

Supplementary Table S1. Within-in sample diversity in vegans and omnivores of RBVD study.

Taxonomic Level	Vegans	Omnivores	<i>p</i>-Value
Phylum			
number of phyla	9.9 (± 1.9)	9.5 (± 1.9)	0.4
Pielou's evenness	0.39 (± 0.06)	0.41 (± 0.07)	0.3
Shannon diversity	0.89 (± 0.12)	0.90 (± 0.12)	0.6
Simpson diversity	0.52 (0.06)	0.52 (± 0.06)	0.6
Class			
number of classes	20.2 (± 2.7)	19.8 (± 2.6)	0.5
Pielou's evenness	0.37 (± 0.5)	0.37 (± 0.5)	0.6
Shannon diversity	1.10 (± 0.15)	1.11 (± 0.14)	0.8
Simpson diversity	0.57 (± 0.07)	0.57 (± 0.06)	1
Family			
number of families	66.3 (± 11.3)	67.5 (± 11.4)	0.1
Pielou's evenness	0.46 (± 0.07)	0.46 (± 0.05)	0.9
Shannon diversity	1.93 (± 0.32)	1.95 (± 0.26)	0.8
Simpson diversity	0.77 (± 0.10)	0.77 (± 0.07)	0.7
Genus			
number of genera	123.2 (± 23.4)	123.2 (± 26.1)	0.3
Pielou's evenness	0.45 (± 0.08)	0.45 (± 0.07)	1
Shannon diversity	2.18 (± 0.43)	2.18 (± 0.38)	1
Simpson diversity	0.75 (± 0.12)	0.76 (± 0.09)	0.8
Species			
number of species	174.2 (± 35.4)	172 (± 39.4)	0.8
Pielou's evenness	0.44 (± 0.12)	0.50 (± 0.10)	0.03
Shannon diversity	2.27 (± 0.62)	2.56 (± 0.58)	0.04
Simpson diversity	0.74 (± 0.16)	0.81 (± 0.12)	0.05

Within-in sample diversity of gut microbiota between vegans and omnivores described by alpha-diversity indices. Data were presented as means (± standard deviation). Significance level was set at $p \leq 0.05$.

Supplementary Table S2. Abundances of taxa at phylum level in vegans and omnivores.

Phylum	Vegans	Omnivores	<i>p</i> -Value	Vegans (Max)	Omnivore (Max)	Presence (Vegan)	Presence (Omnivore)
Firmicutes	17357.5 (13550–22231.5)	15603 (12928–18595.5)	0.16	37648	43768	36	36
Bacteroidetes	12127 (9552–16383)	12958 (8857–16517)	0.84	26267	42958	36	36
Proteobacteria	426.5 (204–875.5)	544 (311–997.5)	0.21	4646	3810	36	36
Actinobacteria	347.5 (133–677.5)	266 (143.5–555)	0.73	3643	11041	36	36
Cyanobacteria	153 (96–250.5)	149.5 (96–200)	0.77	406	501	36	36
Verrucomicrobia	32.5 (3–697)	40 (1.5–566)	0.61	4397	3775	35	32
Fusobacteria	2 (1–4)	2 (1–3.5)	0.44	15	28	32	33
Synergistetes	2.5 (0.5–6.5)	2 (1–7)	0.88	102	34	27	28
Tenericutes	13.5 (0–60)	1 (0–13.5)	0.02	253	98	26	21
Euryarchaeota	0 (0–3)	0 (0–0)	0.06	926	89	14	7
Acidobacteria	0 (0–1)	0 (0–1)	0.72	2	3	13	11
Lentisphaerae	0 (0–0)	0 (0–0.5)	0.39	4	13	6	9
Spirochaetes	0 (0–0)	0 (0–0)	0.09	1	1	5	1
Nitrospinae	0 (0–0)	0 (0–0)	0.30	6	1	3	1
Aquificae	0 (0–0)	0 (0–0)	0.63	2	1	3	2
Armatimonadetes	0 (0–0)	0 (0–0)	0.08	1	0	3	0
Balneolaeota	0 (0–0)	0 (0–0)	0.25	2	2	2	5
Chloroflexi	0 (0–0)	0 (0–0)	0.40	1	1	2	4
Chlorobi	0 (0–0)	0 (0–0)	0.32	1	0	1	0
Chrysiogenetes	0 (0–0)	0 (0–0)	1.00	1	1	1	1
Fibrobacteres	0 (0–0)	0 (0–0)	1.00	1	1	1	1
Nitrospirae	0 (0–0)	0 (0–0)	1.00	1	1	1	1
Deinococcus-Thermus	0 (0–0)	0 (0–0)	1.00	1	1	1	1
Thermodesulfobacteria	0 (0–0)	0 (0–0)	1.00	1	1	1	1
Thermotogae	0 (0–0)	0 (0–0)	1.00	1	1	1	1
Elusimicrobia	0 (0–0)	0 (0–0)	0.15	0	92	0	2
Deferribacteres	0 (0–0)	0 (0–0)	0.32	0	1	0	1

Median (Q1–Q3) abundances of phyla presented as number of reads resulting from 16S rRNA sequencing.

