## 

## Table S1. Recommended Dietary Allowances (RDAs) for all B-vitamins (47)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Vitamins** | **Age** | **Birth to 6 months** | **7–12 months** | **1–3 years** | **4-8 years** | **9–13 years** | **14–18 years** | **19+ years** |
| **Thiamin** | Male | 0.2 mg | 0.3mg | 0.5mg | 0.6mg | 0.9mg | 1.2mg | 1.2mg |
|  | Female | 0.2 mg | 0.3mg | 0.5mg | 0.6mg | 0.9mg | 1.0mg | 1.1mg |
|  | Pregnancy |  |  |  |  |  | 1.4mg | 1.4mg |
|  | Lactation |  |  |  |  |  | 1.4mg | 1.4mg |
| **Riboflavin** | Male | 0.3mg | 0.4 mg | 0.5mg | 0.6mg | 0.9mg | 1.3mg | 1.3mg |
|  | Female | 0.3mg | 0.4 mg | 0.5mg | 0.6mg | 0.9mg | 1.0mg | 1.1mg |
|  | Pregnancy |  |  |  |  |  | 1.4mg | 1.4mg |
|  | Lactation |  |  |  |  |  | 1.6mg | 1.6mg |
| **Niacin** | Male | 2mg | 4 mg | 6mg | 8mg | 12mg | 16mg |  |
|  | Female | 2mg | 4 mg | 6mg | 8mg | 12mg | 14mg |  |
|  | Pregnancy |  |  |  |  |  | 18mg |  |
|  | Lactation |  |  |  |  |  | 17mg |  |
| **Pantothenate** | Male | 1.7mg | 1.8mg | 2mg | 3mg | 4mg | 5mg |  |
|  | Female | 1.7mg | 1.8mg | 2mg | 3mg | 4mg | 5mg |  |
|  | Pregnancy |  |  |  |  |  | 6 mg |  |
|  | Lactation |  |  |  |  |  | 7 mg |  |
| **Pyridoxine** | Male | 0.1mg | 0.3 mg | 0.5mg | 0.6mg | 1.0mg | 1.3mg | 1.3mg |
|  | Female | 0.1mg | 0.3 mg | 0.5mg | 0.6mg | 1.0mg | 1.2mg | 1.3mg |
|  | Pregnancy |  |  |  |  |  | 1.9mg | 1.9mg |
|  | Lactation |  |  |  |  |  | 2.0mg | 2.0mg |
| **Biotin** | Male | 5 mcg | 6 mcg | 8 mcg | 12 mcg | 20 mcg | 25 mcg | 30 mcg |
|  | Female | 5 mcg | 6 mcg | 8 mcg | 12 mcg | 20 mcg | 25 mcg | 30 mcg |
|  | Pregnancy |  |  |  |  |  | 30 mcg | 30 mcg |
|  | Lactation |  |  |  |  |  | 35 mcg | 35 mcg |
| **Folate** | Male | 65 mcg | 80 mcg | 150 mcg | 200 mcg | 300 mcg | 400 mcg |  |
|  | Female | 65 mcg | 80 mcg | 150 mcg | 200 mcg | 300 mcg | 400 mcg |  |
|  | Pregnancy |  |  |  |  |  | 600 mcg |  |
|  | Lactation |  |  |  |  |  | 500 mcg |  |
| **Cobalamin** | Male | 0.4 mcg | 0.5 mcg | 0.9 mcg | 1.2 mcg | 1.8 mcg | 2.4 mcg |  |
|  | Female | 0.4 mcg | 0.5 mcg | 0.9 mcg | 1.2 mcg | 1.8 mcg | 2.4 mcg |  |
|  | Pregnancy |  |  |  |  |  | 2.6 mcg |  |
|  | Lactation |  |  |  |  |  | 2.8 mcg |  |

## Table S2. B-vitamin transporters in human colon

|  |  |  |
| --- | --- | --- |
| **Vitamin** | **Transporter** | **References** |
| **Thiamin** | SLC44A4 gene (hTPPT) | (48) |
|  | SLC19A2 gene | (49) |
|  | hTHTR-1 and hTHTR-2 products of the SLC19A2 and SLC19A3 genes | (50) |
|  | carrier-mediated mechanism for TPP uptake  energy-dependent, Na+- and pH-independent | (51) |
| **Riboflavin** | hRFT1  high levels of hRFT1 in the small intestine and colon suggest that hRFT1 mediates the absorption of riboflavin at these sites | (52) |
|  | RFVT3  (RFVT-1, -2, and -3, products of the SLC52A1, SLC52A2, and SLC52A3 genes, respectively) | (53) |
| **Niacin** | specific and high-affinity carrier-mediated system for uptake of luminal nicotinic acid | (54) |
| **Biotin** | Na+-dependent, carrier-mediated mechanism  Shared by Pantothenic acid | (55-58) |
| **Pantothenate** | Na+-dependent, carrier-mediated mechanism | (55) |
| **Pyridoxine** | uptake to be pH sensitive, with an increase in uptake at 6.5 and higher pH but decreased uptake at lower incubation buffer pH  temperature dependent but was Na+ independent in nature. | (56,59) |
|  |  |  |
| **Folate** | hPCFT  (duodenum > ileum > colon) | (60) |
|  | carrier-mediated, pH-dependent, DIDS-sensitive, electroneutral transport mechanism for folate uptake in the human colonic | (61) |
| **Cobalamin** | No transporter identified |  |

## Table S3. The B-vitamin biosynthesizing species which are either experimentally known or computationally predicted in the literature.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Vitamins** | **Species/Strain** | **Phylum** | **Evidence** | **References** |
| **Thiamin (B1)** | *Bifidobacterium adolescentis* | Actinobacteria | Predicted and experimentally proven | (10,62)⁠ |
| *Bifidobacterium angulatum DSM 20098* | Actinobacteria | Predicted | (10)⁠ |
| *Bifidobacterium bifidum* | Actinobacteria | Predicted and experimentally proven | (10,62) |
| *Bifidobacterium breve* | Actinobacteria | Experimentally proven | (62)⁠ |
| *Bifidobacterium breve DSM 20213 = JCM 1192* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium catenulatum DSM 16992* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium dentium ATCC 27678* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium longum* | Actinobacteria | Experimentally proven | (62) |
| *Bifidobacterium longum DJO10A* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium longum NCC2705* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium infantis* | Actinobacteria | Experimentally proven | (62) |
| *Bifidobacterium longum subsp. infantis 157F* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium longum subsp. infantis ATCC 15697* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium longum subsp. infantis ATCC 55813* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium longum subsp. infantis CCUG 52486* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium longum subsp. longum JCM 1217* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium pseudocatenulatum DSM 20438* | Actinobacteria | Predicted | (10) |
| *Corynebacterium ammoniagenes DSM 20306* | Actinobacteria | Predicted | (10) |
| *Eggerthella sp. 1\_3\_56FAA* | Actinobacteria | Predicted | (10) |
| *Corynebacterium pseudodiphtheriticum* | Actinomycetota | Predicted | (13)⁠ |
| *Alistipes indistinctus YIT 12060* | Bacteroidetes | Predicted | (10) |
| *Bacteroides caccae ATCC 43185* | Bacteroidetes | Predicted | (10) |
| *Bacteroides cellulosilyticus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides cellulosilyticus DSM 14838* | Bacteroidetes | Predicted | (10) |
| *Bacteroides coprocola DSM 17136* | Bacteroidetes | Predicted | (10) |
| *Bacteroides coprophilus DSM 18228* | Bacteroidetes | Predicted | (10) |
| *Bacteroides dorei DSM 17855* | Bacteroidetes | Predicted | (10) |
| *Bacteroides eggerthii 1\_2\_48FAA* | Bacteroidetes | Predicted | (10) |
| *Bacteroides eggerthii DSM 20697* | Bacteroidetes | Predicted | (10) |
| *Bacteroides finegoldii DSM 17565* | Bacteroidetes | Predicted | (10) |
| *Bacteroides fragilis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides fragilis 3\_1\_12* | Bacteroidetes | Predicted | (10) |
| *Bacteroides fragilis NCTC 9343* | Bacteroidetes | Predicted and experimentally proven | (10) |
| *Bacteroides fragilis YCH46* | Bacteroidetes | Predicted | (10) |
| *Bacteroides intestinalis DSM 17393* | Bacteroidetes | Predicted | (10) |
| *Bacteroides ovatus ATCC 8483* | Bacteroidetes | Predicted | (10) |
| *Bacteroides ovatus SD CC 2a* | Bacteroidetes | Predicted | (10) |
| *Bacteroides ovatus SD CMC 3f* | Bacteroidetes | Predicted | (10) |
| *Bacteroides plebeius DSM 17135* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 1\_1\_30* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 1\_1\_6* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_1\_16* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_1\_22* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_1\_33B* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_1\_7* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_2\_4* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_1\_19* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_1\_23* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_1\_33FAA* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_1\_40A* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_2\_5* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 4\_1\_36* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 4\_3\_47FAA* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 9\_1\_42FAA* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. D1* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. D2* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. D20* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. D22* | Bacteroidetes | Predicted | (10) |
| *Bacteroides stercoris* | Bacteroidetes | Predicted | (13) |
| *Bacteroides stercoris ATCC 43183* | Bacteroidetes | Predicted | (10) |
| *Bacteroides thetaiotaomicron CL09T03C10* | Bacteroidetes | Predicted | (10) |
| *Bacteroides thetaiotaomicron dnLKV9* | Bacteroidetes | Predicted | (10) |
| *Bacteroides thetaiotaomicron VPI-5482* | Bacteroidetes | Predicted and experimentally proven | (10) |
| *Bacteroides uniformis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides uniformis ATCC 8492* | Bacteroidetes | Predicted | (10) |
| *Bacteroides vulgatus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides vulgatus ATCC 8482* | Bacteroidetes | Predicted and experimentally proven | (10) |
| *Bacteroides vulgatus PC510* | Bacteroidetes | Predicted | (10) |
| *Bacteroides xylanisolvens SD CC 1b* | Bacteroidetes | Predicted | (10) |
| *Bacteroides xylanisolvens XB1A* | Bacteroidetes | Predicted | (10) |
| *Parabacteroides goldsteinii* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides distasonis* | Bacteroidetes | Predicted | (10,13) |
| *Parabacteroides johnsonii DSM 18315* | Bacteroidetes | Predicted | (10) |
| *Parabacteroides merdae* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides merdae ATCC 43184* | Bacteroidetes | Predicted | (10) |
| *Parabacteroides sp. D13* | Bacteroidetes | Predicted | (10) |
| *Prevotella copri DSM 18205* | Bacteroidetes | Predicted | (6,10) |
| *Alistipes ihumii* | Bacteroidetes | Predicted | (13) |
| *Alistipes indistinctus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides caccae* | Bacteroidetes | Predicted | (13) |
| *Bacteroides caecimuris* | Bacteroidetes | Predicted | (13) |
| *Bacteroides cellulosilyticus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides dorei* | Bacteroidetes | Predicted | (13) |
| *Bacteroides faecichinchillae* | Bacteroidetes | Predicted | (13) |
| *Bacteroides faecis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides finegoldii* | Bacteroidetes | Predicted | (13) |
| *Bacteroides fragilis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides nordii* | Bacteroidetes | Predicted | (13) |
| *Bacteroides oleiciplenus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides ovatus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides salyersiae* | Bacteroidetes | Predicted | (13) |
| *Bacteroides stercorirosoris* | Bacteroidetes | Predicted | (13) |
| *Bacteroides stercoris* | Bacteroidetes | Predicted | (13) |
| *Bacteroides thetaiotaomicron* | Bacteroidetes | Predicted | (13) |
| *Bacteroides uniformis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides vulgatus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides xylanisolvens* | Bacteroidetes | Predicted | (13) |
| *Barnesiella intestinihominis* | Bacteroidetes | Predicted | (13) |
| *Butyricimonas virosa* | Bacteroidetes | Predicted | (13) |
| *Coprobacter fastidiosus* | Bacteroidetes | Predicted | (13) |
| *Muribaculum intestinale* | Bacteroidetes | Predicted | (13) |
| *Odoribacter splanchnicus* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides distasonis* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides goldsteinii* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides gordonii* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides merdae* | Bacteroidetes | Predicted | (13) |
| *Paraprevotella clara* | Bacteroidetes | Predicted | (13) |
| *Tidjanibacter massiliensis* | Bacteroidetes | Predicted | (13) |
| *Lactobacillus curvatus* | Firmicutes | Experimentally proven | (63)⁠ |
| *Lactobacillus plantarum* | Firmicutes | Experimentally proven | (63)⁠ |
| *Lactococcus lactis subsp. cremoris* | Firmicutes | Experimentally proven | (63)⁠ |
| *Pediococcus parvulus* | Firmicutes | Experimentally proven | (63)⁠ |
| *Leconostoc mesenteroides subsp. cremoris* | Firmicutes | Experimentally proven | (63)⁠ |
| *Acidaminococcus sp. D21* | Firmicutes | Predicted | (10) |
| *Anaerococcus hydrogenalis DSM 7454* | Firmicutes | Predicted | (10) |
| *Anaerofustis stercorihominis DSM 17244* | Firmicutes | Predicted | (10) |
| *Anaerostipes caccae DSM 14662* | Firmicutes | Predicted | (10) |
| *Anaerostipes sp. 3\_2\_56FAA* | Firmicutes | Predicted | (10) |
| *Bacillus subtilis subsp. subtilis str. 168* | Firmicutes | Predicted | (10) |
| *Blautia hansenii DSM 20583* | Firmicutes | Predicted | (10) |
| *Butyrivibrio fibrisolvens 16/4* | Firmicutes | Predicted | (10) |
| *Clostridiales bacterium 1\_7\_47FAA* | Firmicutes | Predicted | (10) |
| *Clostridium bartlettii DSM 16795* | Firmicutes | Predicted | (10) |
| *Clostridium difficile CD196* | Firmicutes | Predicted and experimentally proven | (10) |
| *Clostridium difficile NAP07* | Firmicutes | Predicted and experimentally proven | (10) |
| *Clostridium difficile NAP08* | Firmicutes | Predicted and experimentally proven | (10) |
| *Clostridium hiranonis DSM 13275* | Firmicutes | Predicted | (10) |
| *Clostridium hylemonae DSM 15053* | Firmicutes | Predicted | (10) |
| *Clostridium methylpentosum DSM 5476* | Firmicutes | Predicted | (10) |
| *Clostridium scindens ATCC 35704* | Firmicutes | Predicted | (10) |
| *Clostridium sp. L2-50* | Firmicutes | Predicted | (10) |
| *Clostridium sp. SS2/1* | Firmicutes | Predicted | (10) |
| *Clostridium sporogenes ATCC 15579* | Firmicutes | Predicted | (10) |
| *Coprococcus comes ATCC 27758* | Firmicutes | Predicted | (10) |
| *Coprococcus eutactus ATCC 27759* | Firmicutes | Predicted | (10) |
| *Dorea longicatena DSM 13814* | Firmicutes | Predicted | (10) |
| *Eubacterium hallii DSM 3353* | Firmicutes | Predicted | (10) |
| *Eubacterium rectale DSM 17629* | Firmicutes | Predicted | (10) |
| *Eubacterium rectale M104/1* | Firmicutes | Predicted | (10) |
| *Lachnospiraceae bacterium 5\_1\_63FAA* | Firmicutes | Predicted | (10) |
| *Megamonas hypermegale ART12/1* | Firmicutes | Predicted | (10) |
| *Mitsuokella multacida DSM 20544* | Firmicutes | Predicted | (10) |
| *Phascolarctobacterium sp. YIT 12067* | Firmicutes | Predicted | (10) |
| *Roseburia intestinalis L1-82* | Firmicutes | Predicted | (10) |
| *Ruminococcus lactaris ATCC 29176* | Firmicutes | Predicted | (10) |
| *Ruminococcus obeum A2-162* | Firmicutes | Predicted | (10) |
| *Ruminococcus sp. 5\_1\_39BFAA* | Firmicutes | Predicted | (10) |
| *Ruminococcus sp. SR1/5* | Firmicutes | Predicted | (10) |
| *Ruminococcus torques L2-14* | Firmicutes | Predicted | (10) |
| *Veillonella sp. 3\_1\_44* | Firmicutes | Predicted | (10) |
| *[Clostridium] amygdalinum* | Firmicutes | Predicted | (13) |
| *[Clostridium] citroniae* | Firmicutes | Predicted | (13) |
| *[Clostridium] methylpentosum* | Firmicutes | Predicted | (13) |
| *[Clostridium] scindens* | Firmicutes | Predicted | (13) |
| *[Eubacterium] eligens* | Firmicutes | Predicted | (13) |
| *[Eubacterium] hallii* | Firmicutes | Predicted | (13) |
| *[Eubacterium] rectale* | Firmicutes | Predicted | (13) |
| *Anaerobium acetethylicum* | Firmicutes | Predicted | (13) |
| *Anaerofustis stercorihominis* | Firmicutes | Predicted | (13) |
| *Anaerostipes hadrus* | Firmicutes | Predicted | (13) |
| *Anaerotignum lactatifermentans* | Firmicutes | Predicted | (13) |
| *Anaerotignum propionicum* | Firmicutes | Predicted | (13) |
| *Blautia glucerasea* | Firmicutes | Predicted | (13) |
| *Blautia luti* | Firmicutes | Predicted | (13) |
| *Blautia obeum* | Firmicutes | Predicted | (13) |
| *Blautia schinkii* | Firmicutes | Predicted | (13) |
| *Blautia wexlerae* | Firmicutes | Predicted | (13) |
| *Caecibacter massiliensis* | Firmicutes | Predicted | (13) |
| *Christensenella massiliensis* | Firmicutes | Predicted | (13) |
| *Clostridium perfringens* | Firmicutes | Predicted | (13) |
| *Coprococcus comes* | Firmicutes | Predicted | (13) |
| *Coprococcus eutactus* | Firmicutes | Predicted | (13) |
| *Dorea longicatena* | Firmicutes | Predicted | (13) |
| *Emergencia timonensis* | Firmicutes | Predicted | (13) |
| *Eubacterium callanderi* | Firmicutes | Predicted | (13) |
| *Eubacterium limosum* | Firmicutes | Predicted | (13) |
| *Eubacterium ramulus* | Firmicutes | Predicted | (13) |
| *Peptococcus niger* | Firmicutes | Predicted | (13) |
| *Pseudobutyrivibrio ruminis* | Firmicutes | Predicted | (13) |
| *Robinsoniella peoriensis* | Firmicutes | Predicted | (13) |
| *Roseburia faecis* | Firmicutes | Predicted | (13) |
