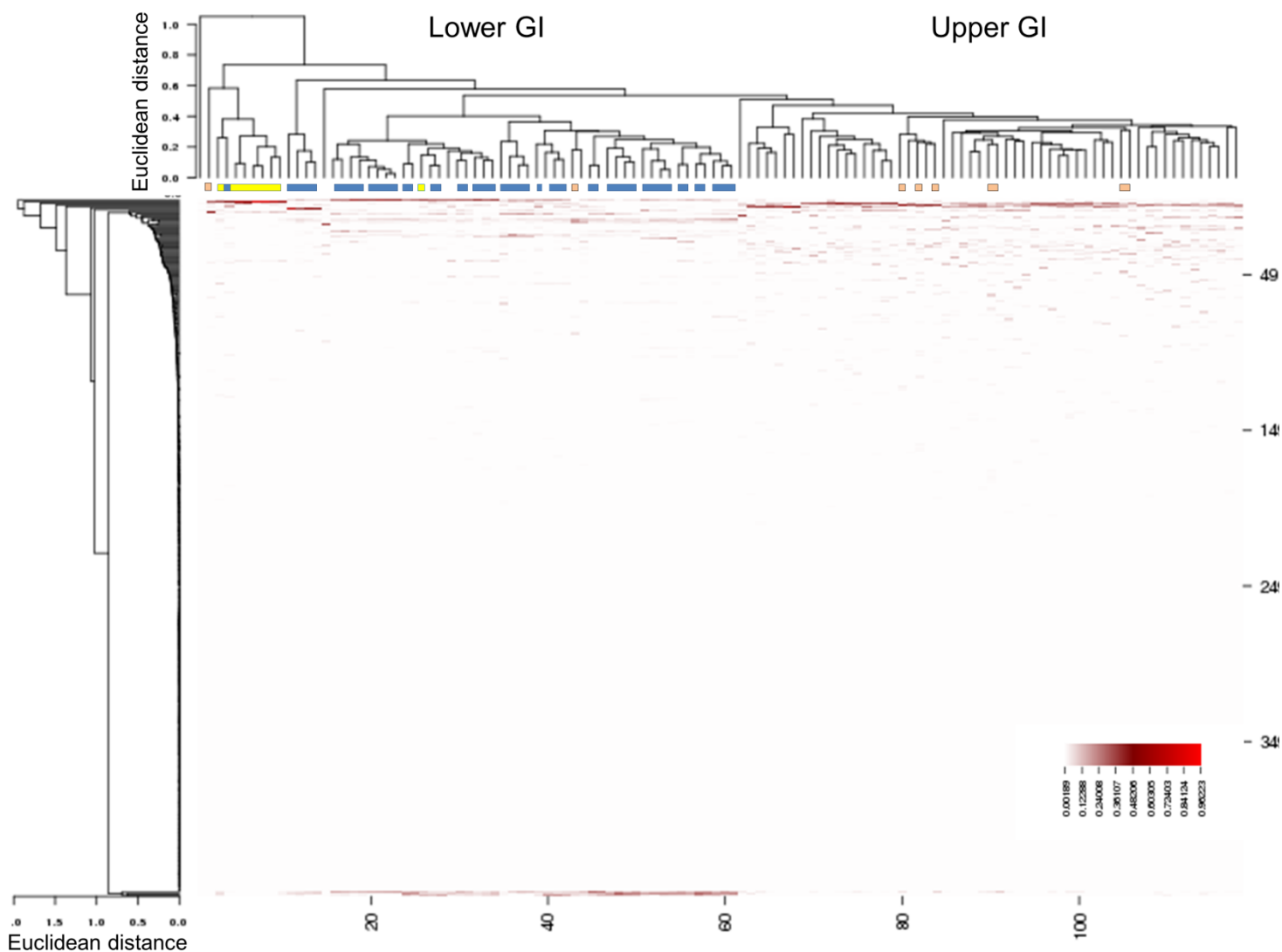
Supplementary Figure S3: Cluster analysis of taxonomy at family level demonstrating the clustering per patients and the upper and lower digestive tract. Samples indicated with yellow box were from patient 12, who was characterized *Enterobacteriaceae* dominance. The utmost left sample was a Helicobacter-dominated sample from patient 6 (indicated in orange). Blue boxes indicate clustering of two or more samples from one individual patient.