Supplementary Table S3. Abundances of taxa at species level in vegans and omnivores.

Species	Vegans	Omnivores	<i>p</i> -Value	Vegans (Max)	Omnivore (Max)	Presence (Vegan)	Presence (Omnivore)
<i>Akkermansia muciniphila</i>	31 (3–667)	37 (1–540.5)	0.426	4197	3591	35	30
<i>Alistipes indistinctus</i>	17.5 (1–76)	27 (4–64.5)	0.257	565	504	27	35
<i>Alistipes onderdonkii</i>	1 (0–12.5)	4 (1–30)	0.177	204	237	22	28
<i>Alistipes putredinis</i>	9 (1.5–33)	22 (2–37)	0.175	114	87	28	32
<i>Allisonella histaminiformans</i>	1 (0–1)	0 (0–1.5)	0.247	46	118	13	8
<i>Alloprevotella rava</i>	1 (0–6)	1 (0–2)	0.619	2044	2941	19	15
<i>Bacteroides coprocola</i>	10.5 (2–43.5)	17 (7–37.5)	0.132	2841	316	23	19
<i>Bacteroides dorei</i>	31 (3–667)	37 (1–540.5)	0.398	314	147	32	34
<i>Bacteroides fragilis</i>	23.5 (7–85.5)	30 (15–85.5)	0.237	2664	396	36	35
<i>Bacteroides massiliensis</i>	4 (2–132.5)	5 (2–165)	0.599	1619	1998	31	30
<i>Bacteroides ovatus</i>	23.5 (7–58)	23 (10–69.5)	0.562	682	344	35	35
<i>Bacteroides plebeius</i>	1 (0–6.5)	0 (0–1.5)	0.121	3245	1063	19	14
<i>Bacteroides uniformis</i>	12.5 (1.5–32.5)	35 (14–71)	0.004	150	138	30	33
<i>Bacteroides vulgatus</i>	9.5 (2.5–20)	17.5 (6–34.5)	0.070	120	134	31	34
<i>Barnesiella intestinihominis</i>	8.5 (1–27.5)	15 (3.5–30)	0.190	128	187	28	32
<i>Barnesiella viscericola</i>	3 (0.5–6.5)	2 (0.5–5.5)	0.986	101	34	27	27
<i>Bifidobacterium longum</i>	4.5 (1–15.5)	6 (0.5–17)	0.712	299	172	28	27
<i>Butyricicoccus desmolans</i>	5.5 (2–35.5)	2 (1–18)	0.049	182	88	33	30
<i>Butyricimonas virosa</i>	0 (0–2)	0.5 (0–5)	0.134	4	26	17	11
<i>Butyrivibrio crossotus</i>	0 (0–1)	0.5 (0–1)	0.248	2335	1118	12	18
<i>Clostridium colinum</i>	3 (0–12)	0 (0–1)	0.004	125	73	22	12
<i>Clostridium lactatifermentans</i>	1 (0–3)	2 (0–3.5)	0.321	25	414	23	26
<i>Clostridium leptum</i>	7 (2.5–14.5)	9.5 (5–15)	0.245	259	92	34	35
<i>Collinsella aerofaciens</i>	14 (3.5–31)	22 (4.5–43.5)	0.286	294	722	29	30
<i>Coprobacter fastidiosus</i>	3 (0.5–41)	10.5 (1–34)	0.540	565	504	27	35
<i>Coprococcus eutactus</i>	41.5 (2–226)	31 (0–176.5)	0.366	1173	1676	34	26
<i>Dialister invisus</i>	2 (0–20.5)	4.5 (2–393)	0.043	3245	4131	26	34
<i>Dialister succinatiphilus</i>	2.5 (0.5–81.5)	0 (0–2.5)	0.015	4047	1831	27	16
<i>Eubacterium coprostanoligenes</i>	57 (18–229.5)	70.5 (30.5–160)	0.982	1870	822	33	36
<i>Eubacterium hallii</i>	6.5 (3–13.5)	9.5 (5.5–14.5)	0.160	82	167	34	36
<i>Faecalibacterium prausnitzii</i>	968.5 (566.5–1774.5)	637 (439.5–1165)	0.077	11675	5289	36	36
<i>Finegoldia magna</i>	43.5 (33–63)	44 (31–53)	0.673	136	113	36	36
<i>Gemmiger formicilis</i>	14.5 (5.5–36)	34 (17.5–54.5)	0.038	172	163	35	34
<i>Holdemanella bififormis</i>	1 (0–33)	0 (0–38.5)	0.635	484	653	22	17
<i>Leptolyngbya boryana</i>	92 (47–149.5)	85.5 (59.5–141.5)	0.822	320	475	36	36
<i>Megasphaera elsdenii</i>	1.5 (0–5)	1 (0–3.5)	0.496	2240	875	25	23
<i>Odoribacter splanchnicus</i>	48 (19.5–110.5)	46 (18–105)	0.879	205	475	35	33
<i>Parabacteroides distasonis</i>	191 (77–326.5)	175 (87–518.5)	0.669	3176	2999	35	33
<i>Parabacteroides merdae</i>	15.5 (2.5–29.5)	12.5 (1–63)	0.721	260	230	29	28
<i>Paraprevotella clara</i>	1 (0–258.5)	1 (0–123.5)	0.803	1532	2634	20	25
<i>Paraprevotella xylaniphila</i>	0.5 (0–4)	0 (0–1.5)	0.207	108	35	18	13
<i>Parasutterella excrementihominis</i>	6 (1–15)	13 (3.5–96.5)	0.043	1798	979	28	33
<i>Phascolarctobacterium faecium</i>	9.5 (1–484.5)	3 (1–401)	0.675	1688	2595	29	28