| *Ruminococcus albus* | Firmicutes | Predicted | (13) |
| *Ruminococcus faecis* | Firmicutes | Predicted | (13) |
| *Ruminococcus gauvreauii* | Firmicutes | Predicted | (13) |
| *Fusobacterium gonidiaformans ATCC 25563* | Fusobacteria | Predicted | (10) |
| *Fusobacterium mortiferum ATCC 9817* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 1\_1\_41FAA* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 2\_1\_31* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 3\_1\_27* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 3\_1\_33* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 3\_1\_36A2* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 3\_1\_5R* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 4\_1\_13* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 7\_1* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. D11* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. D12* | Fusobacteria | Predicted | (10) |
| *Fusobacterium ulcerans ATCC 49185* | Fusobacteria | Predicted | (10) |
| *Fusobacterium varium ATCC 27725* | Fusobacteria | Predicted | (10) |
| *Victivallis vadensis* | Lentisphaerae | Predicted | (13) |
| *Acinetobacter junii SH205* | Proteobacteria | Predicted | (10) |
| *Bilophila wadsworthia 3\_1\_6* | Proteobacteria | Predicted | (10) |
| *Campylobacter coli JV20* | Proteobacteria | Predicted | (10) |
| *Campylobacter upsaliensis JV21* | Proteobacteria | Predicted | (10) |
| *Citrobacter sp. 30\_2* | Proteobacteria | Predicted | (10) |
| *Citrobacter youngae ATCC 29220* | Proteobacteria | Predicted | (10) |
| *Desulfovibrio piger ATCC 29098* | Proteobacteria | Predicted | (10) |
| *Desulfovibrio sp. 3\_1\_syn3* | Proteobacteria | Predicted | (10) |
| *Enterobacter cancerogenus ATCC 35316* | Proteobacteria | Predicted | (10) |
| *Enterobacteriaceae bacterium 9\_2\_54FAA* | Proteobacteria | Predicted | (10) |
| *Escherichia coli O157:H7 str. Sakai* | Proteobacteria | Predicted | (10) |
| *Escherichia coli SE11* | Proteobacteria | Predicted | (10) |
| *Escherichia coli str. K-12 substr. MG1655* | Proteobacteria | Predicted and experimentally proven | (10) |
| *Escherichia coli UTI89* | Proteobacteria | Predicted | (10) |
| *Escherichia sp. 1\_1\_43* | Proteobacteria | Predicted | (10) |
| *Escherichia sp. 3\_2\_53FAA* | Proteobacteria | Predicted | (10) |
| *Escherichia sp. 4\_1\_40B* | Proteobacteria | Predicted | (10) |
| *Klebsiella pneumoniae 1162281* | Proteobacteria | Predicted and experimentally proven | (10) |
| *Klebsiella sp. 1\_1\_55* | Proteobacteria | Predicted | (10) |
| *Oxalobacter formigenes HOxBLS* | Proteobacteria | Predicted | (10) |
| *Proteus penneri ATCC 35198* | Proteobacteria | Predicted | (10) |
| *Providencia alcalifaciens DSM 30120* | Proteobacteria | Predicted | (10) |
| *Providencia rettgeri DSM 1131* | Proteobacteria | Predicted | (10) |
| *Providencia rustigianii DSM 4541* | Proteobacteria | Predicted | (10) |
| *Providencia stuartii ATCC 25827* | Proteobacteria | Predicted | (10) |
| *Ralstonia sp. 5\_7\_47FAA* | Proteobacteria | Predicted | (10) |
| *Salmonella enterica subsp. enterica serovar Typhimurium str.* | Proteobacteria | Predicted and experimentally proven | (10) |
| *Succinatimonas hippei YIT 12066* | Proteobacteria | Predicted | (10) |
| *Desulfovibrio piger* | Proteobacteria | Predicted | (13) |
| *Escherichia fergusonii* | Proteobacteria | Predicted | (13) |
| *Akkermansia muciniphila* | Verrucomicrobiota | Predicted | (13) |
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|  |  |  |  |  |
| **Riboflavin (B2)** | *Bifidobacterium longum subsp. infantis ATCC 15697* | Actinobacteria | Predicted | (10) |
| *Corynebacterium ammoniagenes DSM 20306* | Actinobacteria | Predicted | (10) |
| *Adlercreutzia equolifaciens* | Actinomycetota | Predicted | (13) |
| *Corynebacterium pseudodiphtheriticum* | Actinomycetota | Predicted | (13) |
| *Alistipes indistinctus YIT 12060* | Bacteroidetes | Predicted | (10) |
| *Bacteroides caccae ATCC 43185* | Bacteroidetes | Predicted | (10) |
| *Bacteroides cellulosilyticus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides cellulosilyticus DSM 14838* | Bacteroidetes | Predicted | (10) |
| *Bacteroides coprocola DSM 17136* | Bacteroidetes | Predicted | (10) |
| *Bacteroides coprophilus DSM 18228* | Bacteroidetes | Predicted | (10) |
| *Bacteroides dorei DSM 17855* | Bacteroidetes | Predicted | (10) |
| *Bacteroides eggerthii 1\_2\_48FAA* | Bacteroidetes | Predicted | (10) |
| *Bacteroides eggerthii DSM 20697* | Bacteroidetes | Predicted | (10) |
| *Bacteroides finegoldii DSM 17565* | Bacteroidetes | Predicted | (10) |
| *Bacteroides fragilis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides fragilis 3\_1\_12* | Bacteroidetes | Predicted | (10) |
| *Bacteroides fragilis NCTC 9343* | Bacteroidetes | Predicted and experimentally proven | (10) |
| *Bacteroides fragilis YCH46* | Bacteroidetes | Predicted | (10) |
| *Bacteroides intestinalis DSM 17393* | Bacteroidetes | Predicted | (10) |
| *Bacteroides ovatus ATCC 8483* | Bacteroidetes | Predicted | (10) |
| *Bacteroides ovatus SD CC 2a* | Bacteroidetes | Predicted | (10) |
| *Bacteroides ovatus SD CMC 3f* | Bacteroidetes | Predicted | (10) |
| *Bacteroides plebeius DSM 17135* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 1\_1\_30* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 1\_1\_6* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_1\_16* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_1\_22* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_1\_33B* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_1\_7* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_2\_4* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_1\_19* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_1\_23* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_1\_33FAA* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_1\_40A* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_2\_5* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 4\_1\_36* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 4\_3\_47FAA* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 9\_1\_42FAA* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. D1* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. D2* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. D20* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. D22* | Bacteroidetes | Predicted | (10) |
| *Bacteroides stercoris* | Bacteroidetes | Predicted | (13) |
| *Bacteroides stercoris ATCC 43183* | Bacteroidetes | Predicted | (10) |
| *Bacteroides thetaiotaomicron CL09T03C10* | Bacteroidetes | Predicted | (10) |
| *Bacteroides thetaiotaomicron dnLKV9* | Bacteroidetes | Predicted | (10) |
| *Bacteroides thetaiotaomicron VPI-5482* | Bacteroidetes | Predicted and experimentally proven | (10) |
| *Bacteroides uniformis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides uniformis ATCC 8492* | Bacteroidetes | Predicted | (10) |
| *Bacteroides vulgatus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides vulgatus ATCC 8482* | Bacteroidetes | Predicted and experimentally proven | (10) |
| *Bacteroides vulgatus PC510* | Bacteroidetes | Predicted | (10) |
| *Bacteroides xylanisolvens SD CC 1b* | Bacteroidetes | Predicted | (10) |
| *Bacteroides xylanisolvens XB1A* | Bacteroidetes | Predicted | (10) |
| *Parabacteroides goldsteinii* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides distasonis* | Bacteroidetes | Predicted | (10,13) |
| *Parabacteroides johnsonii DSM 18315* | Bacteroidetes | Predicted | (10) |
| *Parabacteroides merdae* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides merdae ATCC 43184* | Bacteroidetes | Predicted | (10) |
| *Parabacteroides sp. D13* | Bacteroidetes | Predicted | (10) |
| *Prevotella copri DSM 18205* | Bacteroidetes | Predicted | (10) |
| *Prevotella salivae DSM 15606* | Bacteroidetes | Predicted | (10) |
| *Alistipes finegoldii* | Bacteroidetes | Predicted | (13) |
| *Alistipes obesi* | Bacteroidetes | Predicted | (13) |
| *Alistipes onderdonkii* | Bacteroidetes | Predicted | (13) |
| *Alistipes putredinis* | Bacteroidetes | Predicted | (13) |
| *Alistipes shahii* | Bacteroidetes | Predicted | (13) |
| *Alistipes timonensis* | Bacteroidetes | Predicted | (13) |
| *Alistipes ihumii* | Bacteroidetes | Predicted | (13) |
| *Alistipes indistinctus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides caccae* | Bacteroidetes | Predicted | (13) |
| *Bacteroides caecimuris* | Bacteroidetes | Predicted | (13) |
| *Bacteroides cellulosilyticus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides dorei* | Bacteroidetes | Predicted | (13) |
| *Bacteroides faecichinchillae* | Bacteroidetes | Predicted | (13) |
| *Bacteroides faecis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides finegoldii* | Bacteroidetes | Predicted | (13) |
| *Bacteroides fragilis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides nordii* | Bacteroidetes | Predicted | (13) |
| *Bacteroides oleiciplenus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides ovatus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides salyersiae* | Bacteroidetes | Predicted | (13) |
| *Bacteroides stercorirosoris* | Bacteroidetes | Predicted | (13) |
| *Bacteroides stercoris* | Bacteroidetes | Predicted | (13) |
| *Bacteroides thetaiotaomicron* | Bacteroidetes | Predicted | (13) |
| *Bacteroides uniformis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides vulgatus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides xylanisolvens* | Bacteroidetes | Predicted | (13) |
| *Barnesiella intestinihominis* | Bacteroidetes | Predicted | (13) |
| *Butyricimonas virosa* | Bacteroidetes | Predicted | (13) |
| *Coprobacter fastidiosus* | Bacteroidetes | Predicted | (13) |
| *Muribaculum intestinale* | Bacteroidetes | Predicted | (13) |
| *Odoribacter splanchnicus* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides distasonis* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides goldsteinii* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides gordonii* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides merdae* | Bacteroidetes | Predicted | (13) |
| *Paraprevotella clara* | Bacteroidetes | Predicted | (13) |
| *Tidjanibacter massiliensis* | Bacteroidetes | Predicted | (13) |
| *Acidaminococcus sp. D21* | Firmicutes | Predicted | (10) |
| *Anaerococcus hydrogenalis DSM 7454* | Firmicutes | Predicted | (10) |
| *Anaerostipes caccae DSM 14662* | Firmicutes | Predicted | (10) |
| *Anaerostipes sp. 3\_2\_56FAA* | Firmicutes | Predicted | (10) |
| *Bacillus subtilis* | Firmicutes | Experimentally proven | (64)⁠ |
| *Bacillus subtilis subsp. subtilis str. 168* | Firmicutes | Predicted | (10) |
| *Blautia hansenii DSM 20583* | Firmicutes | Predicted | (10) |
| *Butyrivibrio crossotus DSM 2876* | Firmicutes | Predicted | (10) |
| *Butyrivibrio fibrisolvens 16/4* | Firmicutes | Predicted | (10) |
| *Clostridiales bacterium 1\_7\_47FAA* | Firmicutes | Predicted | (10) |
| *Clostridium bartlettii DSM 16795* | Firmicutes | Predicted | (10) |
| *Clostridium bolteae ATCC BAA-613* | Firmicutes | Predicted | (10) |
| *Clostridium clostridioforme 2\_1\_49FAA* | Firmicutes | Predicted | (10) |
| *Clostridium difficile CD196* | Firmicutes | Predicted and experimentally proven | (10) |
| *Clostridium difficile NAP07* | Firmicutes | Predicted and experimentally proven | (10) |
| *Clostridium difficile NAP08* | Firmicutes | Predicted and experimentally proven | (10) |
| *Clostridium hiranonis DSM 13275* | Firmicutes | Predicted | (10) |
| *Clostridium sp. L2-50* | Firmicutes | Predicted | (10) |
| *Clostridium sp. M62/1* | Firmicutes | Predicted | (10) |
| *Clostridium sp. SS2/1* | Firmicutes | Predicted | (10) |
| *Clostridium sporogenes ATCC 15579* | Firmicutes | Predicted | (10) |
| *Clostridium symbiosum WAL-14163* | Firmicutes | Predicted | (10) |
| *Clostridium symbiosum WAL-14673* | Firmicutes | Predicted | (10) |
| *Coprobacillus sp. 29\_1* | Firmicutes | Predicted | (10) |
| *Coprococcus comes ATCC 27758* | Firmicutes | Predicted | (10) |
| *Coprococcus eutactus ATCC 27759* | Firmicutes | Predicted | (10) |
| *Dorea longicatena DSM 13814* | Firmicutes | Predicted | (10) |
| *Erysipelotrichaceae bacterium 3\_1\_53* | Firmicutes | Predicted | (10) |
| *Eubacterium biforme DSM 3989* | Firmicutes | Predicted | (10) |
| *Eubacterium hallii DSM 3353* | Firmicutes | Predicted | (10) |
| *Eubacterium rectale DSM 17629* | Firmicutes | Predicted | (10) |
| *Eubacterium rectale M104/1* | Firmicutes | Predicted | (10) |
| *Lachnospiraceae bacterium 5\_1\_63FAA* | Firmicutes | Predicted | (10) |
| *Lachnospiraceae bacterium 8\_1\_57FAA* | Firmicutes | Predicted | (10) |
| *Lactobacillus amylolyticus DSM 11664* | Firmicutes | Predicted | (10) |
| *Lactobacillus antri DSM 16041* | Firmicutes | Predicted | (10) |
| *Lactobacillus brevis ATCC 367* | Firmicutes | Predicted | (10) |
| *Lactobacillus crispatus 125-2-CHN* | Firmicutes | Predicted | (10) |
| *Lactobacillus fermentum* | Firmicutes | Predicted and experimental evidence | (6,10,65)⁠ |
| *Lactobacillus fermentum IFO 3956* | Firmicutes | Predicted | (10) |
| *Lactobacillus plantarum CRL 2130* | Firmicutes | Experimentally proven | (6,66)⁠ |
| *Lactobacillus plantarum 16* | Firmicutes | Predicted | (10) |
| *Lactobacillus plantarum subsp. plantarum ATCC 14917* | Firmicutes | Predicted | (10) |
| *Lactobacillus reuteri DSM 20016* | Firmicutes | Predicted | (10) |
| *Lactobacillus reuteri JCM 1112* | Firmicutes | Predicted | (10) |
| *Lactobacillus reuteri MM2-3* | Firmicutes | Predicted | (10) |
| *Lactobacillus reuteri MM4-1A* | Firmicutes | Predicted | (10) |
| *Lactobacillus ultunensis DSM 16047* | Firmicutes | Predicted | (10) |
| *Listeria grayi DSM 20601* | Firmicutes | Predicted | (10) |
| *Megamonas hypermegale ART12/1* | Firmicutes | Predicted | (10) |
| *Mitsuokella multacida DSM 20544* | Firmicutes | Predicted | (10) |
| *Phascolarctobacterium sp. YIT 12067* | Firmicutes | Predicted | (10) |
| *Roseburia intestinalis L1-82* | Firmicutes | Predicted | (10) |
| *Ruminococcaceae bacterium D16* | Firmicutes | Predicted | (10) |
| *Ruminococcus obeum A2-162* | Firmicutes | Predicted | (10) |
| *Ruminococcus sp. 5\_1\_39BFAA* | Firmicutes | Predicted | (10) |
| *Ruminococcus sp. SR1/5* | Firmicutes | Predicted | (10) |
| *Ruminococcus torques ATCC 27756* | Firmicutes | Predicted | (10) |
| *Streptococcus equinus ATCC 9812* | Firmicutes | Predicted | (10) |
| *Streptococcus infantarius subsp. infantarius ATCC BAA-102* | Firmicutes | Predicted | (10) |
| *Veillonella sp. 3\_1\_44* | Firmicutes | Predicted | (10) |
| *Veillonella sp. 6\_1\_27* | Firmicutes | Predicted | (10) |
| *[Clostridium] celerecrescens* | Firmicutes | Predicted | (13) |
| *[Clostridium] clostridioforme* | Firmicutes | Predicted | (13) |
| *[Clostridium] symbiosum* | Firmicutes | Predicted | (13) |
| *[Clostridium] viride* | Firmicutes | Predicted | (13) |
| *Butyricicoccus pullicaecorum* | Firmicutes | Predicted | (13) |
| *Clostridium saudiense* | Firmicutes | Predicted | (13) |
| *Coprobacillus cateniformis* | Firmicutes | Predicted | (13) |
| *Coprococcus catus* | Firmicutes | Predicted | (13) |
| *Enterococcus hirae* | Firmicutes | Predicted | (13) |
| *Faecalicatena contorta* | Firmicutes | Predicted | (13) |
| *Holdemanella biformis* | Firmicutes | Predicted | (13) |
| *Intestinibacillus massiliensis* | Firmicutes | Predicted | (13) |
| *Oscillibacter ruminantium* | Firmicutes | Predicted | (13) |
| *Oscillibacter valericigenes* | Firmicutes | Predicted | (13) |
| *Peptoniphilus grossensis* | Firmicutes | Predicted | (13) |
| *Sporobacter termitidis* | Firmicutes | Predicted | (13) |
| *[Clostridium] amygdalinum* | Firmicutes | Predicted | (13) |
| *[Clostridium] citroniae* | Firmicutes | Predicted | (13) |
| *[Eubacterium] eligens* | Firmicutes | Predicted | (13) |
| *[Eubacterium] hallii* | Firmicutes | Predicted | (13) |
| *[Eubacterium] rectale* | Firmicutes | Predicted | (13) |
| *Anaerobium acetethylicum* | Firmicutes | Predicted | (13) |
| *Anaerostipes hadrus* | Firmicutes | Predicted | (13) |
| *Anaerotignum lactatifermentans* | Firmicutes | Predicted | (13) |
| *Anaerotignum propionicum* | Firmicutes | Predicted | (13) |
| *Blautia luti* | Firmicutes | Predicted | (13) |
| *Blautia wexlerae* | Firmicutes | Predicted | (13) |
| *Caecibacter massiliensis* | Firmicutes | Predicted | (13) |
