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 Adenoma

F statistic	R2	P-value	Study	Adenoma (n)	Control (n)
0.63	0.059	0.7562	Brim	6	6
1.85	0.021	0.0096	Zeller	37	50
1.04	0.003	0.3788	Baxter	198	172
1.01	0.001	0.3658	Hale	214	473

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

F statistic	R2	P-value	Study	Carcinoma (n)	Control (n)
3.47	0.034	0.0001	Wang	46	56
1.07	0.107	0.3431	Weir	7	4
2.18	0.010	0.0033	Ahn	62	148
2.54	0.028	0.0003	Zeller	41	50
2.05	0.007	0.0024	Baxter	120	172
0.97	0.002	0.7163	Hale	17	473
1.27	0.016	0.0460	Flemer	43	37

Table S3: Alpha Diversity Metrics OR in Tissue for Adenoma

Odds Ratio	Lower Bound	Upper Bound	P-value	Measure
1.82	0.95	3.49	0.07	OTU Richness
3.25	0.55	19.25	0.19	Shannon Diversity
3.47	0.68	17.70	0.13	Evenness

Table S4: Alpha Diversity Metrics OR in Tissue for Unmatched Carcinoma Non-Carcinoma Samples

Odds Ratio	Lower Bound	Upper Bound	P-value	Measure
1.53	0.77	3.04	0.22	OTU Richness
1.43	0.67	3.05	0.35	Shannon Diversity
1.84	0.54	6.24	0.33	Evenness

Table S5: Alpha Diversity Metrics OR in Tissue for Matched Carcinoma Non-Carcinoma Samples

Odds Ratio	Lower Bound	Upper Bound	P-value	Measure
0.43	0.07	2.45	0.34	OTU Richness
0.45	0.14	1.43	0.17	Shannon Diversity
0.45	0.14	1.43	0.17	Evenness

Table S6: Bray-Curtis Distance Matrix Analyzed by PERMANOVA for Tissue Adenoma

F statistic	R2	P-value	Study	Adenoma (n)	Control (n)
5.03	0.144	1e-04	Lu	17	15
2.51	0.018	1e-04	Flemer	37	103
5.27	0.569	1e-01	Lu (Matched)	3	3

Table S7: Bray-Curtis Distance Matrix Analyzed by PERMANOVA for Tissue Carcinoma

F statistic	R2	P-value	Study	Carcinoma (n)	Control (n)
1.75	0.025	0.0069	Sanapareddy	33	38
1.07	0.051	0.0995	Burns	10	12
6.93	0.029	0.0001	Flemer	94	140
1.10	0.064	0.2691	Chen	9	9
1.20	0.048	0.2515	Dejea (Matched)	13	13
0.43	0.030	0.9816	Geng (Matched)	8	8
0.81	0.168	1.0000	Burns (Matched)	3	3

Table S8: OR of Adenoma in Stool for each Individual Genera with Initial P-Value under 0.05

OR	Lower Bound	Upper Bound	P-value	BH	Lowest Genera ID
1.46	1.14	1.86	0.0023	0.220	Clostridium XlVb
1.77	1.19	2.62	0.0045	0.220	Porphyromonas
0.71	0.56	0.91	0.0064	0.220	Lachnospiraceae unclassified
3.33	1.27	8.72	0.0141	0.292	Novosphingobium
1.35	1.06	1.72	0.0163	0.292	Bacteroidales unclassified
0.75	0.59	0.95	0.0192	0.292	Clostridium XI
0.71	0.54	0.95	0.0199	0.292	Clostridiaceae 1 unclassified
0.68	0.47	0.97	0.0356	0.459	Lactococcus