Species	Vegans	Omnivores	<i>p</i> -Value	Vegans (Max)	Omnivore (Max)	Presence (Vegan)	Presence (Omnivore)
<i>Phascolarctobacterium succinatut</i>	1 (0–3)	2 (0–4.5)	0.377	1688	2595	29	28
<i>Planktothrix suspensa</i>	35.5 (18–59)	26.5 (16–77.5)	0.648	273	237	36	36
<i>Prevotella copri</i>	19 (8.5–5250.5)	19 (9–1640.5)	0.765	18976	12158	35	35
<i>Prevotella stercorea</i>	1 (0–6)	1 (0–2.5)	0.393	1876	923	26	25
<i>Ruminococcus bromii</i>	52.5 (2.5–114)	64.5 (22–146.5)	0.477	2004	1277	32	31
<i>Ruminococcus callidus</i>	17.5 (0–35.5)	5.5 (0–27.5)	0.346	83	105	26	24
<i>Sutterella stercoricanis</i>	1 (0–40.5)	0 (0–4.5)	0.106	713	597	23	15
<i>Sutterella wadsworthensis</i>	26.5 (2.5–153)	17 (1–76)	0.312	634	1475	32	28

Median (Q1–Q3) abundances of species presented as number of reads resulting from 16S rRNA sequencing. Only taxa were included that were present in at least 50% of participants with vegan or omnivorous diet and with an absolute abundance of 100 reads in at least one participant. Significant differences with $p \leq 0.05$ were marked in bold.

Supplementary Table S4. Abundances of taxa at genus level in vegans and omnivores.