| *Clostridium perfringens* | Firmicutes | Predicted | (13) |
| *Coprococcus comes* | Firmicutes | Predicted | (13) |
| *Coprococcus eutactus* | Firmicutes | Predicted | (13) |
| *Dorea longicatena* | Firmicutes | Predicted | (13) |
| *Emergencia timonensis* | Firmicutes | Predicted | (13) |
| *Eubacterium callanderi* | Firmicutes | Predicted | (13) |
| *Eubacterium limosum* | Firmicutes | Predicted | (13) |
| *Eubacterium ramulus* | Firmicutes | Predicted | (13) |
| *Peptococcus niger* | Firmicutes | Predicted | (13) |
| *Robinsoniella peoriensis* | Firmicutes | Predicted | (13) |
| *Roseburia faecis* | Firmicutes | Predicted | (13) |
| *Ruminococcus albus* | Firmicutes | Predicted | (13) |
| *Ruminococcus gauvreauii* | Firmicutes | Predicted | (13) |
| *Fusobacterium gonidiaformans ATCC 25563* | Fusobacteria | Predicted | (10) |
| *Fusobacterium mortiferum ATCC 9817* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 1\_1\_41FAA* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 2\_1\_31* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 3\_1\_27* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 3\_1\_33* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 3\_1\_36A2* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 3\_1\_5R* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 4\_1\_13* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 7\_1* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. D11* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. D12* | Fusobacteria | Predicted | (10) |
| *Fusobacterium ulcerans ATCC 49185* | Fusobacteria | Predicted | (10) |
| *Fusobacterium varium ATCC 27725* | Fusobacteria | Predicted | (10) |
| *Victivallis vadensis* | Lentisphaerae | Predicted | (13) |
| *Acinetobacter junii SH205* | Proteobacteria | Predicted | (10) |
| *Bilophila wadsworthia 3\_1\_6* | Proteobacteria | Predicted | (10) |
| *Campylobacter coli JV20* | Proteobacteria | Predicted | (10) |
| *Campylobacter upsaliensis JV21* | Proteobacteria | Predicted | (10) |
| *Citrobacter sp. 30\_2* | Proteobacteria | Predicted | (10) |
| *Citrobacter youngae ATCC 29220* | Proteobacteria | Predicted | (10) |
| *Desulfovibrio piger ATCC 29098* | Proteobacteria | Predicted | (10) |
| *Desulfovibrio sp. 3\_1\_syn3* | Proteobacteria | Predicted | (10) |
| *Edwardsiella tarda ATCC 23685* | Proteobacteria | Predicted | (10) |
| *Enterobacter cancerogenus ATCC 35316* | Proteobacteria | Predicted | (10) |
| *Enterobacteriaceae bacterium 9\_2\_54FAA* | Proteobacteria | Predicted | (10) |
| *Escherichia coli O157:H7 str. Sakai* | Proteobacteria | Predicted | (10) |
| *Escherichia coli SE11* | Proteobacteria | Predicted | (10) |
| *Escherichia coli str. K-12 substr. MG1655* | Proteobacteria | Predicted and experimentally proven | (10) |
| *Escherichia coli UTI89* | Proteobacteria | Predicted | (10) |
| *Escherichia sp. 3\_2\_53FAA* | Proteobacteria | Predicted | (10) |
| *Escherichia sp. 4\_1\_40B* | Proteobacteria | Predicted | (10) |
| *Helicobacter bilis ATCC 43879* | Proteobacteria | Predicted | (10) |
| *Helicobacter canadensis MIT 98-5491* | Proteobacteria | Predicted | (10) |
| *Helicobacter cinaedi CCUG 18818* | Proteobacteria | Predicted | (10) |
| *Helicobacter pullorum MIT 98-5489* | Proteobacteria | Predicted | (10) |
| *Helicobacter pylori 26695* | Proteobacteria | Predicted and experimentally proven | (10) |
| *Helicobacter winghamensis ATCC BAA-430* | Proteobacteria | Predicted | (10) |
| *Klebsiella pneumoniae 1162281* | Proteobacteria | Predicted and experimentally proven | (10) |
| *Klebsiella sp. 1\_1\_55* | Proteobacteria | Predicted | (10) |
| *Oxalobacter formigenes HOxBLS* | Proteobacteria | Predicted | (10) |
| *Oxalobacter formigenes OXCC13* | Proteobacteria | Predicted | (10) |
| *Proteus penneri ATCC 35198* | Proteobacteria | Predicted | (10) |
| *Providencia alcalifaciens DSM 30120* | Proteobacteria | Predicted | (10) |
| *Providencia rettgeri DSM 1131* | Proteobacteria | Predicted | (10) |
| *Providencia rustigianii DSM 4541* | Proteobacteria | Predicted | (10) |
| *Providencia stuartii ATCC 25827* | Proteobacteria | Predicted | (10) |
| *Ralstonia sp. 5\_7\_47FAA* | Proteobacteria | Predicted | (10) |
| *Salmonella enterica subsp. enterica serovar Typhimurium str.* | Proteobacteria | Predicted and experimentally proven | (10) |
| *Succinatimonas hippei YIT 12066* | Proteobacteria | Predicted | (10) |
| *Sutterella wadsworthensis 3\_1\_45B* | Proteobacteria | Predicted | (10) |
| *Pararhodospirillum photometricum* | Proteobacteria | Predicted | (13) |
| *Parasutterella excrementihominis* | Proteobacteria | Predicted | (13) |
| *Rhodospirillum rubrum* | Proteobacteria | Predicted | (13) |
| *Turicimonas muris* | Proteobacteria | Predicted | (13) |
| *Desulfovibrio piger* | Proteobacteria | Predicted | (13) |
| *Escherichia fergusonii* | Proteobacteria | Predicted | (13) |
| *Akkermansia muciniphila* | Verrucomicrobiota | Predicted | (13) |
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| **Niacin (B3)** | *Bifidobacterium angulatum DSM 20098* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium bifidum NCIMB 41171* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium breve DSM 20213 = JCM 1192* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium catenulatum DSM 16992* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium longum DJO10A* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium longum NCC2705* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium longum subsp. infantis 157F* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium longum subsp. infantis ATCC 15697* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium longum subsp. infantis ATCC 55813* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium longum subsp. infantis CCUG 52486* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium longum subsp. longum JCM 1217* | Actinobacteria | Predicted | (10) |
| *Collinsella aerofaciens ATCC 25986* | Actinobacteria | Predicted | (10) |
| *Collinsella intestinalis DSM 13280* | Actinobacteria | Predicted | (10) |
| *Collinsella stercoris DSM 13279* | Actinobacteria | Predicted | (10) |
| *Corynebacterium ammoniagenes DSM 20306* | Actinobacteria | Predicted | (10) |
| *Collinsella aerofaciens* | Actinobacteria | Predicted | (13) |
| *Corynebacterium pseudodiphtheriticum* | Actinomycetota | Predicted | (13) |
| *Alistipes indistinctus YIT 12060* | Bacteroidetes | Predicted | (10) |
| *Bacteroides caccae ATCC 43185* | Bacteroidetes | Predicted | (10) |
| *Bacteroides cellulosilyticus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides cellulosilyticus DSM 14838* | Bacteroidetes | Predicted | (10) |
| *Bacteroides coprocola DSM 17136* | Bacteroidetes | Predicted | (10) |
| *Bacteroides coprophilus DSM 18228* | Bacteroidetes | Predicted | (10) |
| *Bacteroides dorei DSM 17855* | Bacteroidetes | Predicted | (10) |
| *Bacteroides eggerthii 1\_2\_48FAA* | Bacteroidetes | Predicted | (10) |
| *Bacteroides eggerthii DSM 20697* | Bacteroidetes | Predicted | (10) |
| *Bacteroides fragilis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides finegoldii DSM 17565* | Bacteroidetes | Predicted | (10) |
| *Bacteroides fragilis 3\_1\_12* | Bacteroidetes | Predicted | (10) |
| *Bacteroides fragilis NCTC 9343* | Bacteroidetes | Predicted and experimentally proven | (10) |
| *Bacteroides fragilis YCH46* | Bacteroidetes | Predicted | (10) |
| *Bacteroides intestinalis DSM 17393* | Bacteroidetes | Predicted | (10) |
| *Bacteroides ovatus ATCC 8483* | Bacteroidetes | Predicted | (10) |
| *Bacteroides ovatus SD CC 2a* | Bacteroidetes | Predicted | (10) |
| *Bacteroides ovatus SD CMC 3f* | Bacteroidetes | Predicted | (10) |
| *Bacteroides plebeius DSM 17135* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 1\_1\_30* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 1\_1\_6* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_1\_16* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_1\_22* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_1\_33B* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_1\_7* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_2\_4* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_1\_19* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_1\_23* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_1\_33FAA* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_1\_40A* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_2\_5* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 4\_1\_36* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 4\_3\_47FAA* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 9\_1\_42FAA* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. D1* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. D2* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. D20* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. D22* | Bacteroidetes | Predicted | (10) |
| *Bacteroides stercoris* | Bacteroidetes | Predicted | (13) |
| *Bacteroides stercoris ATCC 43183* | Bacteroidetes | Predicted | (10) |
| *Bacteroides thetaiotaomicron CL09T03C10* | Bacteroidetes | Predicted | (10) |
| *Bacteroides thetaiotaomicron dnLKV9* | Bacteroidetes | Predicted | (10) |
| *Bacteroides thetaiotaomicron VPI-5482* | Bacteroidetes | Predicted and experimentally proven | (10) |
| *Bacteroides uniformis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides uniformis ATCC 8492* | Bacteroidetes | Predicted | (10) |
| *Bacteroides vulgatus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides vulgatus ATCC 8482* | Bacteroidetes | Predicted and experimentally proven | (10) |
| *Bacteroides vulgatus PC510* | Bacteroidetes | Predicted | (10) |
| *Bacteroides xylanisolvens SD CC 1b* | Bacteroidetes | Predicted | (10) |
| *Bacteroides xylanisolvens XB1A* | Bacteroidetes | Predicted | (10) |
| *Parabacteroides goldsteinii* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides distasonis* | Bacteroidetes | Predicted | (10,13) |
| *Parabacteroides johnsonii DSM 18315* | Bacteroidetes | Predicted | (10) |
| *Parabacteroides merdae* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides merdae ATCC 43184* | Bacteroidetes | Predicted | (10) |
| *Parabacteroides sp. D13* | Bacteroidetes | Predicted | (10) |
| *Prevotella copri DSM 18205* | Bacteroidetes | Predicted | (10) |
| *Alistipes finegoldii* | Bacteroidetes | Predicted | (13) |
| *Alistipes obesi* | Bacteroidetes | Predicted | (13) |
| *Alistipes onderdonkii* | Bacteroidetes | Predicted | (13) |
| *Alistipes putredinis* | Bacteroidetes | Predicted | (13) |
| *Alistipes shahii* | Bacteroidetes | Predicted | (13) |
| *Alistipes timonensis* | Bacteroidetes | Predicted | (13) |
| *Alistipes ihumii* | Bacteroidetes | Predicted | (13) |
| *Alistipes indistinctus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides caccae* | Bacteroidetes | Predicted | (13) |
| *Bacteroides caecimuris* | Bacteroidetes | Predicted | (13) |
| *Bacteroides cellulosilyticus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides dorei* | Bacteroidetes | Predicted | (13) |
| *Bacteroides faecichinchillae* | Bacteroidetes | Predicted | (13) |
| *Bacteroides faecis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides finegoldii* | Bacteroidetes | Predicted | (13) |
| *Bacteroides fragilis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides nordii* | Bacteroidetes | Predicted | (13) |
| *Bacteroides oleiciplenus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides ovatus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides salyersiae* | Bacteroidetes | Predicted | (13) |
| *Bacteroides stercorirosoris* | Bacteroidetes | Predicted | (13) |
| *Bacteroides stercoris* | Bacteroidetes | Predicted | (13) |
| *Bacteroides thetaiotaomicron* | Bacteroidetes | Predicted | (13) |
| *Bacteroides uniformis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides vulgatus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides xylanisolvens* | Bacteroidetes | Predicted | (13) |
| *Barnesiella intestinihominis* | Bacteroidetes | Predicted | (13) |
| *Butyricimonas virosa* | Bacteroidetes | Predicted | (13) |
| *Coprobacter fastidiosus* | Bacteroidetes | Predicted | (13) |
| *Muribaculum intestinale* | Bacteroidetes | Predicted | (13) |
| *Odoribacter splanchnicus* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides distasonis* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides goldsteinii* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides gordonii* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides merdae* | Bacteroidetes | Predicted | (13) |
| *Paraprevotella clara* | Bacteroidetes | Predicted | (13) |
| *Tidjanibacter massiliensis* | Bacteroidetes | Predicted | (13) |
| *Anaerofustis stercorihominis DSM 17244* | Firmicutes | Predicted | (10) |
| *Anaerostipes caccae DSM 14662* | Firmicutes | Predicted | (10) |
| *Anaerostipes sp. 3\_2\_56FAA* | Firmicutes | Predicted | (10) |
| *Bacillus subtilis subsp. subtilis str. 168* | Firmicutes | Predicted | (10) |
| *Blautia hansenii DSM 20583* | Firmicutes | Predicted | (10) |
| *Butyrivibrio fibrisolvens 16/4* | Firmicutes | Predicted | (10) |
| *Catenibacterium mitsuokai DSM 15897* | Firmicutes | Predicted | (10) |
| *Clostridium bartlettii DSM 16795* | Firmicutes | Predicted | (10) |
| *Clostridium bolteae ATCC BAA-613* | Firmicutes | Predicted | (10) |
| *Clostridium clostridioforme 2\_1\_49FAA* | Firmicutes | Predicted | (10) |
| *Clostridium difficile CD196* | Firmicutes | Predicted and experimentally proven | (10) |
| *Clostridium difficile NAP07* | Firmicutes | Predicted and experimentally proven | (10) |
| *Clostridium difficile NAP08* | Firmicutes | Predicted and experimentally proven | (10) |
| *Clostridium hiranonis DSM 13275* | Firmicutes | Predicted | (10) |
| *Clostridium hylemonae DSM 15053* | Firmicutes | Predicted | (10) |
| *Clostridium leptum DSM 753* | Firmicutes | Predicted | (10) |
| *Clostridium methylpentosum DSM 5476* | Firmicutes | Predicted | (10) |
| *Clostridium nexile DSM 1787* | Firmicutes | Predicted | (10) |
| *Clostridium ramosum DSM 1402* | Firmicutes | Predicted | (10) |
| *Clostridium scindens ATCC 35704* | Firmicutes | Predicted | (10) |
| *Clostridium sp. L2-50* | Firmicutes | Predicted | (10) |
| *Clostridium sp. SS2/1* | Firmicutes | Predicted | (10) |
| *Clostridium spiroforme DSM 1552* | Firmicutes | Predicted | (10) |
| *Clostridium sporogenes ATCC 15579* | Firmicutes | Predicted | (10) |
| *Clostridium symbiosum WAL-14163* | Firmicutes | Predicted | (10) |
| *Clostridium symbiosum WAL-14673* | Firmicutes | Predicted | (10) |
| *Coprococcus comes ATCC 27758* | Firmicutes | Predicted | (10) |
| *Coprococcus eutactus ATCC 27759* | Firmicutes | Predicted | (10) |
| *Dorea longicatena DSM 13814* | Firmicutes | Predicted | (10) |
| *Erysipelotrichaceae bacterium 3\_1\_53* | Firmicutes | Predicted | (10) |
| *Eubacterium biforme DSM 3989* | Firmicutes | Predicted | (10) |
| *Eubacterium hallii DSM 3353* | Firmicutes | Predicted | (10) |
| *Eubacterium rectale DSM 17629* | Firmicutes | Predicted | (10) |
| *Eubacterium rectale M104/1* | Firmicutes | Predicted | (10) |
| *Eubacterium siraeum 70/3* | Firmicutes | Predicted | (10) |
| *Eubacterium siraeum DSM 15702* | Firmicutes | Predicted | (10) |
| *Eubacterium ventriosum ATCC 27560* | Firmicutes | Predicted | (10) |
| *Lachnospiraceae bacterium 5\_1\_63FAA* | Firmicutes | Predicted | (10) |
| *Lachnospiraceae bacterium 8\_1\_57FAA* | Firmicutes | Predicted | (10) |
| *Lactobacillus brevis subsp. gravesensis ATCC 27305* | Firmicutes | Predicted | (10) |
| *Lactobacillus ruminis ATCC 25644* | Firmicutes | Predicted | (10) |
| *Listeria monocytogenes str. 1/2a F6854* | Firmicutes | Predicted and experimentally proven | (10) |
| *Megamonas hypermegale ART12/1* | Firmicutes | Predicted | (10) |
| *Roseburia intestinalis L1-82* | Firmicutes | Predicted | (10) |
| *Roseburia inulinivorans DSM 16841* | Firmicutes | Predicted | (10) |
| *Ruminococcus bromii L2-63* | Firmicutes | Predicted | (10) |
| *Ruminococcus gnavus ATCC 29149* | Firmicutes | Predicted | (10) |
| *Ruminococcus lactaris ATCC 29176* | Firmicutes | Predicted | (10) |
| *Ruminococcus obeum A2-162* | Firmicutes | Predicted | (10) |
| *Ruminococcus sp. 18P13* | Firmicutes | Predicted | (10) |
| *Ruminococcus sp. 5\_1\_39BFAA* | Firmicutes | Predicted | (10) |
