

Supporting information

Microbial Ecology

Dysbiosis signature of fecal microbiota in colorectal cancer patients

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Table S1 Clinical data of CRC patients

Patient ID	Sex(M/F)	Age	Weight	Height	BMI	Tumor location	FOBT	Tumor classification	Histology	Changes in bowel habits	Tumor size (cm×cm×cm)
C1	M	61	60	1.63	22.6	Rectum	P	T4N1M0	Mod.	No	4×3×2
C3	F	59	54	1.58	21.6	Ascending colon	P	T4NXM1	N/A	No	10×7×6
C4	M	64	70	1.71	23.9	Rectum	P	T3N1M0	Hig.	No	3.5×3×0.8
C5	F	60	58	1.56	23.8	Rectum	N	TisN0M0	Adenoma	No	1×1×1
C6	F	50	65	1.62	24.8	Sigmoid colon	N	T4N1M0	Mod.	Yes	3.5×5×0.5
C7	M	54	72	1.68	25.5	Rectum	P	T3N1M0	Mod.	No	8.5×4.8×1.5
C8	M	50	78	1.71	26.7	Rectum	P	T3N2M0	Mod.	No	4×4×1.2
C9	F	51	67	1.62	25.5	Sigmoid colon	P	T4N0M0	Mod.	No	4.5×3.5×1.2
C10	F	45	50	1.60	19.5	Rectum	N	T2N1M0	Mod.	No	3×2.5×1.0
C11	M	48	67	1.73	22.4	Sigmoid colon	P	T3N1M0	Mod.	Yes	3×1.5×0.7
C12	F	61	69	1.51	30.3	Rectum	N	T2N2M0	Mod.	Yes	4×2.5×1
C13	M	72	68	1.76	22.0	Rectum	P	T3N1M0	Mod.	No	4×4×1
C14	M	56	67	1.60	26.2	Ascending colon	P	T3N0M0	Mod.	No	5×6.5×1.5
C15	M	64	70	1.69	24.5	Rectum	P	T4NXM0	Mod.	No	10×10×10
C16	F	70	50	1.47	23.1	Rectum	P	T3N1M0	Mod.	No	4×3×0.9
C17	M	43	71	1.71	24.3	Transverse colon	P	TisN0M0	Adenoma	No	4×4.2×1.5
C18	M	66	75	1.72	25.4	Ascending colon	P	T3N1M0	Mod.	Yes	8×6×3.5
C19	F	58	49	1.49	22.1	Rectum	P	T4N1M0	Mod.	No	4×5×1.4
C20	F	76	55	1.47	25.5	Sigmoid colon	N	T4N0M0	Mod.	No	3.5×3.5×0.8
Mean	11/9	58.3			24.8						
SD		8.7			3.3						

M male, *F* female, *BMI* body mass index, *FOBT* annual fecal occult blood testing,
Mod. moderately differentiated adenocarcinoma, *Hig.* highly differentiated adenocarcinoma,
N/A Not Available, *SD* Standard Deviation

Table S2 Characteristics of healthy subjects

ID	Sex(M/F)	Age	Weight	Height	BMI
H21	F	59	60	1.62	22.9
H22	F	49	62	1.58	24.8
H23	M	45	65	1.60	25.4
H24	F	49	60	1.63	22.6
H25	F	46	55	1.56	22.6
H26	F	53	65	1.57	26.4
H27	M	55	75	1.70	26.0
H28	M	62	70	1.68	24.8
H29	F	56	50	1.58	20.0
H30	M	51	60	1.70	20.8
H31	F	58	75	1.67	26.9
H32	F	41	45	1.54	19.0
H33	F	57	52	1.57	21.1
H34	M	50	62	1.75	20.2
H35	M	59	65	1.65	23.9
H36	M	54	64	1.62	24.4
H37	M	59	93	1.71	31.8
H38	M	55	69	1.72	23.3
H39	M	52	70	1.70	24.2
H40	M	54	85	1.75	27.8
Mean	11/9	53.2			23.9
SD		5.4			3.0