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
0.27	0.14	0.56	0.0003	0.072	Lachnospiraceae unclassified
3.73	1.73	8.05	0.0008	0.072	Pseudomonas
3.69	1.72	7.95	0.0008	0.072	Howardella
2.87	1.48	5.58	0.0018	0.118	Rothia
0.39	0.20	0.77	0.0070	0.361	Blautia
3.42	1.28	9.12	0.0142	0.465	Enterobacter
2.94	1.22	7.10	0.0161	0.465	Puniceicoccaceae unclassified
2.27	1.16	4.42	0.0162	0.465	Erysipelotrichaceae unclassified
2.27	1.16	4.42	0.0162	0.465	Streptococcus
3.24	1.17	9.00	0.0237	0.615	Lactococcus
3.91	1.17	13.06	0.0265	0.624	Micrococcaceae unclassified
2.05	1.05	3.98	0.0346	0.666	Shewanella
2.03	1.05	3.93	0.0357	0.666	Phascolarctobacterium
7.10	1.14	44.44	0.0361	0.666	Achromobacter
0.10	0.01	0.89	0.0396	0.666	Anaerostipes
2.09	1.00	4.35	0.0488	0.666	Neisseria
2.85	1.00	8.12	0.0494	0.666	Fusobacterium

Table S10: OR of Carcinoma in Stool for each Individual Genera with Initial P-Value under 0.05

OR	Lower Bound	Upper Bound	P-value	BH	Lowest Genera ID
3.20	2.26	4.54	6.73e-11	5.59e-09	Porphyromonas
7.11	3.84	13.17	4.60e-10	1.91e-08	Peptostreptococcus
3.07	2.11	4.46	3.80e-09	1.05e-07	Parvimonas
2.74	1.95	3.85	5.54e-09	1.15e-07	Fusobacterium
2.15	1.57	2.95	2.20e-06	3.65e-05	Escherichia.Shigella
1.79	1.33	2.41	1.30e-04	1.80e-03	Enterobacteriaceae unclassified
0.63	0.48	0.83	1.19e-03	1.41e-02	Ruminococcus
0.65	0.49	0.86	2.94e-03	3.05e-02	Clostridium XI
0.60	0.41	0.88	8.98e-03	8.28e-02	Roseburia
1.45	1.09	1.94	1.17e-02	9.72e-02	Clostridium XIVb
0.67	0.48	0.93	1.53e-02	1.15e-01	Clostridiaceae 1 unclassified
1.76	1.10	2.82	1.88e-02	1.30e-01	Campylobacter
2.50	1.14	5.47	2.22e-02	1.42e-01	Anaerococcus
1.45	1.05	2.00	2.54e-02	1.50e-01	Desulfovibrio
1.53	1.04	2.26	3.28e-02	1.79e-01	Veillonellaceae unclassified
0.69	0.49	0.97	3.44e-02	1.79e-01	Lachnospiraceae unclassified

Table S11: OR of Carcinoma in Tissue for each Individual Genera with Initial P-Value under 0.05

OR	Lower Bound	Upper Bound	P-value	BH	Lowest Genera ID
2.11	1.39	3.22	4.90e-04	2.83e-02	Clostridium sensu stricto
2.42	1.43	4.10	9.59e-04	2.83e-02	Campylobacter
2.86	1.49	5.46	1.49e-03	2.93e-02	Leptotrichia
0.53	0.35	0.79	2.06e-03	3.04e-02	Blautia
1.75	1.16	2.65	7.78e-03	7.89e-02	Fusobacterium
0.49	0.29	0.83	8.03e-03	7.89e-02	Corynebacterium
1.80	1.13	2.86	1.28e-02	9.56e-02	Parvimonas
0.60	0.40	0.90	1.30e-02	9.56e-02	Bacteroides
1.78	1.05	3.02	3.33e-02	1.99e-01	Anaerococcus
0.65	0.43	0.97	3.50e-02	1.99e-01	Clostridium XlVb
0.41	0.17	0.95	3.71e-02	1.99e-01	Ruminococcus2
0.54	0.29	1.00	4.90e-02	2.41e-01	Coprococcus