

Making Sense of the Noise: Leveraging Existing 16S rRNA Gene Surveys to Identify Key Community Members in Colorectal Tumors

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Supplemental

Table S1: Bray-Curtis Distance Matrix Analyzed by PERMANOVA for Stool and Tissue

F statistic	R2	P-value	Study	Tumor	Sample Type
0.63	0.059	0.7562	Brim	Adenoma	Stool
1.85	0.021	0.0096	Zeller	Adenoma	Stool
1.04	0.003	0.3788	Baxter	Adenoma	Stool
1.01	0.001	0.3658	Hale	Adenoma	Stool
3.47	0.034	0.0001	Wang	Carcinoma	Stool
1.07	0.107	0.3431	Weir	Carcinoma	Stool
2.18	0.010	0.0033	Ahn	Carcinoma	Stool
2.54	0.028	0.0003	Zeller	Carcinoma	Stool
2.05	0.007	0.0024	Baxter	Carcinoma	Stool
0.97	0.002	0.7163	Hale	Carcinoma	Stool
1.27	0.016	0.0460	Flemer	Carcinoma	Stool
5.03	0.144	0.0001	Lu	Adenoma	Tissue
2.51	0.018	0.0001	Flemer	Adenoma	Tissue
5.27	0.569	0.1000	Lu (Matched)	Adenoma	Tissue
1.75	0.025	0.0069	Sanapareddy	Carcinoma	Tissue
1.07	0.051	0.0995	Burns	Carcinoma	Tissue
6.93	0.029	0.0001	Flemer	Carcinoma	Tissue
1.10	0.064	0.2691	Chen	Carcinoma	Tissue
1.20	0.048	0.2515	Dejea (Matched)	Carcinoma	Tissue
0.43	0.030	0.9816	Geng (Matched)	Carcinoma	Tissue
0.81	0.168	1.0000	Burns (Matched)	Carcinoma	Tissue

Table S2: Alpha Diversity Metrics OR in Tissue

Odds Ratio	Lower Bound	Upper Bound	P-value	Measure	Tumor	Tissue Group
1.82	0.95	3.49	0.07	OTU Richness	Adenoma	Combined
3.25	0.55	19.25	0.19	Shannon Diversity	Adenoma	Combined
3.47	0.68	17.70	0.13	Evenness	Adenoma	Combined
1.53	0.77	3.04	0.22	OTU Richness	Carcinoma	Unmatched
1.43	0.67	3.05	0.35	Shannon Diversity	Carcinoma	Unmatched
1.84	0.54	6.24	0.33	Evenness	Carcinoma	Unmatched
0.43	0.07	2.45	0.34	OTU Richness	Carcinoma	Matched
0.45	0.14	1.43	0.17	Shannon Diversity	Carcinoma	Matched
0.45	0.14	1.43	0.17	Evenness	Carcinoma	Matched

Table S3: OR of Tumor in Stool by Individual Genera with Initial P-Value under 0.05

OR	Lower Bound	Upper Bound	P-value	BH	Lowest Taxa ID	Tumor
1.46	1.14	1.86	2.29e-03	2.20e-01	Clostridium_XIVb	Adenoma
1.77	1.19	2.62	4.48e-03	2.20e-01	Porphyromonas	Adenoma
0.71	0.56	0.91	6.40e-03	2.20e-01	Lachnospiraceae	Adenoma
3.33	1.27	8.72	1.41e-02	2.92e-01	Novosphingobium	Adenoma
1.35	1.06	1.72	1.63e-02	2.92e-01	Bacteroidales	Adenoma
0.75	0.59	0.95	1.92e-02	2.92e-01	Clostridium_XI	Adenoma
0.71	0.54	0.95	1.99e-02	2.92e-01	Clostridiaceae_1	Adenoma
0.68	0.47	0.97	3.56e-02	4.59e-01	Lactococcus	Adenoma
3.20	2.26	4.54	6.73e-11	5.59e-09	Porphyromonas	Carcinoma
7.11	3.84	13.17	4.60e-10	1.91e-08	Peptostreptococcus	Carcinoma
3.07	2.11	4.46	3.80e-09	1.05e-07	Parvimonas	Carcinoma
2.74	1.95	3.85	5.54e-09	1.15e-07	Fusobacterium	Carcinoma
2.15	1.57	2.95	2.20e-06	3.65e-05	Escherichia.Shigella	Carcinoma
1.79	1.33	2.41	1.30e-04	1.80e-03	Enterobacteriaceae	Carcinoma
0.63	0.48	0.83	1.19e-03	1.41e-02	Ruminococcus	Carcinoma
0.65	0.49	0.86	2.94e-03	3.05e-02	Clostridium_XI	Carcinoma
0.60	0.41	0.88	8.98e-03	8.28e-02	Roseburia	Carcinoma
1.45	1.09	1.94	1.17e-02	9.72e-02	Clostridium_XIVb	Carcinoma
0.67	0.48	0.93	1.53e-02	1.15e-01	Clostridiaceae_1	Carcinoma
1.76	1.10	2.82	1.88e-02	1.30e-01	Campylobacter	Carcinoma
2.50	1.14	5.47	2.22e-02	1.42e-01	Anaerococcus	Carcinoma
1.45	1.05	2.00	2.54e-02	1.50e-01	Desulfovibrio	Carcinoma
1.53	1.04	2.26	3.28e-02	1.79e-01	Veillonellaceae	Carcinoma
0.69	0.49	0.97	3.44e-02	1.79e-01	Lachnospiraceae	Carcinoma