| *Ruminococcus sp. SR1/5* | Firmicutes | Predicted | (10) |
| *Ruminococcus torques ATCC 27756* | Firmicutes | Predicted | (10) |
| *Ruminococcus torques L2-14* | Firmicutes | Predicted | (10) |
| *Streptococcus infantarius subsp. infantarius ATCC BAA-102* | Firmicutes | Predicted | (10) |
| *[Clostridium] cocleatum* | Firmicutes | Predicted | (13) |
| *[Clostridium] glycyrrhizinilyticum* | Firmicutes | Predicted | (13) |
| *[Clostridium] hylemonae* | Firmicutes | Predicted | (13) |
| *[Clostridium] leptum* | Firmicutes | Predicted | (13) |
| *[Clostridium] spiroforme* | Firmicutes | Predicted | (13) |
| *Bariatricus massiliensis* | Firmicutes | Predicted | (13) |
| *Erysipelatoclostridium ramosum* | Firmicutes | Predicted | (13) |
| *Eubacterium coprostanoligenes* | Firmicutes | Predicted | (13) |
| *Eubacterium ventriosum* | Firmicutes | Predicted | (13) |
| *Fusicatenibacter saccharivorans* | Firmicutes | Predicted | (13) |
| *Gemmiger formicilis* | Firmicutes | Predicted | (13) |
| *Ruminococcus champanellensis* | Firmicutes | Predicted | (13) |
| *Sellimonas intestinalis* | Firmicutes | Predicted | (13) |
| *Tyzzerella nexilis* | Firmicutes | Predicted | (13) |
| *[Clostridium] methylpentosum* | Firmicutes | Predicted | (13) |
| *[Clostridium] scindens* | Firmicutes | Predicted | (13) |
| *Anaerofustis stercorihominis* | Firmicutes | Predicted | (13) |
| *Blautia glucerasea* | Firmicutes | Predicted | (13) |
| *Pseudobutyrivibrio ruminis* | Firmicutes | Predicted | (13) |
| *Ruminococcus faecis* | Firmicutes | Predicted | (13) |
| *[Ruminococcus] torques* | Firmicutes | Predicted | (13) |
| *[Clostridium] innocuum* | Firmicutes | Predicted | (13) |
| *Blautia obeum* | Firmicutes | Predicted | (13) |
| *[Clostridium] clostridioforme* | Firmicutes | Predicted | (13) |
| *[Clostridium] symbiosum* | Firmicutes | Predicted | (13) |
| *[Clostridium] viride* | Firmicutes | Predicted | (13) |
| *Clostridium saudiense* | Firmicutes | Predicted | (13) |
| *Coprococcus catus* | Firmicutes | Predicted | (13) |
| *Faecalicatena contorta* | Firmicutes | Predicted | (13) |
| *Holdemanella biformis* | Firmicutes | Predicted | (13) |
| *Sporobacter termitidis* | Firmicutes | Predicted | (13) |
| *[Eubacterium] eligens* | Firmicutes | Predicted | (13) |
| *[Eubacterium] hallii* | Firmicutes | Predicted | (13) |
| *[Eubacterium] rectale* | Firmicutes | Predicted | (13) |
| *Anaerobium acetethylicum* | Firmicutes | Predicted | (13) |
| *Anaerostipes hadrus* | Firmicutes | Predicted | (13) |
| *Anaerotignum propionicum* | Firmicutes | Predicted | (13) |
| *Blautia luti* | Firmicutes | Predicted | (13) |
| *Blautia wexlerae* | Firmicutes | Predicted | (13) |
| *Clostridium perfringens* | Firmicutes | Predicted | (13) |
| *Coprococcus comes* | Firmicutes | Predicted | (13) |
| *Coprococcus eutactus* | Firmicutes | Predicted | (13) |
| *Dorea longicatena* | Firmicutes | Predicted | (13) |
| *Eubacterium callanderi* | Firmicutes | Predicted | (13) |
| *Eubacterium limosum* | Firmicutes | Predicted | (13) |
| *Eubacterium ramulus* | Firmicutes | Predicted | (13) |
| *Peptococcus niger* | Firmicutes | Predicted | (13) |
| *Robinsoniella peoriensis* | Firmicutes | Predicted | (13) |
| *Roseburia faecis* | Firmicutes | Predicted | (13) |
| *Ruminococcus albus* | Firmicutes | Predicted | (13) |
| *Ruminococcus gauvreauii* | Firmicutes | Predicted | (13) |
| *Fusobacterium mortiferum ATCC 9817* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 1\_1\_41FAA* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 2\_1\_31* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 3\_1\_27* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 3\_1\_33* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 3\_1\_36A2* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 4\_1\_13* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 7\_1* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. D11* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. D12* | Fusobacteria | Predicted | (10) |
| *Fusobacterium ulcerans ATCC 49185* | Fusobacteria | Predicted | (10) |
| *Fusobacterium varium ATCC 27725* | Fusobacteria | Predicted | (10) |
| *Victivallis vadensis* | Lentisphaerae | Predicted | (13) |
| *Acinetobacter junii SH205* | Proteobacteria | Predicted | (10) |
| *Bilophila wadsworthia 3\_1\_6* | Proteobacteria | Predicted | (10) |
| *Citrobacter sp. 30\_2* | Proteobacteria | Predicted | (10) |
| *Citrobacter youngae ATCC 29220* | Proteobacteria | Predicted | (10) |
| *Desulfovibrio piger ATCC 29098* | Proteobacteria | Predicted | (10) |
| *Desulfovibrio sp. 3\_1\_syn3* | Proteobacteria | Predicted | (10) |
| *Enterobacter cancerogenus ATCC 35316* | Proteobacteria | Predicted | (10) |
| *Enterobacteriaceae bacterium 9\_2\_54FAA* | Proteobacteria | Predicted | (10) |
| *Escherichia coli O157:H7 str. Sakai* | Proteobacteria | Predicted | (10) |
| *Escherichia coli SE11* | Proteobacteria | Predicted | (10) |
| *Escherichia coli str. K-12 substr. MG1655* | Proteobacteria | Predicted and experimentally proven | (10) |
| *Escherichia coli UTI89* | Proteobacteria | Predicted | (10) |
| *Escherichia sp. 3\_2\_53FAA* | Proteobacteria | Predicted | (10) |
| *Escherichia sp. 4\_1\_40B* | Proteobacteria | Predicted | (10) |
| *Helicobacter canadensis MIT 98-5491* | Proteobacteria | Predicted | (10) |
| *Helicobacter cinaedi CCUG 18818* | Proteobacteria | Predicted | (10) |
| *Helicobacter pullorum MIT 98-5489* | Proteobacteria | Predicted | (10) |
| *Helicobacter pylori 26695* | Proteobacteria | Predicted and experimentally proven | (10) |
| *Helicobacter winghamensis ATCC BAA-430* | Proteobacteria | Predicted | (10) |
| *Klebsiella pneumoniae 1162281* | Proteobacteria | Predicted and experimentally proven | (10) |
| *Klebsiella sp. 1\_1\_55* | Proteobacteria | Predicted | (10) |
| *Oxalobacter formigenes HOxBLS* | Proteobacteria | Predicted | (10) |
| *Oxalobacter formigenes OXCC13* | Proteobacteria | Predicted | (10) |
| *Providencia alcalifaciens DSM 30120* | Proteobacteria | Predicted | (10) |
| *Providencia rettgeri DSM 1131* | Proteobacteria | Predicted | (10) |
| *Providencia rustigianii DSM 4541* | Proteobacteria | Predicted | (10) |
| *Providencia stuartii ATCC 25827* | Proteobacteria | Predicted | (10) |
| *Ralstonia sp. 5\_7\_47FAA* | Proteobacteria | Predicted | (10) |
| *Salmonella enterica subsp. enterica serovar Typhimurium str.* | Proteobacteria | Predicted and experimentally proven | (10) |
| *Rhodospirillum rubrum* | Proteobacteria | Predicted | (13) |
| *Desulfovibrio piger* | Proteobacteria | Predicted | (13) |
| *Escherichia fergusonii* | Proteobacteria | Predicted | (13) |
| *Akkermansia muciniphila* | Verrucomicrobiota | Predicted | (13) |
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| **Pantothenate (B5)** | *Actinomyces odontolyticus ATCC 17982* | Actinobacteria | Predicted | (10) |
| *Eggerthella sp. 1\_3\_56FAA* | Actinobacteria | Predicted | (10) |
| *Corynebacterium ammoniagenes DSM 20306* | Actinobacteria | Predicted | (10) |
| *Adlercreutzia equolifaciens* | Actinomycetota | Predicted | (13) |
| *Corynebacterium pseudodiphtheriticum* | Actinomycetota | Predicted | (13) |
| *Prevotella salivae DSM 15606* | Bacteroidetes | Predicted | (10) |
| *Alistipes indistinctus YIT 12060* | Bacteroidetes | Predicted | (10) |
| *Bacteroides caccae ATCC 43185* | Bacteroidetes | Predicted | (10) |
| *Bacteroides cellulosilyticus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides cellulosilyticus DSM 14838* | Bacteroidetes | Predicted | (10) |
| *Bacteroides coprocola DSM 17136* | Bacteroidetes | Predicted | (10) |
| *Bacteroides coprophilus DSM 18228* | Bacteroidetes | Predicted | (10) |
| *Bacteroides dorei DSM 17855* | Bacteroidetes | Predicted | (10) |
| *Bacteroides eggerthii 1\_2\_48FAA* | Bacteroidetes | Predicted | (10) |
| *Bacteroides eggerthii DSM 20697* | Bacteroidetes | Predicted | (10) |
| *Bacteroides finegoldii DSM 17565* | Bacteroidetes | Predicted | (10) |
| *Bacteroides fragilis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides fragilis 3\_1\_12* | Bacteroidetes | Predicted | (10) |
| *Bacteroides fragilis NCTC 9343* | Bacteroidetes | Predicted and experimentally proven | (10) |
| *Bacteroides fragilis YCH46* | Bacteroidetes | Predicted | (10) |
| *Bacteroides intestinalis DSM 17393* | Bacteroidetes | Predicted | (10) |
| *Bacteroides ovatus ATCC 8483* | Bacteroidetes | Predicted | (10) |
| *Bacteroides ovatus SD CC 2a* | Bacteroidetes | Predicted | (10) |
| *Bacteroides ovatus SD CMC 3f* | Bacteroidetes | Predicted | (10) |
| *Bacteroides plebeius DSM 17135* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 1\_1\_30* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 1\_1\_6* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_1\_16* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_1\_22* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_1\_33B* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_1\_7* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_2\_4* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_1\_19* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_1\_23* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_1\_33FAA* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_1\_40A* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_2\_5* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 4\_1\_36* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 4\_3\_47FAA* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 9\_1\_42FAA* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. D1* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. D2* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. D20* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. D22* | Bacteroidetes | Predicted | (10) |
| *Bacteroides stercoris* | Bacteroidetes | Predicted | (13) |
| *Bacteroides stercoris ATCC 43183* | Bacteroidetes | Predicted | (10) |
| *Bacteroides thetaiotaomicron CL09T03C10* | Bacteroidetes | Predicted | (10) |
| *Bacteroides thetaiotaomicron dnLKV9* | Bacteroidetes | Predicted | (10) |
| *Bacteroides thetaiotaomicron VPI-5482* | Bacteroidetes | Predicted and experimentally proven | (10) |
| *Bacteroides uniformis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides uniformis ATCC 8492* | Bacteroidetes | Predicted | (10) |
| *Bacteroides vulgatus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides vulgatus ATCC 8482* | Bacteroidetes | Predicted and experimentally proven | (10) |
| *Bacteroides vulgatus PC510* | Bacteroidetes | Predicted | (10) |
| *Bacteroides xylanisolvens SD CC 1b* | Bacteroidetes | Predicted | (10) |
| *Bacteroides xylanisolvens XB1A* | Bacteroidetes | Predicted | (10) |
| *Parabacteroides goldsteinii* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides distasonis* | Bacteroidetes | Predicted | (10,13) |
| *Parabacteroides johnsonii DSM 18315* | Bacteroidetes | Predicted | (10) |
| *Parabacteroides merdae* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides merdae ATCC 43184* | Bacteroidetes | Predicted | (10) |
| *Parabacteroides sp. D13* | Bacteroidetes | Predicted | (10) |
| *Prevotella copri DSM 18205* | Bacteroidetes | Predicted | (10) |
| *Alistipes finegoldii* | Bacteroidetes | Predicted | (13) |
| *Alistipes obesi* | Bacteroidetes | Predicted | (13) |
| *Alistipes onderdonkii* | Bacteroidetes | Predicted | (13) |
| *Alistipes putredinis* | Bacteroidetes | Predicted | (13) |
| *Alistipes shahii* | Bacteroidetes | Predicted | (13) |
| *Alistipes timonensis* | Bacteroidetes | Predicted | (13) |
| *Alistipes ihumii* | Bacteroidetes | Predicted | (13) |
| *Alistipes indistinctus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides caccae* | Bacteroidetes | Predicted | (13) |
| *Bacteroides caecimuris* | Bacteroidetes | Predicted | (13) |
| *Bacteroides cellulosilyticus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides dorei* | Bacteroidetes | Predicted | (13) |
| *Bacteroides faecichinchillae* | Bacteroidetes | Predicted | (13) |
| *Bacteroides faecis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides finegoldii* | Bacteroidetes | Predicted | (13) |
| *Bacteroides fragilis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides nordii* | Bacteroidetes | Predicted | (13) |
| *Bacteroides oleiciplenus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides ovatus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides salyersiae* | Bacteroidetes | Predicted | (13) |
| *Bacteroides stercorirosoris* | Bacteroidetes | Predicted | (13) |
| *Bacteroides stercoris* | Bacteroidetes | Predicted | (13) |
| *Bacteroides thetaiotaomicron* | Bacteroidetes | Predicted | (13) |
| *Bacteroides uniformis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides vulgatus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides xylanisolvens* | Bacteroidetes | Predicted | (13) |
| *Barnesiella intestinihominis* | Bacteroidetes | Predicted | (13) |
| *Butyricimonas virosa* | Bacteroidetes | Predicted | (13) |
| *Coprobacter fastidiosus* | Bacteroidetes | Predicted | (13) |
| *Muribaculum intestinale* | Bacteroidetes | Predicted | (13) |
| *Odoribacter splanchnicus* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides distasonis* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides goldsteinii* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides gordonii* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides merdae* | Bacteroidetes | Predicted | (13) |
| *Paraprevotella clara* | Bacteroidetes | Predicted | (13) |
| *Tidjanibacter massiliensis* | Bacteroidetes | Predicted | (13) |
| *Acidaminococcus sp. D21* | Firmicutes | Predicted | (10) |
| *Anaerococcus hydrogenalis DSM 7454* | Firmicutes | Predicted | (10) |
| *Butyrivibrio crossotus DSM 2876* | Firmicutes | Predicted | (10) |
| *Enterococcus faecalis TX0104* | Firmicutes | Predicted | (10) |
| *Enterococcus faecalis TX1322* | Firmicutes | Predicted | (10) |
| *Enterococcus faecalis TX2134* | Firmicutes | Predicted | (10) |
| *Enterococcus faecium DO* | Firmicutes | Predicted | (10) |
| *Listeria grayi DSM 20601* | Firmicutes | Predicted | (10) |
| *Phascolarctobacterium sp. YIT 12067* | Firmicutes | Predicted | (10) |
| *Veillonella sp. 3\_1\_44* | Firmicutes | Predicted | (10) |
| *Veillonella sp. 6\_1\_27* | Firmicutes | Predicted | (10) |
| *Anaerofustis stercorihominis DSM 17244* | Firmicutes | Predicted | (10) |
| *Anaerostipes caccae DSM 14662* | Firmicutes | Predicted | (10) |
| *Anaerostipes sp. 3\_2\_56FAA* | Firmicutes | Predicted | (10) |
| *Bacillus subtilis subsp. subtilis str. 168* | Firmicutes | Predicted | (10) |
| *Butyrivibrio fibrisolvens 16/4* | Firmicutes | Predicted | (10) |
| *Clostridium hiranonis DSM 13275* | Firmicutes | Predicted | (10) |
| *Clostridium methylpentosum DSM 5476* | Firmicutes | Predicted | (10) |
| *Clostridium sp. L2-50* | Firmicutes | Predicted | (10) |
| *Clostridium sp. SS2/1* | Firmicutes | Predicted | (10) |
| *Clostridium sporogenes ATCC 15579* | Firmicutes | Predicted | (10) |
| *Coprococcus comes ATCC 27758* | Firmicutes | Predicted | (10) |
| *Coprococcus eutactus ATCC 27759* | Firmicutes | Predicted | (10) |
| *Dorea longicatena DSM 13814* | Firmicutes | Predicted | (10) |
| *Eubacterium hallii DSM 3353* | Firmicutes | Predicted | (10) |
| *Eubacterium rectale DSM 17629* | Firmicutes | Predicted | (10) |
| *Eubacterium rectale M104/1* | Firmicutes | Predicted | (10) |
| *Eubacterium ventriosum ATCC 27560* | Firmicutes | Predicted | (10) |
| *Lachnospiraceae bacterium 5\_1\_63FAA* | Firmicutes | Predicted | (10) |
| *Lachnospiraceae bacterium 8\_1\_57FAA* | Firmicutes | Predicted | (10) |
| *Listeria monocytogenes str. 1/2a F6854* | Firmicutes | Predicted and experimentally proven | (10) |
| *Megamonas hypermegale ART12/1* | Firmicutes | Predicted | (10) |
| *Roseburia intestinalis L1-82* | Firmicutes | Predicted | (10) |
| *Ruminococcus lactaris ATCC 29176* | Firmicutes | Predicted | (10) |
| *Ruminococcus sp. 5\_1\_39BFAA* | Firmicutes | Predicted | (10) |
| *Ruminococcus sp. SR1/5* | Firmicutes | Predicted | (10) |
| *Ruminococcus torques ATCC 27756* | Firmicutes | Predicted | (10) |
| *Ruminococcus torques L2-14* | Firmicutes | Predicted | (10) |
| *Streptococcus infantarius subsp. infantarius ATCC BAA-102* | Firmicutes | Predicted | (10) |
| *Anaerotignum lactatifermentans* | Firmicutes | Predicted | (13) |