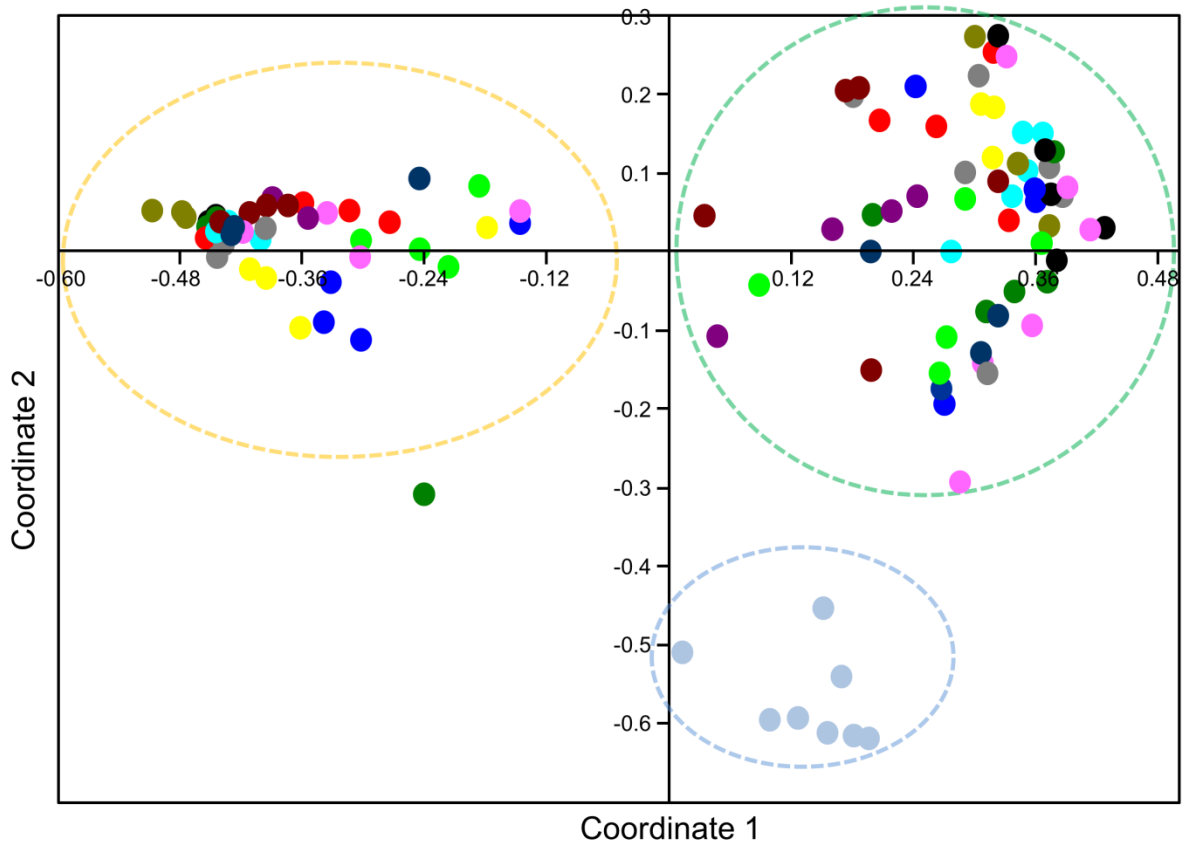
Supplementary Figure S4: Principal coordinate analysis (PCoA) plot of Bray curtis distances. Similar to **Figure 4**, but now the different coloured dots represent different patients. Egg blue dots circled in blue indicate subject S12, dominated by by *Enterobacteriaceae.* In the left cluster (lower GI, circled in yellow), individual patient samples appear to lie closer together than in the right cluster (upper GI, circled in green).
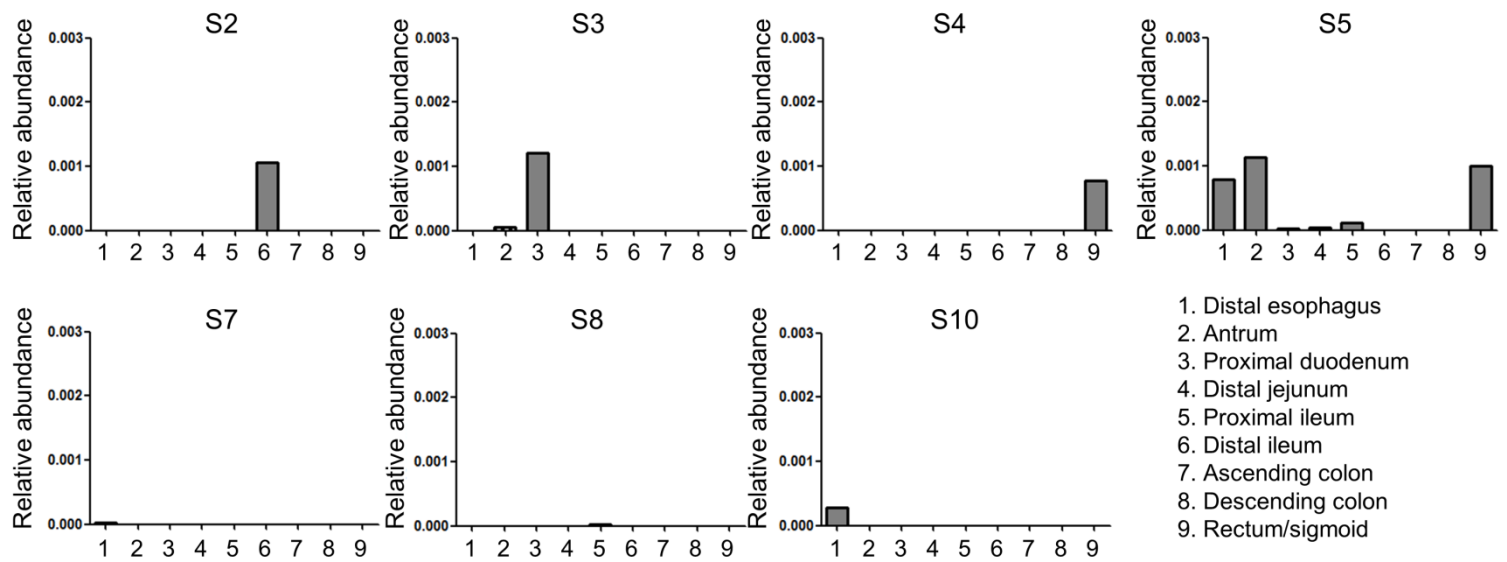
Supplementary Figure S5. Relative abundance of *Helicobacter* species across the different GI sites. Helicobacter was detected in 9 subjects. The relative abundance of *Helicobacteraceae* as detected by sequencing are shown here for individual GI locations of 7 subjects. Subjects S6 and S14 are shown in Figure 7.

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