Investigating the Microbiota and Colorectal Cancer: The Importance of Community

Marc A Sze and Patrick D Schloss

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 RR in Tissue for Adenoma

Relative Risk	Lower Bound	Upper Bound	P-value	Measure
1.48	0.97	2.27	0.07	OTU Richness
1.88	0.84	4.21	0.12	Shannon Diversity
1.98	0.99	3.95	0.05	Evenness

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

Relative Risk	Lower Bound	Upper Bound	P-value	Measure
1.27	0.86	1.88	0.23	OTU Richness
1.16	0.83	1.62	0.38	Shannon Diversity
1.32	0.72	2.45	0.37	Evenness

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

Relative Risk	Lower Bound	Upper Bound	P-value	Measure
0.67	0.28	1.63	0.38	OTU Richness
0.68	0.37	1.27	0.23	Shannon Diversity
0.68	0.37	1.27	0.23	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: RR of Adenoma in Stool for each Individual Genera with Initial P-Value under 0.05

RR	Lower Bound	Upper Bound	P-value	BH	Lowest Genera ID
1.45	1.15	1.83	0.0019	0.082	Pyramidobacter
1.24	1.08	1.43	0.0021	0.082	Clostridium XlVb
1.33	1.11	1.59	0.0024	0.082	Candidatus Saccharibacteria unclassified
1.71	1.19	2.45	0.0036	0.094	Novosphingobium
0.82	0.71	0.94	0.0057	0.118	Lachnospiraceae unclassified
1.19	1.04	1.36	0.0142	0.244	Bacteroidales unclassified
1.39	1.05	1.85	0.0210	0.295	Eubacteriaceae unclassified
1.56	1.06	2.29	0.0229	0.295	Porphyromonas
0.83	0.70	0.99	0.0400	0.458	Lactococcus
0.85	0.73	1.00	0.0485	0.500	Clostridium XI

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

RR	Lower Bound	Upper Bound	P-value	BH	Lowest Genera ID
2.10	1.39	3.16	0.0004	0.070	Selenomonas
1.99	1.35	2.94	0.0005	0.070	Enterobacter
1.90	1.26	2.89	0.0024	0.210	Rothia
2.20	1.30	3.74	0.0035	0.224	Micrococcaceae unclassified
2.38	1.29	4.39	0.0053	0.276	Achromobacter
1.88	1.18	2.99	0.0076	0.326	Puniceicoccaceae unclassified
1.90	1.16	3.10	0.0103	0.357	Centipeda
1.71	1.13	2.59	0.0110	0.357	Porphyromonadaceae unclassified
2.09	1.17	3.73	0.0126	0.362	Pseudomonas
2.11	1.14	3.90	0.0167	0.382	Meiothermus
2.11	1.14	3.90	0.0167	0.382	Varibaculum
1.90	1.12	3.23	0.0177	0.382	Lactococcus
1.95	1.09	3.50	0.0241	0.480	Treponema
2.40	1.10	5.25	0.0286	0.492	Proteus
1.53	1.04	2.25	0.0315	0.492	Paraprevotella
1.61	1.04	2.51	0.0339	0.492	Oxalobacteraceae unclassified
1.95	1.05	3.64	0.0346	0.492	Anaerofustis
1.96	1.04	3.66	0.0361	0.492	Sphingomonas
0.47	0.23	0.95	0.0363	0.492	Lachnospiraceae unclassified
1.77	1.03	3.04	0.0399	0.492	Planococcaceae unclassified
1.77	1.03	3.04	0.0399	0.492	Trueperella
1.57	1.01	2.42	0.0428	0.504	Neisseria
1.71	1.00	2.93	0.0489	0.551	Lactobacillus

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

RR	Lower Bound	Upper Bound	P-value	BH	Lowest Genera ID
2.37	2.02	2.78	2.03e-26	1.69e-24	Peptostreptococcus
1.81	1.55	2.12	1.33e-13	5.51e-12	Porphyromonas
1.85	1.54	2.22	7.86e-11	2.17e-09	Parvimonas
1.72	1.45	2.05	8.19e-10	1.70e-08	Fusobacterium
1.55	1.30	1.84	7.91e-07	1.31e-05	Escherichia.Shigella
1.41	1.20	1.67	5.28e-05	7.31e-04	Enterobacteriaceae unclassified
1.68	1.29	2.20	1.21e-04	1.44e-03	Anaerococcus
0.73	0.62	0.87	2.97e-04	3.08e-03	Roseburia
1.42	1.17	1.74	5.40e-04	4.98e-03	Campylobacter
0.76	0.65	0.90	1.51e-03	1.25e-02	Ruminococcus
0.78	0.66	0.92	4.00e-03	3.02e-02	Lachnospiraceae unclassified
0.79	0.67	0.93	5.42e-03	3.75e-02	Clostridium XI
1.55	1.11	2.16	9.54e-03	6.09e-02	Synergistaceae unclassified
1.25	1.05	1.48	1.19e-02	7.08e-02	Clostridium XIVb
1.27	1.04	1.54	1.61e-02	8.52e-02	Veillonellaceae unclassified
1.24	1.04	1.49	1.64e-02	8.52e-02	Desulfovibrio
0.79	0.65	0.97	2.37e-02	1.16e-01	Clostridiaceae 1 unclassified
1.26	1.03	1.55	2.73e-02	1.26e-01	Howardella
1.28	1.02	1.61	3.46e-02	1.51e-01	Megasphaera
1.20	1.00	1.44	4.90e-02	2.03e-01	Anaerotruncus

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

RR	Lower Bound	Upper Bound	P-value	BH	Lowest Genera ID
1.64	1.33	2.03	3.12e-06	1.84e-04	Campylobacter
1.64	1.29	2.10	7.09e-05	2.09e-03	Leptotrichia
1.59	1.25	2.02	1.43e-04	2.82e-03	Lactobacillus
1.45	1.16	1.81	9.79e-04	1.44e-02	Anaerococcus
1.38	1.10	1.73	5.69e-03	6.31e-02	Fusobacterium
1.38	1.09	1.73	6.42e-03	6.31e-02	Parvimonas
1.56	1.11	2.19	1.06e-02	8.91e-02	Mobiluncus
0.75	0.60	0.94	1.34e-02	9.86e-02	Bacteroides
1.41	1.07	1.86	1.56e-02	1.02e-01	Clostridium sensu stricto
0.69	0.50	0.94	2.04e-02	1.21e-01	Corynebacterium
1.29	1.03	1.62	2.72e-02	1.46e-01	Peptostreptococcus
0.75	0.57	1.00	4.70e-02	2.15e-01	Blautia
1.40	1.00	1.95	4.74e-02	2.15e-01	Mogibacterium