| *Eubacterium ventriosum* | Firmicutes | Predicted | (13) |
| *Gemmiger formicilis* | Firmicutes | Predicted | (13) |
| *[Clostridium] methylpentosum* | Firmicutes | Predicted | (13) |
| *Anaerofustis stercorihominis* | Firmicutes | Predicted | (13) |
| *Clostridium saudiense* | Firmicutes | Predicted | (13) |
| *Sporobacter termitidis* | Firmicutes | Predicted | (13) |
| *[Eubacterium] hallii* | Firmicutes | Predicted | (13) |
| *[Eubacterium] rectale* | Firmicutes | Predicted | (13) |
| *Anaerobium acetethylicum* | Firmicutes | Predicted | (13) |
| *Anaerostipes hadrus* | Firmicutes | Predicted | (13) |
| *Anaerotignum propionicum* | Firmicutes | Predicted | (13) |
| *Coprococcus eutactus* | Firmicutes | Predicted | (13) |
| *Eubacterium ramulus* | Firmicutes | Predicted | (13) |
| *Peptococcus niger* | Firmicutes | Predicted | (13) |
| *Roseburia faecis* | Firmicutes | Predicted | (13) |
| *Ruminococcus albus* | Firmicutes | Predicted | (13) |
| *Burkholderiales bacterium 1\_1\_47* | Proteobacteria | Predicted | (10) |
| *Campylobacter coli JV20* | Proteobacteria | Predicted | (10) |
| *Campylobacter upsaliensis JV21* | Proteobacteria | Predicted | (10) |
| *Edwardsiella tarda ATCC 23685* | Proteobacteria | Predicted | (10) |
| *Escherichia sp. 1\_1\_43* | Proteobacteria | Predicted | (10) |
| *Helicobacter bilis ATCC 43879* | Proteobacteria | Predicted | (10) |
| *Proteus penneri ATCC 35198* | Proteobacteria | Predicted | (10) |
| *Acinetobacter junii SH205* | Proteobacteria | Predicted | (10) |
| *Bilophila wadsworthia 3\_1\_6* | Proteobacteria | Predicted | (10) |
| *Citrobacter sp. 30\_2* | Proteobacteria | Predicted | (10) |
| *Citrobacter youngae ATCC 29220* | Proteobacteria | Predicted | (10) |
| *Desulfovibrio piger ATCC 29098* | Proteobacteria | Predicted | (10) |
| *Desulfovibrio sp. 3\_1\_syn3* | Proteobacteria | Predicted | (10) |
| *Enterobacter cancerogenus ATCC 35316* | Proteobacteria | Predicted | (10) |
| *Enterobacteriaceae bacterium 9\_2\_54FAA* | Proteobacteria | Predicted | (10) |
| *Escherichia coli O157:H7 str. Sakai* | Proteobacteria | Predicted | (10) |
| *Escherichia coli SE11* | Proteobacteria | Predicted | (10) |
| *Escherichia coli str. K-12 substr. MG1655* | Proteobacteria | Predicted and experimentally proven | (10) |
| *Escherichia coli UTI89* | Proteobacteria | Predicted | (10) |
| *Escherichia sp. 3\_2\_53FAA* | Proteobacteria | Predicted | (10) |
| *Escherichia sp. 4\_1\_40B* | Proteobacteria | Predicted | (10) |
| *Helicobacter canadensis MIT 98-5491* | Proteobacteria | Predicted | (10) |
| *Helicobacter cinaedi CCUG 18818* | Proteobacteria | Predicted | (10) |
| *Helicobacter pullorum MIT 98-5489* | Proteobacteria | Predicted | (10) |
| *Helicobacter pylori 26695* | Proteobacteria | Predicted and experimentally proven | (6,10) |
| *Helicobacter winghamensis ATCC BAA-430* | Proteobacteria | Predicted | (10) |
| *Klebsiella pneumoniae 1162281* | Proteobacteria | Predicted and experimentally proven | (10) |
| *Klebsiella sp. 1\_1\_55* | Proteobacteria | Predicted | (10) |
| *Oxalobacter formigenes HOxBLS* | Proteobacteria | Predicted | (10) |
| *Oxalobacter formigenes OXCC13* | Proteobacteria | Predicted | (10) |
| *Providencia alcalifaciens DSM 30120* | Proteobacteria | Predicted | (10) |
| *Providencia rettgeri DSM 1131* | Proteobacteria | Predicted | (10) |
| *Providencia rustigianii DSM 4541* | Proteobacteria | Predicted | (10) |
| *Providencia stuartii ATCC 25827* | Proteobacteria | Predicted | (10) |
| *Ralstonia sp. 5\_7\_47FAA* | Proteobacteria | Predicted | (10) |
| *Salmonella enterica subsp. enterica serovar Typhimurium str.* | Proteobacteria | Predicted and experimentally proven | (10) |
| *Pararhodospirillum photometricum* | Proteobacteria | Predicted | (13) |
| *Parasutterella excrementihominis* | Proteobacteria | Predicted | (13) |
| *Turicimonas muris* | Proteobacteria | Predicted | (13) |
| *Rhodospirillum rubrum* | Proteobacteria | Predicted | (13) |
| *Desulfovibrio piger* | Proteobacteria | Predicted | (13) |
| *Escherichia fergusonii* | Proteobacteria | Predicted | (13) |
| *Akkermansia muciniphila* | Verrucomicrobiota | Predicted | (13) |
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| **Pyridoxine (B6)** | *Bifidobacterium adolescentis* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium animalis subsp. lactis AD011* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium dentium ATCC 27678* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium gallicum DSM 20093* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium pseudocatenulatum DSM 20438* | Actinobacteria | Predicted | (10) |
| *Gordonibacter pamelaeae 7-10-1-b* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium angulatum DSM 20098* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium bifidum NCIMB 41171* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium breve DSM 20213 = JCM 1192* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium catenulatum DSM 16992* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium longum DJO10A* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium longum NCC2705* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium longum subsp. infantis 157F* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium longum subsp. infantis ATCC 15697* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium longum subsp. infantis ATCC 55813* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium longum subsp. infantis CCUG 52486* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium longum subsp. longum JCM 1217* | Actinobacteria | Predicted | (10) |
| *Collinsella aerofaciens ATCC 25986* | Actinobacteria | Predicted | (6,10) |
| *Actinomyces odontolyticus ATCC 17982* | Actinobacteria | Predicted | (10) |
| *Eggerthella sp. 1\_3\_56FAA* | Actinobacteria | Predicted | (10) |
| *Collinsella aerofaciens* | Actinobacteria | Predicted | (13) |
| *Adlercreutzia equolifaciens* | Actinomycetota | Predicted | (13) |
| *Corynebacterium pseudodiphtheriticum* | Actinomycetota | Predicted | (13) |
| *Prevotella salivae DSM 15606* | Bacteroidetes | Predicted | (10) |
| *Alistipes indistinctus YIT 12060* | Bacteroidetes | Predicted | (10) |
| *Bacteroides caccae ATCC 43185* | Bacteroidetes | Predicted | (10) |
| *Bacteroides cellulosilyticus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides cellulosilyticus DSM 14838* | Bacteroidetes | Predicted | (10) |
| *Bacteroides dorei DSM 17855* | Bacteroidetes | Predicted | (10) |
| *Bacteroides eggerthii 1\_2\_48FAA* | Bacteroidetes | Predicted | (10) |
| *Bacteroides eggerthii DSM 20697* | Bacteroidetes | Predicted | (10) |
| *Bacteroides finegoldii DSM 17565* | Bacteroidetes | Predicted | (10) |
| *Bacteroides fragilis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides fragilis 3\_1\_12* | Bacteroidetes | Predicted | (10) |
| *Bacteroides fragilis NCTC 9343* | Bacteroidetes | Predicted and experimentally proven | (10) |
| *Bacteroides fragilis YCH46* | Bacteroidetes | Predicted | (10) |
| *Bacteroides intestinalis DSM 17393* | Bacteroidetes | Predicted | (10) |
| *Bacteroides ovatus ATCC 8483* | Bacteroidetes | Predicted | (10) |
| *Bacteroides ovatus SD CC 2a* | Bacteroidetes | Predicted | (10) |
| *Bacteroides ovatus SD CMC 3f* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 1\_1\_30* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 1\_1\_6* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_1\_16* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_1\_22* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_1\_33B* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_1\_7* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_2\_4* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_1\_19* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_1\_23* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_1\_33FAA* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_1\_40A* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_2\_5* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 4\_1\_36* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 4\_3\_47FAA* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 9\_1\_42FAA* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. D1* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. D2* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. D20* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. D22* | Bacteroidetes | Predicted | (10) |
| *Bacteroides stercoris* | Bacteroidetes | Predicted | (13) |
| *Bacteroides stercoris ATCC 43183* | Bacteroidetes | Predicted | (10) |
| *Bacteroides thetaiotaomicron CL09T03C10* | Bacteroidetes | Predicted | (10) |
| *Bacteroides thetaiotaomicron dnLKV9* | Bacteroidetes | Predicted | (10) |
| *Bacteroides thetaiotaomicron VPI-5482* | Bacteroidetes | Predicted and experimentally proven | (10) |
| *Bacteroides uniformis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides uniformis ATCC 8492* | Bacteroidetes | Predicted | (10) |
| *Bacteroides vulgatus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides vulgatus ATCC 8482* | Bacteroidetes | Predicted and experimentally proven | (10) |
| *Bacteroides vulgatus PC510* | Bacteroidetes | Predicted | (10) |
| *Bacteroides xylanisolvens SD CC 1b* | Bacteroidetes | Predicted | (10) |
| *Bacteroides xylanisolvens XB1A* | Bacteroidetes | Predicted | (10) |
| *Parabacteroides goldsteinii* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides distasonis* | Bacteroidetes | Predicted | (10,13) |
| *Parabacteroides johnsonii DSM 18315* | Bacteroidetes | Predicted | (10) |
| *Parabacteroides merdae* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides merdae ATCC 43184* | Bacteroidetes | Predicted | (10) |
| *Parabacteroides sp. D13* | Bacteroidetes | Predicted | (10) |
| *Prevotella copri DSM 18205* | Bacteroidetes | Predicted | (10) |
| *Alistipes finegoldii* | Bacteroidetes | Predicted | (13) |
| *Alistipes obesi* | Bacteroidetes | Predicted | (13) |
| *Alistipes onderdonkii* | Bacteroidetes | Predicted | (13) |
| *Alistipes putredinis* | Bacteroidetes | Predicted | (13) |
| *Alistipes shahii* | Bacteroidetes | Predicted | (13) |
| *Alistipes timonensis* | Bacteroidetes | Predicted | (13) |
| *Alistipes ihumii* | Bacteroidetes | Predicted | (13) |
| *Alistipes indistinctus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides caccae* | Bacteroidetes | Predicted | (13) |
| *Bacteroides caecimuris* | Bacteroidetes | Predicted | (13) |
| *Bacteroides cellulosilyticus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides dorei* | Bacteroidetes | Predicted | (13) |
| *Bacteroides faecichinchillae* | Bacteroidetes | Predicted | (13) |
| *Bacteroides faecis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides finegoldii* | Bacteroidetes | Predicted | (13) |
| *Bacteroides fragilis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides nordii* | Bacteroidetes | Predicted | (13) |
| *Bacteroides oleiciplenus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides ovatus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides salyersiae* | Bacteroidetes | Predicted | (13) |
| *Bacteroides stercorirosoris* | Bacteroidetes | Predicted | (13) |
| *Bacteroides stercoris* | Bacteroidetes | Predicted | (13) |
| *Bacteroides thetaiotaomicron* | Bacteroidetes | Predicted | (13) |
| *Bacteroides uniformis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides vulgatus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides xylanisolvens* | Bacteroidetes | Predicted | (13) |
| *Barnesiella intestinihominis* | Bacteroidetes | Predicted | (13) |
| *Butyricimonas virosa* | Bacteroidetes | Predicted | (13) |
| *Coprobacter fastidiosus* | Bacteroidetes | Predicted | (13) |
| *Muribaculum intestinale* | Bacteroidetes | Predicted | (13) |
| *Odoribacter splanchnicus* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides distasonis* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides goldsteinii* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides gordonii* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides merdae* | Bacteroidetes | Predicted | (13) |
| *Paraprevotella clara* | Bacteroidetes | Predicted | (13) |
| *Tidjanibacter massiliensis* | Bacteroidetes | Predicted | (13) |
| *Clostridium sp. 7\_2\_43FAA* | Firmicutes | Predicted | (10) |
| *Mitsuokella multacida DSM 20544* | Firmicutes | Predicted | (10) |
| *Streptococcus equinus ATCC 9812* | Firmicutes | Predicted | (10) |
| *Clostridium bartlettii DSM 16795* | Firmicutes | Predicted | (10) |
| *Clostridium leptum DSM 753* | Firmicutes | Predicted | (10) |
| *Eubacterium siraeum 70/3* | Firmicutes | Predicted | (10) |
| *Eubacterium siraeum DSM 15702* | Firmicutes | Predicted | (10) |
| *Lactobacillus brevis subsp. gravesensis ATCC 27305* | Firmicutes | Predicted | (10) |
| *Lactobacillus ruminis ATCC 25644* | Firmicutes | Predicted | (10) |
| *Ruminococcus gnavus ATCC 29149* | Firmicutes | Predicted | (10) |
| *Butyrivibrio crossotus DSM 2876* | Firmicutes | Predicted | (10) |
| *Listeria grayi DSM 20601* | Firmicutes | Predicted | (10) |
| *Phascolarctobacterium sp. YIT 12067* | Firmicutes | Predicted | (10) |
| *Anaerostipes caccae DSM 14662* | Firmicutes | Predicted | (10) |
| *Anaerostipes sp. 3\_2\_56FAA* | Firmicutes | Predicted | (10) |
| *Bacillus subtilis subsp. subtilis str. 168* | Firmicutes | Predicted | (10) |
| *Clostridium methylpentosum DSM 5476* | Firmicutes | Predicted | (10) |
| *Clostridium sp. L2-50* | Firmicutes | Predicted | (10) |
| *Clostridium sp. SS2/1* | Firmicutes | Predicted | (10) |
| *Clostridium sporogenes ATCC 15579* | Firmicutes | Predicted | (10) |
| *Coprococcus eutactus ATCC 27759* | Firmicutes | Predicted | (10) |
| *Dorea longicatena DSM 13814* | Firmicutes | Predicted | (10) |
| *Eubacterium hallii DSM 3353* | Firmicutes | Predicted | (10) |
| *Eubacterium rectale DSM 17629* | Firmicutes | Predicted | (10) |
| *Eubacterium rectale M104/1* | Firmicutes | Predicted | (10) |
| *Eubacterium ventriosum ATCC 27560* | Firmicutes | Predicted | (10) |
| *Lachnospiraceae bacterium 5\_1\_63FAA* | Firmicutes | Predicted | (10) |
| *Listeria monocytogenes str. 1/2a F6854* | Firmicutes | Predicted and experimentally proven | (10) |
| *Megamonas hypermegale ART12/1* | Firmicutes | Predicted | (10) |
| *Roseburia intestinalis L1-82* | Firmicutes | Predicted | (10) |
| *Ruminococcus lactaris ATCC 29176* | Firmicutes | Predicted | (10) |
| *Ruminococcus torques L2-14* | Firmicutes | Predicted | (10) |
| *Streptococcus infantarius subsp. infantarius ATCC BAA-102* | Firmicutes | Predicted | (10) |
| *[Clostridium] asparagiforme* | Firmicutes | Predicted | (13) |
| *[Clostridium] lavalense* | Firmicutes | Predicted | (13) |
| *[Clostridium] saccharolyticum* | Firmicutes | Predicted | (13) |
| *Agathobaculum desmolans* | Firmicutes | Predicted | (13) |
| *Anaerofilum pentosovorans* | Firmicutes | Predicted | (13) |
| *Anaerotruncus colihominis* | Firmicutes | Predicted | (13) |
| *Anaerotruncus rubiinfantis* | Firmicutes | Predicted | (13) |
| *Christensenella minuta* | Firmicutes | Predicted | (13) |
| *Christensenella timonensis* | Firmicutes | Predicted | (13) |
| *Dielma fastidiosa* | Firmicutes | Predicted | (13) |
| *Eisenbergiella tayi* | Firmicutes | Predicted | (13) |
| *Flavonifractor plautii* | Firmicutes | Predicted | (13) |
| *Flintibacter butyricus* | Firmicutes | Predicted | (13) |
| *Hungatella hathewayi* | Firmicutes | Predicted | (13) |
| *Intestinimonas butyriciproducens* | Firmicutes | Predicted | (13) |
| *Lutispora thermophila* | Firmicutes | Predicted | (13) |
| *Negativibacillus massiliensis* | Firmicutes | Predicted | (13) |
| *Neglecta timonensis* | Firmicutes | Predicted | (13) |
| *Phocea massiliensis* | Firmicutes | Predicted | (13) |
| *Romboutsia timonensis* | Firmicutes | Predicted | (13) |
| *Turicibacter sanguinis* | Firmicutes | Predicted | (13) |
| *Blautia schinkii* | Firmicutes | Predicted | (13) |
| *Christensenella massiliensis* | Firmicutes | Predicted | (13) |
| *Faecalibacterium prausnitzii* | Firmicutes | Predicted | (13) |
| *[Clostridium] celerecrescens* | Firmicutes | Predicted | (13) |
| *Enterococcus hirae* | Firmicutes | Predicted | (13) |
| *Intestinibacillus massiliensis* | Firmicutes | Predicted | (13) |
| *Oscillibacter ruminantium* | Firmicutes | Predicted | (13) |
| *Oscillibacter valericigenes* | Firmicutes | Predicted | (13) |