Genus	Vegans	Omnivores	<i>p</i> -Value	Vegan (Max)	Omnivore (Max)	Presence (Vegan)	Presence (Omnivore)
<i>Bacteroides</i>	6352 (1986.2–8377.8)	6094 (3214.8–11222.2)	0.374	20765	25858	36	36
<i>Butyricimonas</i>	25.5 (1.8–71.2)	19 (8.5–53.8)	0.982	261	2448	28	30
<i>Odoribacter</i>	62 (22.5–115.5)	46.5 (21.5–110)	0.817	213	487	35	34
<i>Barnesiella</i>	223 (23.8–826)	327.5 (160–655.2)	0.424	3400	3121	34	36
<i>Copro bacter</i>	3 (0.8–38.5)	10.5 (1–32.5)	0.540	199	469	27	28
<i>Parabacteroides</i>	454.5 (251.2–698)	550.5 (286.5–1189.8)	0.295	3254	5315	36	35
<i>Alloprevotella</i>	1 (0–2)	0.5 (0–2)	0.801	2053	2983	20	18
<i>Paraprevotella</i>	22 (0–281.2)	3 (1–135)	0.510	1629	2824	26	28
<i>Prevotella</i>	157.5 (27–6527.8)	56.5 (25.8–2219.8)	0.398	22873	15903	36	35
<i>Alistipes</i>	638.5 (261.2–1248.8)	752.5 (519.2–1713.2)	0.311	3360	4569	36	36
<i>Parasutterella</i>	6 (1–14.5)	13 (3.8–78.8)	0.045	1798	982	28	33
<i>Sutterella</i>	76 (22.8–242.2)	49 (3–169.2)	0.330	906	2116	34	33
<i>Desulfovibrio</i>	39.5 (16–75.8)	47.5 (14.8–150.8)	0.401	648	901	32	34
<i>Haemophilus</i>	2.5 (1–11.5)	0 (0–4)	0.027	216	100	28	17
<i>Akkermansia</i>	31 (3–603.5)	37 (1–521.8)	0.426	4197	3591	35	30
<i>Bifidobacterium</i>	147 (59.2–343.8)	91 (27.5–341.2)	0.395	3254	9975	35	36
<i>Collinsella</i>	22.5 (6.2–45.5)	32 (13.2–55.8)	0.423	382	913	31	32
<i>Planktothrix</i>	35.5 (19–59)	26.5 (16–75.8)	0.648	273	237	36	36
<i>Leptolyngbya</i>	92 (47.5–147.8)	85.5 (60.8–140.8)	0.822	320	475	36	36
<i>Lactobacillus</i>	8 (4–31.8)	5 (2.8–10.2)	0.051	106	70	36	34
<i>Streptococcus</i>	8 (5–36.8)	16.5 (6.8–40)	0.318	306	185	34	36
<i>Butyricococcus</i>	114.5 (52.5–209.2)	45.5 (26–92.8)	0.002	520	307	36	36
<i>Clostridium</i>	29.5 (18.5–56.8)	22.5 (11.8–43.2)	0.248	660	162	36	36
<i>Eubacterium</i>	113 (59–231)	92.5 (63.8–199.2)	0.848	1918	863	36	36
<i>Anaerostipes</i>	19 (6.8–34.8)	17 (9–32)	0.964	375	413	36	36
<i>Blautia</i>	83.5 (42.5–145)	101.5 (54.8–151.5)	0.536	435	362	36	36
<i>Butyrivibrio</i>	1 (0–3)	1.5 (0.8–3)	0.467	2338	1118	22	27
<i>Coprococcus</i>	49 (12.8–227.8)	38 (5–181.8)	0.333	1177	1696	36	33
<i>Lachnoclostridium</i>	973 (475.8–1259.2)	1091 (445.2–1946.8)	0.437	4292	3781	36	36
<i>Roseburia</i>	88.5 (47–219.5)	77.5 (40.2–162)	0.285	1314	630	36	36
<i>Tyzzerella</i>	21 (12.5–44)	15 (5.8–25)	0.107	127	463	36	34
<i>Oscillibacter</i>	224 (172–377.2)	273 (182.8–358.8)	0.915	1073	1251	36	36
<i>Anaerofilum</i>	25 (15–55)	39.5 (22.2–57.8)	0.338	185	130	35	36
<i>Faecalibacterium</i>	968.5 (580.8–1764.2)	637 (440.2–1105)	0.077	11675	5289	36	36
<i>Gemmiger</i>	14.5 (5.8–35)	34 (18.2–51.8)	0.038	172	163	35	34
<i>Ruminiclostridium</i>	113 (39.5–193.8)	96.5 (66.5–126.2)	0.437	422	292	36	36
<i>Ruminococcus</i>	245 (124.2–373.2)	325.5 (96.5–614.5)	0.532	2567	1741	35	36
<i>Erysipelatoclostridium</i>	13 (7–37)	29.5 (7–44)	0.327	166	185	35	35
<i>Holdemanella</i>	1 (0–30.5)	0 (0–38.2)	0.635	484	653	22	17
<i>Acidaminococcus</i>	2 (0–7.5)	2.5 (0–6.5)	0.840	324	727	22	24
<i>Phascolarctobacterium</i>	72.5 (1.8–524)	21.5 (1–679.5)	0.955	1701	2613	33	31
<i>Dialister</i>	392 (6.8–1172.8)	252 (6.8–1283.5)	0.822	4591	4640	34	36
<i>Megasphaera</i>	2 (0.8–5.2)	1 (0–4)	0.275	2295	919	27	23

Genus	Vegans	Omnivores	<i>p</i> -Value	Vegan (Max)	Omnivore (Max)	Presence (Vegan)	Presence (Omnivore)
<i>Veillonella</i>	8 (4–21.2)	7 (4–13)	0.491	169	626	36	35
<i>Finegoldia</i>	43.5 (33.5–63)	44 (31–51.5)	0.673	136	113	36	36
<i>Spiroplasma</i>	6.5 (0–30.2)	0 (0–12)	0.047	241	95	24	17

Median (Q1–Q3) abundances of genera presented as number of reads resulting from 16S rRNA sequencing. Only taxa were included that were present in at least 50% of participants with vegan or omnivorous diet and with an absolute abundance of 100 reads in at least one participant. Significant differences with $p \leq 0.05$ were marked in bold.