

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

F statistic	R2	P-value	Study	Comparison
0.63	0.059	0.7562	Brim	Control vs. Adenoma
1.85	0.021	0.0096	Zeller	Control vs. Adenoma
1.04	0.003	0.3788	Baxter	Control vs. Adenoma
1.01	0.001	0.3658	Hale	Control vs. Adenoma
3.47	0.034	0.0001	Wang	Control vs. Carcinoma
1.07	0.107	0.3431	Weir	Control vs. Carcinoma
2.18	0.010	0.0033	Ahn	Control vs. Carcinoma
2.54	0.028	0.0003	Zeller	Control vs. Carcinoma
2.05	0.007	0.0024	Baxter	Control vs. Carcinoma
0.97	0.002	0.7163	Hale	Control vs. Carcinoma
1.27	0.016	0.0460	Flemer	Control vs. Carcinoma

Table S2: Bray-Curtis Distance Matrix Analyzed by PERMANOVA for Tissue

F statistic	R2	P-value	Study	Comparison
5.03	0.144	0.0001	Lu	Control vs. Adenoma
2.51	0.018	0.0001	Flemer	Control vs. Adenoma
5.27	0.569	0.1000	Lu (Matched)	Control vs. Adenoma
1.75	0.025	0.0069	Sanapareddy	Control vs. Carcinoma
1.07	0.051	0.0995	Burns	Control vs. Carcinoma
6.93	0.029	0.0001	Flemer	Control vs. Carcinoma
1.10	0.064	0.2691	Chen	Control vs. Carcinoma
1.20	0.048	0.2515	Dejea (Matched)	Control vs. Carcinoma
0.43	0.030	0.9816	Geng (Matched)	Control vs. Carcinoma
0.81	0.168	1.0000	Burns (Matched)	Control vs. Carcinoma

Table S3: Alpha Diversity Metrics OR in Tissue

Odds Ratio	Lower Bound	Upper Bound	P-value	Measure	Comparison	Tis
1.82	0.95	3.49	0.07	OTU Richness	Control vs. Adenoma	C
3.25	0.55	19.25	0.19	Shannon Diversity	Control vs. Adenoma	C
3.47	0.68	17.70	0.13	Evenness	Control vs. Adenoma	C
1.53	0.77	3.04	0.22	OTU Richness	Control vs. Carcinoma	U
1.43	0.67	3.05	0.35	Shannon Diversity	Control vs. Carcinoma	U
1.84	0.54	6.24	0.33	Evenness	Control vs. Carcinoma	U
0.43	0.07	2.45	0.34	OTU Richness	Control vs. Carcinoma	
0.45	0.14	1.43	0.17	Shannon Diversity	Control vs. Carcinoma	
0.45	0.14	1.43	0.17	Evenness	Control vs. Carcinoma	

Table S4: OR of Tumor in Stool for each Individual Genera with Initial P-Value under 0.05

OR	Lower Bound	Upper Bound	P-value	BH	Lowest Genera ID	Comparison
1.46	1.14	1.86	2.29e-03	2.20e-01	Clostridium XIVb	Control vs. Adenoma
1.77	1.19	2.62	4.48e-03	2.20e-01	Porphyromonas	Control vs. Adenoma
0.71	0.56	0.91	6.40e-03	2.20e-01	Lachnospiraceae unclassified	Control vs. Adenoma
3.33	1.27	8.72	1.41e-02	2.92e-01	Novosphingobium	Control vs. Adenoma
1.35	1.06	1.72	1.63e-02	2.92e-01	Bacteroidales unclassified	Control vs. Adenoma
0.75	0.59	0.95	1.92e-02	2.92e-01	Clostridium XI	Control vs. Adenoma
0.71	0.54	0.95	1.99e-02	2.92e-01	Clostridiaceae 1 unclassified	Control vs. Adenoma
0.68	0.47	0.97	3.56e-02	4.59e-01	Lactococcus	Control vs. Adenoma
3.20	2.26	4.54	6.73e-11	5.59e-09	Porphyromonas	Control vs. Carcinoma
7.11	3.84	13.17	4.60e-10	1.91e-08	Peptostreptococcus	Control vs. Carcinoma
3.07	2.11	4.46	3.80e-09	1.05e-07	Parvimonas	Control vs. Carcinoma

OR	Lower Bound	Upper Bound	P-value	BH	Lowest Genera ID	Comparison
2.74	1.95	3.85	5.54e-09	1.15e-07	Fusobacterium	Control vs. Carcinoma
2.15	1.57	2.95	2.20e-06	3.65e-05	Escherichia.Shigella	Control vs. Carcinoma
1.79	1.33	2.41	1.30e-04	1.80e-03	Enterobacteriaceae unclassified	Control vs. Carcinoma
0.63	0.48	0.83	1.19e-03	1.41e-02	Ruminococcus	Control vs. Carcinoma
0.65	0.49	0.86	2.94e-03	3.05e-02	Clostridium XI	Control vs. Carcinoma
0.60	0.41	0.88	8.98e-03	8.28e-02	Roseburia	Control vs. Carcinoma
1.45	1.09	1.94	1.17e-02	9.72e-02	Clostridium XIVb	Control vs. Carcinoma
0.67	0.48	0.93	1.53e-02	1.15e-01	Clostridiaceae 1 unclassified	Control vs. Carcinoma
1.76	1.10	2.82	1.88e-02	1.30e-01	Campylobacter	Control vs. Carcinoma
2.50	1.14	5.47	2.22e-02	1.42e-01	Anaerococcus	Control vs. Carcinoma
1.45	1.05	2.00	2.54e-02	1.50e-01	Desulfovibrio	Control vs. Carcinoma
1.53	1.04	2.26	3.28e-02	1.79e-01	Veillonellaceae unclassified	Control vs. Carcinoma