| *[Clostridium] amygdalinum* | Firmicutes | Predicted | (13) |
| *Caecibacter massiliensis* | Firmicutes | Predicted | (13) |
| *Emergencia timonensis* | Firmicutes | Predicted | (13) |
| *Peptoniphilus grossensis* | Firmicutes | Predicted | (13) |
| *[Clostridium] cocleatum* | Firmicutes | Predicted | (13) |
| *[Clostridium] glycyrrhizinilyticum* | Firmicutes | Predicted | (13) |
| *[Clostridium] hylemonae* | Firmicutes | Predicted | (13) |
| *[Clostridium] leptum* | Firmicutes | Predicted | (13) |
| *[Clostridium] spiroforme* | Firmicutes | Predicted | (13) |
| *Bariatricus massiliensis* | Firmicutes | Predicted | (13) |
| *Erysipelatoclostridium ramosum* | Firmicutes | Predicted | (13) |
| *Eubacterium coprostanoligenes* | Firmicutes | Predicted | (13) |
| *Fusicatenibacter saccharivorans* | Firmicutes | Predicted | (13) |
| *Ruminococcus champanellensis* | Firmicutes | Predicted | (13) |
| *Sellimonas intestinalis* | Firmicutes | Predicted | (13) |
| *[Clostridium] scindens* | Firmicutes | Predicted | (13) |
| *Blautia glucerasea* | Firmicutes | Predicted | (13) |
| *Pseudobutyrivibrio ruminis* | Firmicutes | Predicted | (13) |
| *Ruminococcus faecis* | Firmicutes | Predicted | (13) |
| *[Clostridium] innocuum* | Firmicutes | Predicted | (13) |
| *Blautia obeum* | Firmicutes | Predicted | (13) |
| *[Clostridium] clostridioforme* | Firmicutes | Predicted | (13) |
| *[Clostridium] symbiosum* | Firmicutes | Predicted | (13) |
| *[Clostridium] viride* | Firmicutes | Predicted | (13) |
| *Faecalicatena contorta* | Firmicutes | Predicted | (13) |
| *Holdemanella biformis* | Firmicutes | Predicted | (13) |
| *[Eubacterium] eligens* | Firmicutes | Predicted | (13) |
| *Blautia luti* | Firmicutes | Predicted | (13) |
| *Blautia wexlerae* | Firmicutes | Predicted | (13) |
| *Clostridium perfringens* | Firmicutes | Predicted | (13) |
| *Coprococcus comes* | Firmicutes | Predicted | (13) |
| *Dorea longicatena* | Firmicutes | Predicted | (13) |
| *Eubacterium callanderi* | Firmicutes | Predicted | (13) |
| *Eubacterium limosum* | Firmicutes | Predicted | (13) |
| *Robinsoniella peoriensis* | Firmicutes | Predicted | (13) |
| *Ruminococcus gauvreauii* | Firmicutes | Predicted | (13) |
| *[Ruminococcus] torques* | Firmicutes | Predicted | (13) |
| *Anaerotignum lactatifermentans* | Firmicutes | Predicted | (13) |
| *Eubacterium ventriosum* | Firmicutes | Predicted | (13) |
| *Gemmiger formicilis* | Firmicutes | Predicted | (13) |
| *[Clostridium] methylpentosum* | Firmicutes | Predicted | (13) |
| *Anaerofustis stercorihominis* | Firmicutes | Predicted | (13) |
| *Clostridium saudiense* | Firmicutes | Predicted | (13) |
| *Sporobacter termitidis* | Firmicutes | Predicted | (13) |
| *[Eubacterium] hallii* | Firmicutes | Predicted | (13) |
| *[Eubacterium] rectale* | Firmicutes | Predicted | (13) |
| *Anaerobium acetethylicum* | Firmicutes | Predicted | (13) |
| *Anaerostipes hadrus* | Firmicutes | Predicted | (13) |
| *Anaerotignum propionicum* | Firmicutes | Predicted | (13) |
| *Coprococcus eutactus* | Firmicutes | Predicted | (13) |
| *Eubacterium ramulus* | Firmicutes | Predicted | (13) |
| *Peptococcus niger* | Firmicutes | Predicted | (13) |
| *Roseburia faecis* | Firmicutes | Predicted | (13) |
| *Ruminococcus albus* | Firmicutes | Predicted | (13) |
| *Fusobacterium mortiferum ATCC 9817* | Fusobacteria | Predicted | (10) |
| *Fusobacterium ulcerans ATCC 49185* | Fusobacteria | Predicted | (10) |
| *Fusobacterium varium ATCC 27725* | Fusobacteria | Predicted | (10) |
| *Victivallis vadensis* | Lentisphaerae | Predicted | (13) |
| *Succinatimonas hippei YIT 12066* | Proteobacteria | Predicted | (10) |
| *Edwardsiella tarda ATCC 23685* | Proteobacteria | Predicted | (10) |
| *Proteus penneri ATCC 35198* | Proteobacteria | Predicted | (10) |
| *Acinetobacter junii SH205* | Proteobacteria | Predicted | (10) |
| *Bilophila wadsworthia 3\_1\_6* | Proteobacteria | Predicted | (10) |
| *Citrobacter sp. 30\_2* | Proteobacteria | Predicted | (10) |
| *Citrobacter youngae ATCC 29220* | Proteobacteria | Predicted | (10) |
| *Desulfovibrio piger ATCC 29098* | Proteobacteria | Predicted | (10) |
| *Desulfovibrio sp. 3\_1\_syn3* | Proteobacteria | Predicted | (10) |
| *Enterobacter cancerogenus ATCC 35316* | Proteobacteria | Predicted | (10) |
| *Enterobacteriaceae bacterium 9\_2\_54FAA* | Proteobacteria | Predicted | (10) |
| *Escherichia coli O157:H7 str. Sakai* | Proteobacteria | Predicted | (10) |
| *Escherichia coli SE11* | Proteobacteria | Predicted | (10) |
| *Escherichia coli str. K-12 substr. MG1655* | Proteobacteria | Predicted and experimentally proven | (10) |
| *Escherichia coli UTI89* | Proteobacteria | Predicted | (10) |
| *Escherichia sp. 3\_2\_53FAA* | Proteobacteria | Predicted | (10) |
| *Escherichia sp. 4\_1\_40B* | Proteobacteria | Predicted | (10) |
| *Klebsiella pneumoniae 1162281* | Proteobacteria | Predicted and experimentally proven | (10) |
| *Klebsiella sp. 1\_1\_55* | Proteobacteria | Predicted | (10) |
| *Providencia alcalifaciens DSM 30120* | Proteobacteria | Predicted | (10) |
| *Providencia rettgeri DSM 1131* | Proteobacteria | Predicted | (10) |
| *Providencia rustigianii DSM 4541* | Proteobacteria | Predicted | (10) |
| *Providencia stuartii ATCC 25827* | Proteobacteria | Predicted | (10) |
| *Ralstonia sp. 5\_7\_47FAA* | Proteobacteria | Predicted | (10) |
| *Salmonella enterica subsp. enterica serovar Typhimurium str.* | Proteobacteria | Predicted and experimentally proven | (10) |
| *Pararhodospirillum photometricum* | Proteobacteria | Predicted | (13) |
| *Parasutterella excrementihominis* | Proteobacteria | Predicted | (13) |
| *Turicimonas muris* | Proteobacteria | Predicted | (13) |
| *Rhodospirillum rubrum* | Proteobacteria | Predicted | (13) |
| *Desulfovibrio piger* | Proteobacteria | Predicted | (13) |
| *Escherichia fergusonii* | Proteobacteria | Predicted | (13) |
| *Akkermansia muciniphila* | Verrucomicrobiota | Predicted | (13) |
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| **Biotin (B7)** | *Corynebacterium pseudodiphtheriticum* | Actinomycetota | Predicted | (13) |
| *Bacteroides coprocola DSM 17136* | Bacteroidetes | Predicted | (10) |
| *Bacteroides coprophilus DSM 18228* | Bacteroidetes | Predicted | (10) |
| *Bacteroides plebeius DSM 17135* | Bacteroidetes | Predicted | (10) |
| *Alistipes indistinctus YIT 12060* | Bacteroidetes | Predicted | (10) |
| *Bacteroides caccae ATCC 43185* | Bacteroidetes | Predicted | (10) |
| *Bacteroides cellulosilyticus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides cellulosilyticus DSM 14838* | Bacteroidetes | Predicted | (10) |
| *Bacteroides dorei DSM 17855* | Bacteroidetes | Predicted | (10) |
| *Bacteroides eggerthii 1\_2\_48FAA* | Bacteroidetes | Predicted | (10) |
| *Bacteroides eggerthii DSM 20697* | Bacteroidetes | Predicted | (10) |
| *Bacteroides finegoldii DSM 17565* | Bacteroidetes | Predicted | (10) |
| *Bacteroides fragilis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides fragilis 3\_1\_12* | Bacteroidetes | Predicted | (10) |
| *Bacteroides fragilis NCTC 9343* | Bacteroidetes | Predicted and experimentally proven | (10) |
| *Bacteroides fragilis YCH46* | Bacteroidetes | Predicted | (10) |
| *Bacteroides intestinalis DSM 17393* | Bacteroidetes | Predicted | (10) |
| *Bacteroides ovatus ATCC 8483* | Bacteroidetes | Predicted | (10) |
| *Bacteroides ovatus SD CC 2a* | Bacteroidetes | Predicted | (10) |
| *Bacteroides ovatus SD CMC 3f* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 1\_1\_30* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 1\_1\_6* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_1\_16* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_1\_22* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_1\_33B* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_1\_7* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_2\_4* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_1\_19* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_1\_23* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_1\_33FAA* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_1\_40A* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_2\_5* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 4\_1\_36* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 4\_3\_47FAA* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 9\_1\_42FAA* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. D1* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. D2* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. D20* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. D22* | Bacteroidetes | Predicted | (10) |
| *Bacteroides stercoris* | Bacteroidetes | Predicted | (13) |
| *Bacteroides stercoris ATCC 43183* | Bacteroidetes | Predicted | (10) |
| *Bacteroides thetaiotaomicron CL09T03C10* | Bacteroidetes | Predicted | (10) |
| *Bacteroides thetaiotaomicron dnLKV9* | Bacteroidetes | Predicted | (10) |
| *Bacteroides thetaiotaomicron VPI-5482* | Bacteroidetes | Predicted and experimentally proven | (10) |
| *Bacteroides uniformis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides uniformis ATCC 8492* | Bacteroidetes | Predicted | (10) |
| *Bacteroides vulgatus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides vulgatus ATCC 8482* | Bacteroidetes | Predicted and experimentally proven | (10) |
| *Bacteroides vulgatus PC510* | Bacteroidetes | Predicted | (10) |
| *Bacteroides xylanisolvens SD CC 1b* | Bacteroidetes | Predicted | (10) |
| *Bacteroides xylanisolvens XB1A* | Bacteroidetes | Predicted | (10) |
| *Parabacteroides goldsteinii* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides distasonis* | Bacteroidetes | Predicted | (10,13) |
| *Parabacteroides johnsonii DSM 18315* | Bacteroidetes | Predicted | (10) |
| *Parabacteroides merdae* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides merdae ATCC 43184* | Bacteroidetes | Predicted | (10) |
| *Parabacteroides sp. D13* | Bacteroidetes | Predicted | (10) |
| *Alistipes ihumii* | Bacteroidetes | Predicted | (13) |
| *Alistipes indistinctus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides caccae* | Bacteroidetes | Predicted | (13) |
| *Bacteroides caecimuris* | Bacteroidetes | Predicted | (13) |
| *Bacteroides cellulosilyticus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides dorei* | Bacteroidetes | Predicted | (13) |
| *Bacteroides faecichinchillae* | Bacteroidetes | Predicted | (13) |
| *Bacteroides faecis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides finegoldii* | Bacteroidetes | Predicted | (13) |
| *Bacteroides fragilis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides nordii* | Bacteroidetes | Predicted | (13) |
| *Bacteroides oleiciplenus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides ovatus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides salyersiae* | Bacteroidetes | Predicted | (13) |
| *Bacteroides stercorirosoris* | Bacteroidetes | Predicted | (13) |
| *Bacteroides stercoris* | Bacteroidetes | Predicted | (13) |
| *Bacteroides thetaiotaomicron* | Bacteroidetes | Predicted | (13) |
| *Bacteroides uniformis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides vulgatus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides xylanisolvens* | Bacteroidetes | Predicted | (13) |
| *Barnesiella intestinihominis* | Bacteroidetes | Predicted | (13) |
| *Butyricimonas virosa* | Bacteroidetes | Predicted | (13) |
| *Coprobacter fastidiosus* | Bacteroidetes | Predicted | (13) |
| *Muribaculum intestinale* | Bacteroidetes | Predicted | (13) |
| *Odoribacter splanchnicus* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides distasonis* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides goldsteinii* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides gordonii* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides merdae* | Bacteroidetes | Predicted | (13) |
| *Paraprevotella clara* | Bacteroidetes | Predicted | (13) |
| *Ruminococcaceae bacterium D16* | Firmicutes | Predicted | (10) |
| *Veillonella sp. 3\_1\_44* | Firmicutes | Predicted | (10) |
| *Veillonella sp. 6\_1\_27* | Firmicutes | Predicted | (10) |
| *Bacillus subtilis subsp. subtilis str. 168* | Firmicutes | Predicted | (10) |
| *Megamonas hypermegale ART12/1* | Firmicutes | Predicted | (10) |
| *Ruminococcus torques L2-14* | Firmicutes | Predicted | (10) |
| *Butyricicoccus pullicaecorum* | Firmicutes | Predicted | (13) |
| *[Clostridium] saccharolyticum* | Firmicutes | Predicted | (13) |
| *Oscillibacter ruminantium* | Firmicutes | Predicted | (13) |
| *[Clostridium] symbiosum* | Firmicutes | Predicted | (13) |
| *[Clostridium] viride* | Firmicutes | Predicted | (13) |
| *Robinsoniella peoriensis* | Firmicutes | Predicted | (13) |
| *Anaerotignum lactatifermentans* | Firmicutes | Predicted | (13) |
| *Anaerobium acetethylicum* | Firmicutes | Predicted | (13) |
| *Anaerotignum propionicum* | Firmicutes | Predicted | (13) |
| *Ruminococcus albus* | Firmicutes | Predicted | (13) |
| *Fusobacterium gonidiaformans ATCC 25563* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 3\_1\_5R* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 1\_1\_41FAA* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 2\_1\_31* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 3\_1\_27* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 3\_1\_33* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 3\_1\_36A2* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 4\_1\_13* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 7\_1* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. D11* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. D12* | Fusobacteria | Predicted | (10) |
| *Fusobacterium mortiferum ATCC 9817* | Fusobacteria | Predicted | (10) |
| *Fusobacterium ulcerans ATCC 49185* | Fusobacteria | Predicted | (10) |
| *Fusobacterium varium ATCC 27725* | Fusobacteria | Predicted | (10) |
| *Victivallis vadensis* | Lentisphaerae | Predicted | (13) |
| *Campylobacter coli JV20* | Proteobacteria | Predicted | (10) |
| *Campylobacter upsaliensis JV21* | Proteobacteria | Predicted | (10) |
| *Helicobacter bilis ATCC 43879* | Proteobacteria | Predicted | (10) |
| *Helicobacter canadensis MIT 98-5491* | Proteobacteria | Predicted | (10) |
| *Helicobacter cinaedi CCUG 18818* | Proteobacteria | Predicted | (10) |
| *Helicobacter pullorum MIT 98-5489* | Proteobacteria | Predicted | (10) |
| *Helicobacter pylori 26695* | Proteobacteria | Predicted and experimentally proven | (10) |
| *Helicobacter winghamensis ATCC BAA-430* | Proteobacteria | Predicted | (10) |
| *Oxalobacter formigenes HOxBLS* | Proteobacteria | Predicted | (10) |
| *Oxalobacter formigenes OXCC13* | Proteobacteria | Predicted | (10) |
| *Succinatimonas hippei YIT 12066* | Proteobacteria | Predicted | (10) |
| *Edwardsiella tarda ATCC 23685* | Proteobacteria | Predicted | (10) |
| *Proteus penneri ATCC 35198* | Proteobacteria | Predicted | (10) |
| *Acinetobacter junii SH205* | Proteobacteria | Predicted | (10) |
| *Citrobacter sp. 30\_2* | Proteobacteria | Predicted | (10) |
| *Citrobacter youngae ATCC 29220* | Proteobacteria | Predicted | (10) |
| *Enterobacter cancerogenus ATCC 35316* | Proteobacteria | Predicted | (10) |
| *Enterobacteriaceae bacterium 9\_2\_54FAA* | Proteobacteria | Predicted | (10) |
| *Escherichia coli O157:H7 str. Sakai* | Proteobacteria | Predicted | (10) |
| *Escherichia coli SE11* | Proteobacteria | Predicted | (10) |
| *Escherichia coli str. K-12 substr. MG1655* | Proteobacteria | Predicted and experimentally proven | (10) |
| *Escherichia coli UTI89* | Proteobacteria | Predicted | (10) |
| *Escherichia sp. 3\_2\_53FAA* | Proteobacteria | Predicted | (10) |
| *Escherichia sp. 4\_1\_40B* | Proteobacteria | Predicted | (10) |
| *Klebsiella pneumoniae 1162281* | Proteobacteria | Predicted and experimentally proven | (10) |
| *Klebsiella sp. 1\_1\_55* | Proteobacteria | Predicted | (10) |
| *Providencia alcalifaciens DSM 30120* | Proteobacteria | Predicted | (10) |
| *Providencia rettgeri DSM 1131* | Proteobacteria | Predicted | (10) |
| *Providencia rustigianii DSM 4541* | Proteobacteria | Predicted | (10) |
| *Providencia stuartii ATCC 25827* | Proteobacteria | Predicted | (10) |
| *Ralstonia sp. 5\_7\_47FAA* | Proteobacteria | Predicted | (10) |
| *Salmonella enterica subsp. enterica serovar Typhimurium str.* | Proteobacteria | Predicted and experimentally proven | (10) |