Table S4: OR of Tumor in Tissue by Individual Genera with Initial P-Value under 0.05

OR	Lower Bound	Upper Bound	P-value	BH	Lowest Taxa ID	Tumor	Tissue Group
0.27	0.14	0.56	3.23e-04	7.17e-02	Lachnospiraceae	Adenoma	Combined
3.73	1.73	8.05	8.13e-04	7.17e-02	Pseudomonas	Adenoma	Combined
3.69	1.72	7.95	8.30e-04	7.17e-02	Howardella	Adenoma	Combined
2.87	1.48	5.58	1.82e-03	1.18e-01	Rothia	Adenoma	Combined
0.39	0.20	0.77	6.96e-03	3.61e-01	Blautia	Adenoma	Combined
3.42	1.28	9.12	1.42e-02	4.65e-01	Enterobacter	Adenoma	Combined
2.94	1.22	7.10	1.61e-02	4.65e-01	Puniceicoccaceae	Adenoma	Combined
2.27	1.16	4.42	1.62e-02	4.65e-01	Erysipelotrichaceae	Adenoma	Combined
2.27	1.16	4.42	1.62e-02	4.65e-01	Streptococcus	Adenoma	Combined
3.24	1.17	9.00	2.37e-02	6.15e-01	Lactococcus	Adenoma	Combined
3.91	1.17	13.06	2.65e-02	6.24e-01	Micrococcaceae	Adenoma	Combined
2.05	1.05	3.98	3.46e-02	6.66e-01	Shewanella	Adenoma	Combined
2.03	1.05	3.93	3.57e-02	6.66e-01	Phascolarctobacterium	Adenoma	Combined
7.10	1.14	44.44	3.61e-02	6.66e-01	Achromobacter	Adenoma	Combined
0.10	0.01	0.89	3.96e-02	6.66e-01	Anaerostipes	Adenoma	Combined
2.09	1.00	4.35	4.88e-02	6.66e-01	Neisseria	Adenoma	Combined
2.85	1.00	8.12	4.94e-02	6.66e-01	Fusobacterium	Adenoma	Combined
0.35	0.22	0.55	3.96e-06	4.40e-04	Dorea	Carcinoma	Unmatched
5.15	2.02	13.14	5.96e-04	2.88e-02	Weissella	Carcinoma	Unmatched
0.47	0.30	0.73	7.79e-04	2.88e-02	Blautia	Carcinoma	Unmatched
2.13	1.23	3.67	6.57e-03	1.80e-01	Campylobacter	Carcinoma	Unmatched
2.71	1.30	5.67	8.10e-03	1.80e-01	Leptotrichia	Carcinoma	Unmatched
1.94	1.17	3.21	1.05e-02	1.95e-01	Parvimonas	Carcinoma	Unmatched
1.99	1.15	3.45	1.40e-02	2.15e-01	Clostridiaceae_1	Carcinoma	Unmatched
2.34	1.17	4.69	1.64e-02	2.15e-01	Flavobacteriaceae	Carcinoma	Unmatched
0.28	0.10	0.81	1.81e-02	2.15e-01	Ruminococcus2	Carcinoma	Unmatched
0.60	0.39	0.92	1.95e-02	2.15e-01	Clostridium_XIVb	Carcinoma	Unmatched
0.52	0.29	0.92	2.41e-02	2.15e-01	Corynebacterium	Carcinoma	Unmatched
0.43	0.21	0.90	2.45e-02	2.15e-01	Fingoldia	Carcinoma	Unmatched
0.43	0.21	0.90	2.52e-02	2.15e-01	Lachnospiraceae	Carcinoma	Unmatched

OR	Lower Bound	Upper Bound	P-value	BH	Lowest Taxa ID	Tumor	Tissue Group
0.48	0.26	0.92	2.71e-02	2.15e-01	Bacteroides	Carcinoma	Unmatched
1.89	1.04	3.43	3.79e-02	2.80e-01	Clostridium_sensu_stricto	Carcinoma	Unmatched
0.64	0.41	0.98	4.16e-02	2.89e-01	Barnesiella	Carcinoma	Unmatched
3.98	1.19	13.24	2.45e-02	9.26e-01	Fusobacterium	Carcinoma	Matched
7.80	1.20	50.88	3.18e-02	9.26e-01	Campylobacter	Carcinoma	Matched