M male, *F* female, *BMI* body mass index, *SD* Standard Deviation

Table S3 Pyrosequencing data of each subject

CRC patients (n=19)						Healthy subjects (n=20)					
ID	No. sequences	OTU	Chao 1 ^a	Shannon index ^b	Coverage	ID	No. sequences	OTU	Chao 1 ^a	Shannon index ^b	Coverage
C1	10772	1617	3423.728	5.631	0.914	H21	28493	2347	4169.196	5.169	0.959
C3	25579	2981	5463.266	5.752	0.939	H22	9719	915	1575.640	4.220	0.952
C4	18687	1938	3433.564	5.515	0.947	H23	16155	1974	3617.265	5.379	0.936
C5	18182	2035	3447.886	5.726	0.946	H24	10438	1520	2959.444	5.280	0.917
C6	29140	3387	6034.577	5.990	0.940	H25	8133	1231	2406.330	5.339	0.916
C7	23257	2038	3381.213	5.276	0.958	H26	16362	2356	4485.512	5.646	0.922
C8	18717	1412	2384.046	4.422	0.965	H27	13985	1540	2797.446	4.827	0.941
C9	11079	1575	3062.265	5.497	0.922	H28	21898	2597	5362.264	5.667	0.934
C10	18431	2321	4453.877	5.620	0.933	H29	14309	1068	1865.882	4.774	0.966
C11	23107	2325	4307.970	5.731	0.948	H30	20555	2405	4638.896	5.782	0.938
C12	22167	2034	3691.285	5.368	0.955	H31	22231	2875	5087.718	5.827	0.934
C13	16249	1388	2475.154	5.054	0.959	H32	24641	1724	3102.860	4.504	0.966
C14	38327	3138	5280.054	5.666	0.962	H33	17084	1647	3231.711	4.733	0.950
C15	15594	1720	2897.941	5.463	0.949	H34	17710	2128	3833.648	5.598	0.936
C16	28937	2468	3981.400	5.530	0.961	H35	16000	1594	3105.332	5.116	0.947
C17	19300	2225	4204.877	5.687	0.938	H36	21396	1973	3616.694	4.781	0.953
C18	16598	1991	3669.221	5.531	0.938	H37	15212	1822	3174.042	5.189	0.938
C19	23111	3333	6548.897	6.383	0.923	H38	12324	1717	3118.399	5.342	0.925
C20	9191	1637	3127.146	5.791	0.901	H39	19523	2265	4091.760	5.533	0.940
						H40	9773	1041	1842.057	4.830	0.946
mean	20338	2188	3961.493	5.560	0.942	mean	16797	1837	3404.105	5.177	0.941
SD	7068	610	1156.351	0.390	0.017	SD	5382	541	1045.076	0.447	0.014

^a Chao1 indicated the bacterial richness

^b Shannon index indicated the bacterial diversity

CRC colorectal cancer, *OTU* operational taxonomic units, *SD* standard deviation

Table S4 Species of *Fusobacterium*

Patient ID	Score	Similarity (100%)	E-value	Best BLAST hit against species in greengenes database
C1	278	100	5.00E-74	<i>Fusobacterium periodonticum</i>
	268	99.28	5.00E-71	<i>Fusobacterium nucleatum</i>
C2	276	100	2.00E-73	<i>Fusobacterium nucleatum</i>
C3	278	100	5.00E-74	<i>Fusobacterium periodonticum</i>
	268	99.28	5.00E-71	<i>Fusobacterium nucleatum</i>
	224	96.35	6.00E-58	<i>Fusobacterium nucleatum subsp. nucleatum</i>
C4	278	100	5.00E-74	<i>Fusobacterium nucleatum</i>
	278	100	5.00E-74	<i>Fusobacterium periodonticum</i>
C5	276	100	2.00E-73	<i>Fusobacterium necrophorum</i>
	252	97.84	3.00E-66	<i>Fusobacterium nucleatum</i>
	246	97.14	2.00E-64	<i>Fusobacterium periodonticum</i>
C6	278	100	5.00E-74	<i>Fusobacterium periodonticum</i>
	266	99.28	2.00E-70	<i>Fusobacterium nucleatum</i>
C7	280	100	1.00E-74	<i>Fusobacterium nucleatum</i>
	268	100	5.00E-71	<i>Fusobacterium periodonticum</i>
	268	99.28	5.00E-71	<i>Fusobacterium nucleatum subsp. vincentii</i>
	240	97.16	1.00E-62	<i>Fusobacterium nucleatum subsp. nucleatum</i>
C8	278	100	5.00E-74	<i>Fusobacterium nucleatum</i>
C12	278	100	5.00E-74	<i>Fusobacterium nucleatum</i>
	264	100	7.00E-70	<i>Fusobacterium ulcerans</i>
	272	99.29	3.00E-72	<i>Fusobacterium varium</i>

C13	278	100	5.00E-74	<i>Fusobacterium nucleatum</i>
	278	100	5.00E-74	<i>Fusobacterium nucleatum subsp. nucleatum</i>
	272	100	3.00E-72	<i>Fusobacterium periodonticum</i>
C14	264	100	7.00E-70	<i>Fusobacterium gonidiaformans</i>
	276	100	2.00E-73	<i>Fusobacterium nucleatum</i>
	276	100	2.00E-73	<i>Fusobacterium periodonticum</i>
	272	100	3.00E-72	<i>Fusobacterium sp. 3_1_5R</i>
	270	99.29	1.00E-71	<i>Fusobacterium nucleatum subsp. vincentii</i>
	240	97.74	1.00E-62	<i>Fusobacterium russii</i>
C15	216	96.35	2.00E-55	<i>Fusobacterium gonidiaformans</i>
C16	264	100	7.00E-70	<i>Fusobacterium ulcerans</i>
	236	97.12	2.00E-61	<i>Fusobacterium varium</i>
C18	266	99.28	2.00E-70	<i>Fusobacterium nucleatum</i>
C19	264	100	7.00E-70	<i>Fusobacterium mortiferum</i>
	278	100	5.00E-74	<i>Fusobacterium periodonticum</i>
	260	99.26	1.00E-68	<i>Fusobacterium nucleatum</i>
	248	98.58	4.00E-65	<i>Fusobacterium ulcerans</i>
H29	250	100	1.00E-65	<i>Fusobacterium mortiferum</i>
	272	99.29	3.00E-72	<i>Fusobacterium mortiferum</i>
H37	264	100	7.00E-70	<i>Fusobacterium ulcerans</i>
	268	99.28	5.00E-71	<i>Fusobacterium mortiferum</i>