| *Pararhodospirillum photometricum* | Proteobacteria | Predicted | (13) |
| *Desulfovibrio piger* | Proteobacteria | Predicted | (13) |
| *Escherichia fergusonii* | Proteobacteria | Predicted | (13) |
| *Akkermansia muciniphila* | Verrucomicrobiota | Predicted | (13) |
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| **Folate (B9)** | *Corynebacterium ammoniagenes DSM 20306* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium breve B 622* | Actinobacteria | Experimentally proven | (67)⁠ |
| *Bifidobacterium breve MB 234* | Actinobacteria | Experimentally proven | (67)⁠ |
| *Bifidobacterium breve MB 235* | Actinobacteria | Experimentally proven | (67)⁠ |
| *Bifidobacterium catenulatum DSMZ 16992* | Actinobacteria | Experimentally proven | (67)⁠ |
| *Bifidobacterium dentium MB 117* | Actinobacteria | Experimentally proven | (67)⁠ |
| *Bifidobacterium infantis ATCC 15697* | Actinobacteria | Experimentally proven | (67)⁠ |
| *Bifidobacterium longum MB 214* | Actinobacteria | Experimentally proven | (67)⁠ |
| *Bifidobacterium pseudocatenulatum MB 116* | Actinobacteria | Experimentally proven | (67)⁠ |
| *Bifidobacterium pseudocatenulatum MB 237* | Actinobacteria | Experimentally proven | (67)⁠ |
| *Bifidobacterium pseudocatenulatum MB 264* | Actinobacteria | Experimentally proven | (67)⁠ |
| *Bifidobacterium adolescentis MB 239* | Actinobacteria | Experimentally proven | (67)⁠ |
| *Bifidobacterium adolescentis* | Actinobacteria | Experimentally proven | (67)⁠ |
| *Bifidobacterium adolescentis F 200* | Actinobacteria | Experimentally proven | (67)⁠ |
| *Bifidobacterium adolescentis MB 106* | Actinobacteria | Experimentally proven | (67)⁠ |
| *Bifidobacterium bifidum* | Actinobacteria | Experimentally proven | (5,67)⁠ |
| *Bifidobacterium adolescentis 115* | Actinobacteria | Experimentally proven | (67)⁠ |
| *Bifidobacterium adolescentis 227* | Actinobacteria | Experimentally proven | (67)⁠ |
| *Bifidobacterium adolescentis MB 114* | Actinobacteria | Experimentally proven | (67)⁠ |
| *Bifidobacterium adolescentis DSMZ 20086* | Actinobacteria | Experimentally proven | (67) |
| *Bifidobacterium adolescentis* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium dentium ATCC 27678* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium bifidum NCIMB 41171* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium breve DSM 20213 = JCM 1192* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium longum subsp. infantis ATCC 15697* | Actinobacteria | Predicted and experimentally proven | (5,10,67)⁠ |
| *Collinsella aerofaciens* | Actinobacteria | Predicted | (13) |
| *Adlercreutzia equolifaciens* | Actinomycetota | Predicted | (13) |
| *Corynebacterium pseudodiphtheriticum* | Actinomycetota | Predicted | (13) |
| *Propionibacterium thoenii* | Actinomycetota | Experimentally proven | (68)⁠ |
| *Propionibacterium acidipropionici* | Actinomycetota | Experimentally proven | (68) |
| *Propionibacterium jensenii* | Actinomycetota | Experimentally proven | (68) |
| *Propionibacterium freudenreichii ssp. shermanii* | Actinomycetota | Experimentally proven | (68) |
| *Prevotella copri DSM 18205* | Bacteroidetes | Predicted | (10) |
| *Bacteroides coprocola DSM 17136* | Bacteroidetes | Predicted | (10) |
| *Bacteroides coprophilus DSM 18228* | Bacteroidetes | Predicted | (10) |
| *Bacteroides plebeius DSM 17135* | Bacteroidetes | Predicted | (10) |
| *Bacteroides caccae ATCC 43185* | Bacteroidetes | Predicted | (10) |
| *Bacteroides cellulosilyticus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides cellulosilyticus DSM 14838* | Bacteroidetes | Predicted | (10) |
| *Bacteroides dorei DSM 17855* | Bacteroidetes | Predicted | (10) |
| *Bacteroides eggerthii 1\_2\_48FAA* | Bacteroidetes | Predicted | (10) |
| *Bacteroides eggerthii DSM 20697* | Bacteroidetes | Predicted | (10) |
| *Bacteroides fragilis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides fragilis 3\_1\_12* | Bacteroidetes | Predicted | (10) |
| *Bacteroides fragilis NCTC 9343* | Bacteroidetes | Predicted and experimentally proven | (10) |
| *Bacteroides fragilis YCH46* | Bacteroidetes | Predicted | (10) |
| *Bacteroides intestinalis DSM 17393* | Bacteroidetes | Predicted | (10) |
| *Bacteroides ovatus ATCC 8483* | Bacteroidetes | Predicted | (10) |
| *Bacteroides ovatus SD CC 2a* | Bacteroidetes | Predicted | (10) |
| *Bacteroides ovatus SD CMC 3f* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 1\_1\_30* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 1\_1\_6* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_1\_16* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_1\_22* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_1\_33B* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_1\_7* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_2\_4* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_1\_19* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_1\_23* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_1\_33FAA* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_1\_40A* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_2\_5* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 4\_1\_36* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 4\_3\_47FAA* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 9\_1\_42FAA* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. D1* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. D2* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. D20* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. D22* | Bacteroidetes | Predicted | (10) |
| *Bacteroides stercoris* | Bacteroidetes | Predicted | (13) |
| *Bacteroides stercoris ATCC 43183* | Bacteroidetes | Predicted | (10) |
| *Bacteroides thetaiotaomicron dnLKV9* | Bacteroidetes | Predicted | (10) |
| *Bacteroides thetaiotaomicron VPI-5482* | Bacteroidetes | Predicted and experimentally proven | (10) |
| *Bacteroides uniformis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides uniformis ATCC 8492* | Bacteroidetes | Predicted | (10) |
| *Bacteroides vulgatus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides vulgatus ATCC 8482* | Bacteroidetes | Predicted and experimentally proven | (10) |
| *Bacteroides vulgatus PC510* | Bacteroidetes | Predicted | (10) |
| *Bacteroides xylanisolvens SD CC 1b* | Bacteroidetes | Predicted | (10) |
| *Bacteroides xylanisolvens XB1A* | Bacteroidetes | Predicted | (10) |
| *Parabacteroides goldsteinii* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides distasonis* | Bacteroidetes | Predicted | (10,13) |
| *Parabacteroides johnsonii DSM 18315* | Bacteroidetes | Predicted | (10) |
| *Parabacteroides merdae* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides merdae ATCC 43184* | Bacteroidetes | Predicted | (10) |
| *Parabacteroides sp. D13* | Bacteroidetes | Predicted | (10) |
| *Alistipes finegoldii* | Bacteroidetes | Predicted | (13) |
| *Alistipes obesi* | Bacteroidetes | Predicted | (13) |
| *Alistipes onderdonkii* | Bacteroidetes | Predicted | (13) |
| *Alistipes putredinis* | Bacteroidetes | Predicted | (13) |
| *Alistipes shahii* | Bacteroidetes | Predicted | (13) |
| *Alistipes timonensis* | Bacteroidetes | Predicted | (13) |
| *Tidjanibacter massiliensis* | Bacteroidetes | Predicted | (13) |
| *Alistipes ihumii* | Bacteroidetes | Predicted | (13) |
| *Alistipes indistinctus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides caccae* | Bacteroidetes | Predicted | (13) |
| *Bacteroides caecimuris* | Bacteroidetes | Predicted | (13) |
| *Bacteroides cellulosilyticus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides dorei* | Bacteroidetes | Predicted | (13) |
| *Bacteroides faecichinchillae* | Bacteroidetes | Predicted | (13) |
| *Bacteroides faecis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides finegoldii* | Bacteroidetes | Predicted | (13) |
| *Bacteroides fragilis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides nordii* | Bacteroidetes | Predicted | (13) |
| *Bacteroides oleiciplenus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides ovatus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides salyersiae* | Bacteroidetes | Predicted | (13) |
| *Bacteroides stercorirosoris* | Bacteroidetes | Predicted | (13) |
| *Bacteroides stercoris* | Bacteroidetes | Predicted | (13) |
| *Bacteroides thetaiotaomicron* | Bacteroidetes | Predicted | (13) |
| *Bacteroides uniformis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides vulgatus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides xylanisolvens* | Bacteroidetes | Predicted | (13) |
| *Barnesiella intestinihominis* | Bacteroidetes | Predicted | (13) |
| *Butyricimonas virosa* | Bacteroidetes | Predicted | (13) |
| *Coprobacter fastidiosus* | Bacteroidetes | Predicted | (13) |
| *Muribaculum intestinale* | Bacteroidetes | Predicted | (13) |
| *Odoribacter splanchnicus* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides distasonis* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides goldsteinii* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides gordonii* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides merdae* | Bacteroidetes | Predicted | (13) |
| *Paraprevotella clara* | Bacteroidetes | Predicted | (13) |
| *Blautia hydrogenotrophica DSM 10507* | Firmicutes | Predicted | (10) |
| *Streptococcus thermophilus* | Firmicutes | Experimentally proven | (6,69)⁠ |
| *Lactobacillus lactis subsp.lactis biovar diacetylactis* | Firmicutes | Experimentally proven | (68) |
| *Lactobacillus plantarum* | Firmicutes | Experimentally proven | (68) |
| *Lactobacillus helveticus* | Firmicutes | Experimentally proven | (68) |
| *Lactobacillus acidophilus* | Firmicutes | Experimentally proven | (68) |
| *Lactobacillus casei* | Firmicutes | Experimentally proven | (68) |
| *Lactobacillus casei subsp. rhamnosus* | Firmicutes | Experimentally proven | (68) |
| *Lactobacillus delbrueckii subsp. bulgaricus CRL 863* | Firmicutes | Experimentally proven | (70)⁠ |
| *Leuconostoc lactis* | Firmicutes | Experimentally proven | (68) |
| *Leuconostoc paramesenteroides* | Firmicutes | Experimentally proven | (68) |
| *Lactobacillus lactis subsp. cremoris* | Firmicutes | Experimentally proven | (68) |
| *Streptococcus sp. 2\_1\_36FAA* | Firmicutes | Predicted | (10) |
| *Blautia hansenii DSM 20583* | Firmicutes | Predicted | (10) |
| *Ruminococcus obeum A2-162* | Firmicutes | Predicted | (10) |
| *Clostridium difficile CD196* | Firmicutes | Predicted and experimentally proven | (10) |
| *Clostridium difficile NAP07* | Firmicutes | Predicted and experimentally proven | (10) |
| *Clostridium difficile NAP08* | Firmicutes | Predicted and experimentally proven | (10) |
| *Ruminococcus sp. SR1/5* | Firmicutes | Predicted | (10) |
| *Clostridium sp. 7\_2\_43FAA* | Firmicutes | Predicted | (10) |
| *Clostridium bartlettii DSM 16795* | Firmicutes | Predicted | (10) |
| *Listeria grayi DSM 20601* | Firmicutes | Predicted | (10) |
| *Anaerostipes caccae DSM 14662* | Firmicutes | Predicted | (10) |
| *Anaerostipes sp. 3\_2\_56FAA* | Firmicutes | Predicted | (10) |
| *Coprococcus eutactus ATCC 27759* | Firmicutes | Predicted | (10) |
| *Lachnospiraceae bacterium 5\_1\_63FAA* | Firmicutes | Predicted | (10) |
| *Listeria monocytogenes str. 1/2a F6854* | Firmicutes | Predicted and experimentally proven | (10) |
| *Streptococcus infantarius subsp. infantarius ATCC BAA-102* | Firmicutes | Predicted | (10) |
| *Bacillus subtilis subsp. subtilis str. 168* | Firmicutes | Predicted | (10) |
| *Coprococcus catus* | Firmicutes | Predicted | (13) |
| *Eisenbergiella tayi* | Firmicutes | Predicted | (13) |
| *Neglecta timonensis* | Firmicutes | Predicted | (13) |
| *Romboutsia timonensis* | Firmicutes | Predicted | (13) |
| *Turicibacter sanguinis* | Firmicutes | Predicted | (13) |
| *Blautia schinkii* | Firmicutes | Predicted | (13) |
| *Caecibacter massiliensis* | Firmicutes | Predicted | (13) |
| *Emergencia timonensis* | Firmicutes | Predicted | (13) |
| *Peptoniphilus grossensis* | Firmicutes | Predicted | (13) |
| *[Clostridium] glycyrrhizinilyticum* | Firmicutes | Predicted | (13) |
| *[Clostridium] leptum* | Firmicutes | Predicted | (13) |
| *Bariatricus massiliensis* | Firmicutes | Predicted | (13) |
| *Eubacterium coprostanoligenes* | Firmicutes | Predicted | (13) |
| *Ruminococcus champanellensis* | Firmicutes | Predicted | (13) |
| *[Clostridium] scindens* | Firmicutes | Predicted | (13) |
| *Blautia glucerasea* | Firmicutes | Predicted | (13) |
| *Ruminococcus faecis* | Firmicutes | Predicted | (13) |
| *Faecalicatena contorta* | Firmicutes | Predicted | (13) |
| *Blautia luti* | Firmicutes | Predicted | (13) |
| *Clostridium perfringens* | Firmicutes | Predicted | (13) |
| *Coprococcus comes* | Firmicutes | Predicted | (13) |
| *Dorea longicatena* | Firmicutes | Predicted | (13) |
| *Eubacterium callanderi* | Firmicutes | Predicted | (13) |
| *Eubacterium limosum* | Firmicutes | Predicted | (13) |
| *Ruminococcus gauvreauii* | Firmicutes | Predicted | (13) |
| *Eubacterium ventriosum* | Firmicutes | Predicted | (13) |
| *Clostridium saudiense* | Firmicutes | Predicted | (13) |
| *Sporobacter termitidis* | Firmicutes | Predicted | (13) |
| *[Eubacterium] hallii* | Firmicutes | Predicted | (13) |
| *Anaerostipes hadrus* | Firmicutes | Predicted | (13) |
| *Coprococcus eutactus* | Firmicutes | Predicted | (13) |
| *Eubacterium ramulus* | Firmicutes | Predicted | (13) |
| *Peptococcus niger* | Firmicutes | Predicted | (13) |
| *Blautia obeum* | Firmicutes | Predicted | (13) |
| *Blautia wexlerae* | Firmicutes | Predicted | (13) |
| *[Ruminococcus] torques* | Firmicutes | Predicted | (13) |
| *[Clostridium] viride* | Firmicutes | Predicted | (13) |
| *Robinsoniella peoriensis* | Firmicutes | Predicted | (13) |
| *Anaerobium acetethylicum* | Firmicutes | Predicted | (13) |
| *Fusobacterium gonidiaformans ATCC 25563* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 3\_1\_5R* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 1\_1\_41FAA* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 2\_1\_31* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 3\_1\_27* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 3\_1\_33* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 3\_1\_36A2* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 4\_1\_13* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 7\_1* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. D11* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. D12* | Fusobacteria | Predicted | (10) |
| *Victivallis vadensis* | Lentisphaerae | Predicted | (13) |
| *Campylobacter coli JV20* | Proteobacteria | Predicted | (10) |
| *Helicobacter bilis ATCC 43879* | Proteobacteria | Predicted | (10) |
| *Helicobacter cinaedi CCUG 18818* | Proteobacteria | Predicted | (10) |
| *Helicobacter pylori 26695* | Proteobacteria | Predicted and experimentally proven | (10) |
| *Oxalobacter formigenes HOxBLS* | Proteobacteria | Predicted | (10) |
| *Oxalobacter formigenes OXCC13* | Proteobacteria | Predicted | (10) |
| *Edwardsiella tarda ATCC 23685* | Proteobacteria | Predicted | (10) |
| *Proteus penneri ATCC 35198* | Proteobacteria | Predicted | (10) |
| *Acinetobacter junii SH205* | Proteobacteria | Predicted | (10) |
| *Citrobacter sp. 30\_2* | Proteobacteria | Predicted | (10) |
| *Citrobacter youngae ATCC 29220* | Proteobacteria | Predicted | (10) |
| *Enterobacter cancerogenus ATCC 35316* | Proteobacteria | Predicted | (10) |
| *Enterobacteriaceae bacterium 9\_2\_54FAA* | Proteobacteria | Predicted | (10) |
| *Escherichia coli O157:H7 str. Sakai* | Proteobacteria | Predicted | (10) |
| *Escherichia coli SE11* | Proteobacteria | Predicted | (10) |
| *Escherichia coli str. K-12 substr. MG1655* | Proteobacteria | Predicted and experimentally proven | (10) |
| *Escherichia coli UTI89* | Proteobacteria | Predicted | (10) |
| *Escherichia sp. 3\_2\_53FAA* | Proteobacteria | Predicted | (10) |
| *Escherichia sp. 4\_1\_40B* | Proteobacteria | Predicted | (10) |
| *Klebsiella pneumoniae 1162281* | Proteobacteria | Predicted and experimentally proven | (10) |
| *Klebsiella sp. 1\_1\_55* | Proteobacteria | Predicted | (10) |
| *Providencia alcalifaciens DSM 30120* | Proteobacteria | Predicted | (10) |
| *Providencia rettgeri DSM 1131* | Proteobacteria | Predicted | (10) |
| *Providencia rustigianii DSM 4541* | Proteobacteria | Predicted | (10) |