	Lower	Upper				
OR	Bound	Bound	P-value	BH	Lowest Genera ID	Comparison
0.69	0.49	0.97	3.44e-02	1.79e-01	Lachnospiraceae unclassified	Control vs. Carcinoma

Table S9: OR of Adenoma in Tissue for each Individual Genera with Initial P-Value under 0.05

OR	Lower Bound	Upper Bound	P-value	BH	Lowest Genera ID	Comparison	Tissue Group
0.27	0.14	0.56	3.23e-04	7.17e-02	Lachnospiraceae	Control vs. Adenoma	Combined
					unclassified		
3.73	1.73	8.05	8.13e-04	7.17e-02	Pseudomonas	Control vs. Adenoma	Combined
3.69	1.72	7.95	8.30e-04	7.17e-02	Howardella	Control vs. Adenoma	Combined
2.87	1.48	5.58	1.82e-03	1.18e-01	Rothia	Control vs. Adenoma	Combined
0.39	0.20	0.77	6.96e-03	3.61e-01	Blautia	Control vs. Adenoma	Combined
3.42	1.28	9.12	1.42e-02	4.65e-01	Enterobacter	Control vs. Adenoma	Combined
2.94	1.22	7.10	1.61e-02	4.65e-01	Puniceicoccaceae	Control vs. Adenoma	Combined
					unclassified		
2.27	1.16	4.42	1.62e-02	4.65e-01	Erysipelotrichaceae	Control vs. Adenoma	Combined
					unclassified		
2.27	1.16	4.42	1.62e-02	4.65e-01	Streptococcus	Control vs. Adenoma	Combined
3.24	1.17	9.00	2.37e-02	6.15e-01	Lactococcus	Control vs. Adenoma	Combined
3.91	1.17	13.06	2.65e-02	6.24e-01	Micrococcaceae	Control vs. Adenoma	Combined
					unclassified		

OR	Lower Bound	Upper Bound	P-value	BH	Lowest Genera ID	Comparison	Tissue Group
2.05	1.05	3.98	3.46e-02	6.66e-01	Shewanella	Control vs. Adenoma	Combined
2.03	1.05	3.93	3.57e-02	6.66e-01	Phascolarctobacterium	Control vs. Adenoma	Combined
7.10	1.14	44.44	3.61e-02	6.66e-01	Achromobacter	Control vs. Adenoma	Combined
0.10	0.01	0.89	3.96e-02	6.66e-01	Anaerostipes	Control vs. Adenoma	Combined
2.09	1.00	4.35	4.88e-02	6.66e-01	Neisseria	Control vs. Adenoma	Combined
2.85	1.00	8.12	4.94e-02	6.66e-01	Fusobacterium	Control vs. Adenoma	Combined
0.35	0.22	0.55	3.96e-06	4.40e-04	Dorea	Control vs. Carcinoma	Unmatched
5.15	2.02	13.14	5.96e-04	2.88e-02	Weissella	Control vs. Carcinoma	Unmatched
0.47	0.30	0.73	7.79e-04	2.88e-02	Blautia	Control vs. Carcinoma	Unmatched
2.13	1.23	3.67	6.57e-03	1.80e-01	Campylobacter	Control vs. Carcinoma	Unmatched
2.71	1.30	5.67	8.10e-03	1.80e-01	Leptotrichia	Control vs. Carcinoma	Unmatched
1.94	1.17	3.21	1.05e-02	1.95e-01	Parvimonas	Control vs. Carcinoma	Unmatched

OR	Lower Bound	Upper Bound	P-value	BH	Lowest Genera ID	Comparison	Tissue Group
1.99	1.15	3.45	1.40e-02	2.15e-01	Clostridiaceae 1 unclassified	Control vs. Carcinoma	Unmatched
2.34	1.17	4.69	1.64e-02	2.15e-01	Flavobacteriaceae unclassified	Control vs. Carcinoma	Unmatched
0.28	0.10	0.81	1.81e-02	2.15e-01	Ruminococcus2	Control vs. Carcinoma	Unmatched
0.60	0.39	0.92	1.95e-02	2.15e-01	Clostridium XIVb	Control vs. Carcinoma	Unmatched
0.52	0.29	0.92	2.41e-02	2.15e-01	Corynebacterium	Control vs. Carcinoma	Unmatched
0.43	0.21	0.90	2.45e-02	2.15e-01	Finexgoldia	Control vs. Carcinoma	Unmatched
0.43	0.21	0.90	2.52e-02	2.15e-01	Lachnospiraceae unclassified	Control vs. Carcinoma	Unmatched
0.48	0.26	0.92	2.71e-02	2.15e-01	Bacteroides	Control vs. Carcinoma	Unmatched
1.89	1.04	3.43	3.79e-02	2.80e-01	Clostridium sensu stricto	Control vs. Carcinoma	Unmatched
0.64	0.41	0.98	4.16e-02	2.89e-01	Barnesiella	Control vs. Carcinoma	Unmatched
3.98	1.19	13.24	2.45e-02	9.26e-01	Fusobacterium	Control vs. Carcinoma	Matched
7.80	1.20	50.88	3.18e-02	9.26e-01	Campylobacter	Control vs. Carcinoma	Matched