| *Providencia stuartii ATCC 25827* | Proteobacteria | Predicted | (10) |
| *Ralstonia sp. 5\_7\_47FAA* | Proteobacteria | Predicted | (10) |
| *Salmonella enterica subsp. enterica serovar Typhimurium str.* | Proteobacteria | Predicted and experimentally proven | (10) |
| *Parasutterella excrementihominis* | Proteobacteria | Predicted | (13) |
| *Turicimonas muris* | Proteobacteria | Predicted | (13) |
| *Rhodospirillum rubrum* | Proteobacteria | Predicted | (13) |
| *Pararhodospirillum photometricum* | Proteobacteria | Predicted | (13) |
| *Desulfovibrio piger* | Proteobacteria | Predicted | (13) |
| *Escherichia coli Nissle 1917* | Proteobacteria | Experimentally proven | (71)⁠ |
| *Escherichia fergusonii* | Proteobacteria | Predicted | (13) |
| *Akkermansia muciniphila* | Verrucomicrobiota | Predicted | (13) |
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| **Cobalamin (B12)** | *Bifidobacterium infantis* | Actinobacteria | Experimentally proven | (62) |
| *Collinsella aerofaciens ATCC 25986* | Actinobacteria | Predicted | (10) |
| *Bifidobacterium animalis* | Actinobacteria | Predicted | (6) |
| *Bifidobacterium longum* | Actinobacteria | Predicted | (6) |
| *Gordonibacter pamelaeae 7-10-1-b* | Actinobacteria | Predicted | (10) |
| *Propionibacterium freudenreichii* | Actinomycetota | Experimentally proven | (6,72,73)⁠ |
| *Bacteroides thetaiotaomicron VPI-5482* | Bacteroidetes | Predicted and experimentally proven | (10) |
| *Bacteroides cellulosilyticus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides cellulosilyticus DSM 14838* | Bacteroidetes | Predicted | (10) |
| *Bacteroides dorei DSM 17855* | Bacteroidetes | Predicted | (10) |
| *Bacteroides fragilis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides fragilis 3\_1\_12* | Bacteroidetes | Predicted | (10) |
| *Bacteroides fragilis YCH46* | Bacteroidetes | Predicted | (10) |
| *Bacteroides intestinalis DSM 17393* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_1\_16* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_1\_33B* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 2\_1\_7* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_1\_19* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_1\_33FAA* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_1\_40A* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 3\_2\_5* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 4\_1\_36* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 4\_3\_47FAA* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. 9\_1\_42FAA* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. D2* | Bacteroidetes | Predicted | (10) |
| *Bacteroides sp. D20* | Bacteroidetes | Predicted | (10) |
| *Bacteroides stercoris ATCC 43183* | Bacteroidetes | Predicted | (10) |
| *Bacteroides uniformis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides uniformis ATCC 8492* | Bacteroidetes | Predicted | (10) |
| *Bacteroides vulgatus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides vulgatus PC510* | Bacteroidetes | Predicted | (10) |
| *Parabacteroides goldsteinii* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides distasonis* | Bacteroidetes | Predicted | (10,13) |
| *Parabacteroides johnsonii DSM 18315* | Bacteroidetes | Predicted | (10) |
| *Parabacteroides merdae* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides merdae ATCC 43184* | Bacteroidetes | Predicted | (10) |
| *Parabacteroides sp. D13* | Bacteroidetes | Predicted | (10) |
| *Bacteroides cellulosilyticus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides dorei* | Bacteroidetes | Predicted | (13) |
| *Bacteroides fragilis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides oleiciplenus* | Bacteroidetes | Predicted | (13) |
| *Bacteroides stercoris* | Bacteroidetes | Predicted | (13) |
| *Bacteroides uniformis* | Bacteroidetes | Predicted | (13) |
| *Bacteroides vulgatus* | Bacteroidetes | Predicted | (13) |
| *Butyricimonas virosa* | Bacteroidetes | Predicted | (13) |
| *Odoribacter splanchnicus* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides distasonis* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides goldsteinii* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides gordonii* | Bacteroidetes | Predicted | (13) |
| *Parabacteroides merdae* | Bacteroidetes | Predicted | (13) |
| *Anaerostipes caccae DSM 14662* | Firmicutes | Predicted | (10) |
| *Anaerostipes sp. 3\_2\_56FAA* | Firmicutes | Predicted | (10) |
| *Anaerotruncus colihominis DSM 17241* | Firmicutes | Predicted | (10) |
| *Bacteroides capillosus ATCC 29799* | Firmicutes | Predicted | (10) |
| *Bacteroides pectinophilus ATCC 43243* | Firmicutes | Predicted | (10) |
| *Blautia hansenii DSM 20583* | Firmicutes | Predicted | (10) |
| *Blautia hydrogenotrophica DSM 10507* | Firmicutes | Predicted | (10) |
| *Bryantella formatexigens DSM 14469* | Firmicutes | Predicted | (10) |
| *Butyrivibrio fibrisolvens 16/4* | Firmicutes | Predicted | (10) |
| *Clostridiales bacterium 1\_7\_47FAA* | Firmicutes | Predicted | (10) |
| *Clostridium asparagiforme DSM 15981* | Firmicutes | Predicted | (10) |
| *Clostridium bartlettii DSM 16795* | Firmicutes | Predicted | (10) |
| *Clostridium bolteae ATCC BAA-613* | Firmicutes | Predicted | (10) |
| *Clostridium clostridioforme 2\_1\_49FAA* | Firmicutes | Predicted | (10) |
| *Clostridium difficile CD196* | Firmicutes | Predicted and experimentally proven | (10) |
| *Clostridium difficile NAP07* | Firmicutes | Predicted and experimentally proven | (10) |
| *Clostridium difficile NAP08* | Firmicutes | Predicted and experimentally proven | (10) |
| *Clostridium hiranonis DSM 13275* | Firmicutes | Predicted | (10) |
| *Clostridium hylemonae DSM 15053* | Firmicutes | Predicted | (10) |
| *Clostridium scindens ATCC 35704* | Firmicutes | Predicted | (10) |
| *Clostridium sp. M62/1* | Firmicutes | Predicted | (10) |
| *Clostridium sporogenes ATCC 15579* | Firmicutes | Predicted | (10) |
| *Clostridium symbiosum WAL-14163* | Firmicutes | Predicted | (10) |
| *Clostridium symbiosum WAL-14673* | Firmicutes | Predicted | (10) |
| *Coprococcus comes ATCC 27758* | Firmicutes | Predicted | (10) |
| *Dorea longicatena DSM 13814* | Firmicutes | Predicted | (10) |
| *Eubacterium hallii DSM 3353* | Firmicutes | Predicted | (10) |
| *Eubacterium rectale DSM 17629* | Firmicutes | Predicted | (10) |
| *Eubacterium rectale M104/1* | Firmicutes | Predicted | (10) |
| *Lachnospiraceae bacterium 8\_1\_57FAA* | Firmicutes | Predicted | (10) |
| *Lactobacillus plantarum* | Firmicutes | Experimentally proven | (6,63)⁠ |
| *Lactobacillus coryniformis* | Firmicutes | Experimentally proven | (6,63) |
| *Lactobacillus reuteri* | Firmicutes | Experimentally proven | (74,75)⁠ |
| *Lactobacillus reuteri CRL1098* | Firmicutes | Experimentally proven | (5,76)⁠ |
| *Lactobacillus reuteri CF48-3A* | Firmicutes | Predicted | (10) |
| *Lactobacillus reuteri DSM 20016* | Firmicutes | Predicted | (10) |
| *Lactobacillus reuteri JCM 1112* | Firmicutes | Predicted | (10) |
| *Lactobacillus reuteri MM2-3* | Firmicutes | Predicted | (10) |
| *Lactobacillus reuteri MM4-1A* | Firmicutes | Predicted | (10) |
| *Lactobacillus reuteri SD2112* | Firmicutes | Predicted | (10) |
| *Listeria monocytogenes str. 1/2a F6854* | Firmicutes | Predicted and experimentally proven | (10) |
| *Megamonas hypermegale ART12/1* | Firmicutes | Predicted | (10) |
| *Mitsuokella multacida DSM 20544* | Firmicutes | Predicted | (10) |
| *Phascolarctobacterium sp. YIT 12067* | Firmicutes | Predicted | (10) |
| *Roseburia inulinivorans DSM 16841* | Firmicutes | Predicted | (10) |
| *Ruminococcaceae bacterium D16* | Firmicutes | Predicted | (10) |
| *Ruminococcus gnavus ATCC 29149* | Firmicutes | Predicted | (10) |
| *Ruminococcus lactaris ATCC 29176* | Firmicutes | Predicted | (10) |
| *Ruminococcus obeum A2-162* | Firmicutes | Predicted | (10) |
| *Ruminococcus sp. 5\_1\_39BFAA* | Firmicutes | Predicted | (10) |
| *Ruminococcus sp. SR1/5* | Firmicutes | Predicted | (10) |
| *Ruminococcus torques ATCC 27756* | Firmicutes | Predicted | (10) |
| *Ruminococcus torques L2-14* | Firmicutes | Predicted | (10) |
| *Subdoligranulum variabile DSM 15176* | Firmicutes | Predicted | (10) |
| *Veillonella sp. 3\_1\_44* | Firmicutes | Predicted | (10) |
| *Veillonella sp. 6\_1\_27* | Firmicutes | Predicted | (10) |
| *Pseudoflavonifractor capillosus* | Firmicutes | Predicted | (13) |
| *[Clostridium] citroniae* | Firmicutes | Predicted | (13) |
| *[Clostridium] asparagiforme* | Firmicutes | Predicted | (13) |
| *[Clostridium] lavalense* | Firmicutes | Predicted | (13) |
| *Agathobaculum desmolans* | Firmicutes | Predicted | (13) |
| *Anaerofilum pentosovorans* | Firmicutes | Predicted | (13) |
| *Anaerotruncus colihominis* | Firmicutes | Predicted | (13) |
| *Anaerotruncus rubiinfantis* | Firmicutes | Predicted | (13) |
| *Flavonifractor plautii* | Firmicutes | Predicted | (13) |
| *Flintibacter butyricus* | Firmicutes | Predicted | (13) |
| *Intestinimonas butyriciproducens* | Firmicutes | Predicted | (13) |
| *Phocea massiliensis* | Firmicutes | Predicted | (13) |
| *Faecalibacterium prausnitzii* | Firmicutes | Predicted | (13) |
| *[Clostridium] celerecrescens* | Firmicutes | Predicted | (13) |
| *Intestinibacillus massiliensis* | Firmicutes | Predicted | (13) |
| *[Clostridium] amygdalinum* | Firmicutes | Predicted | (13) |
| *[Clostridium] hylemonae* | Firmicutes | Predicted | (13) |
| *Fusicatenibacter saccharivorans* | Firmicutes | Predicted | (13) |
| *Sellimonas intestinalis* | Firmicutes | Predicted | (13) |
| *Pseudobutyrivibrio ruminis* | Firmicutes | Predicted | (13) |
| *[Eubacterium] eligens* | Firmicutes | Predicted | (13) |
| *[Eubacterium] rectale* | Firmicutes | Predicted | (13) |
| *Roseburia faecis* | Firmicutes | Predicted | (13) |
| *Hungatella hathewayi* | Firmicutes | Predicted | (13) |
| *Butyricicoccus pullicaecorum* | Firmicutes | Predicted | (13) |
| *[Clostridium] saccharolyticum* | Firmicutes | Predicted | (13) |
| *[Clostridium] symbiosum* | Firmicutes | Predicted | (13) |
| *[Clostridium] clostridioforme* | Firmicutes | Predicted | (13) |
| *Coprococcus catus* | Firmicutes | Predicted | (13) |
| *Eisenbergiella tayi* | Firmicutes | Predicted | (13) |
| *Blautia schinkii* | Firmicutes | Predicted | (13) |
| *Caecibacter massiliensis* | Firmicutes | Predicted | (13) |
| *[Clostridium] glycyrrhizinilyticum* | Firmicutes | Predicted | (13) |
| *Bariatricus massiliensis* | Firmicutes | Predicted | (13) |
| *[Clostridium] scindens* | Firmicutes | Predicted | (13) |
| *Blautia glucerasea* | Firmicutes | Predicted | (13) |
| *Ruminococcus faecis* | Firmicutes | Predicted | (13) |
| *Faecalicatena contorta* | Firmicutes | Predicted | (13) |
| *Blautia luti* | Firmicutes | Predicted | (13) |
| *Clostridium perfringens* | Firmicutes | Predicted | (13) |
| *Coprococcus comes* | Firmicutes | Predicted | (13) |
| *Dorea longicatena* | Firmicutes | Predicted | (13) |
| *Eubacterium callanderi* | Firmicutes | Predicted | (13) |
| *Eubacterium limosum* | Firmicutes | Predicted | (13) |
| *Ruminococcus gauvreauii* | Firmicutes | Predicted | (13) |
| *Sporobacter termitidis* | Firmicutes | Predicted | (13) |
| *[Eubacterium] hallii* | Firmicutes | Predicted | (13) |
| *Eubacterium ramulus* | Firmicutes | Predicted | (13) |
| *Blautia obeum* | Firmicutes | Predicted | (13) |
| *Blautia wexlerae* | Firmicutes | Predicted | (13) |
| *[Ruminococcus] torques* | Firmicutes | Predicted | (13) |
| *Fusobacterium varium* | Fusobacteria | Predicted | (6)⁠ |
| *Fusobacterium gonidiaformans ATCC 25563* | Fusobacteria | Predicted | (10) |
| *Fusobacterium mortiferum ATCC 9817* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 1\_1\_41FAA* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 2\_1\_31* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 3\_1\_27* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 3\_1\_33* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 3\_1\_36A2* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 3\_1\_5R* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 4\_1\_13* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. 7\_1* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. D11* | Fusobacteria | Predicted | (10) |
| *Fusobacterium sp. D12* | Fusobacteria | Predicted | (10) |
| *Fusobacterium ulcerans ATCC 49185* | Fusobacteria | Predicted | (10) |
| *Fusobacterium varium ATCC 27725* | Fusobacteria | Predicted | (10) |
| *Bilophila wadsworthia 3\_1\_6* | Proteobacteria | Predicted | (10) |
| *Citrobacter sp. 30\_2* | Proteobacteria | Predicted | (10) |
| *Citrobacter youngae ATCC 29220* | Proteobacteria | Predicted | (10) |
| *Desulfovibrio piger ATCC 29098* | Proteobacteria | Predicted | (10) |
| *Desulfovibrio sp. 3\_1\_syn3* | Proteobacteria | Predicted | (10) |
| *Edwardsiella tarda ATCC 23685* | Proteobacteria | Predicted | (10) |
| *Enterobacteriaceae bacterium 9\_2\_54FAA* | Proteobacteria | Predicted | (10) |
| *Klebsiella pneumoniae 1162281* | Proteobacteria | Predicted and experimentally proven | (10) |
| *Klebsiella sp. 1\_1\_55* | Proteobacteria | Predicted | (10) |
| *Salmonella enterica subsp. enterica serovar Typhimurium str.* | Proteobacteria | Predicted and experimentally proven | (10) |
| *Rhodospirillum rubrum* | Proteobacteria | Predicted | (13) |
| *Pararhodospirillum photometricum* | Proteobacteria | Predicted | (13) |
| *Desulfovibrio piger* | Proteobacteria | Predicted | (13) |

## Table S4. Metadata of samples from Indian and Chinese cohorts used in this study

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sample** | **Age** | **Age-group** | **Gender** | **Nationality** | **Location** | **Diet** |
| SRR5898908 | 22 | Young\_adult | Female | Indian | Bhopal | Veg |
| SRR5898909 | 24 | Young\_adult | Male | Indian | Bhopal | Veg |
| SRR5898910 | 25 | Young\_adult | Female | Indian | Bhopal | Veg |
| SRR5898911 | 23 | Young\_adult | Female | Indian | Bhopal | Veg |
| SRR5898912 | 21 | Young\_adult | Female | Indian | Bhopal | Veg |
| SRR5898913 | 21 | Young\_adult | Female | Indian | Bhopal | Veg |
| SRR5898914 | 50 | Middle\_aged\_adult | Male | Indian | Bhopal | Veg |
| SRR5898915 | 27 | Young\_adult | Female | Indian | Bhopal | Veg |
| SRR5898916 | 21 | Young\_adult | Female | Indian | Bhopal | Veg |
| SRR5898917 | 28 | Young\_adult | Female | Indian | Bhopal | Veg |
| SRR5898918 | 30 | Young\_adult | Male | Indian | Kasaragod | Non\_veg |
| SRR5898919 | 24 | Young\_adult | Male | Indian | Kasaragod | Non\_veg |
| SRR5898920 | 29 | Young\_adult | Female | Indian | Bhopal | Veg |
| SRR5898921 | 24 | Young\_adult | Female | Indian | Bhopal | Veg |
| SRR5898922 | 23 | Young\_adult | Female | Indian | Bhopal | Veg |
| SRR5898923 | 26 | Young\_adult | Female | Indian | Bhopal | Veg |
| SRR5898924 | 26 | Young\_adult | Female | Indian | Bhopal | Veg |
| SRR5898925 | 25 | Young\_adult | Male | Indian | Bhopal | Veg |
| SRR5898926 | 28 | Young\_adult | Male | Indian | Bhopal | Veg |
| SRR5898927 | 26 | Young\_adult | Male | Indian | Kasaragod | Non\_veg |
| SRR5898928 | 4 | Child | Male | Indian | Kasaragod | Non\_veg |
| SRR5898929 | 6 | Child | Male | Indian | Kasaragod | Non\_veg |
| SRR5898930 | 9 | Child | Female | Indian | Kasaragod | Non\_veg |
| SRR5898931 | 12 | Child | Female | Indian | Kasaragod | Non\_veg |
| SRR5898932 | 16 | Child | Male | Indian | Kasaragod | Non\_veg |
| SRR5898933 | 10 | Child | Male | Indian | Kasaragod | Non\_veg |
| SRR5898934 | 12 | Child | Male | Indian | Kasaragod | Non\_veg |
| SRR5898935 | 11 | Child | Female | Indian | Kasaragod | Non\_veg |
| SRR5898936 | 7 | Child | Female | Indian | Kasaragod | Non\_veg |
| SRR5898937 | 11 | Child | Male | Indian | Kasaragod | Non\_veg |
| SRR5898938 | 5 | Child | Male | Indian | Kasaragod | Non\_veg |
| SRR5898939 | 3.5 | Child | Male | Indian | Kasaragod | Non\_veg |
| SRR5898940 | 6 | Child | Male | Indian | Kasaragod | Non\_veg |
| SRR5898941 | 9 | Child | Male | Indian | Kasaragod | Non\_veg |
| SRR5898942 | 12 | Child | Male | Indian | Kasaragod | Non\_veg |
| SRR5898943 | 10 | Child | Female | Indian | Kasaragod | Non\_veg |
| SRR5898944 | 5 | Child | Female | Indian | Kasaragod | Non\_veg |
| SRR5898945 | 7 | Child | Female | Indian | Kasaragod | Non\_veg |
| SRR5898946 | 26 | Young\_adult | Male | Indian | Bhopal | Non\_veg |
| SRR5898947 | 27 | Young\_adult | Female | Indian | Bhopal | Non\_veg |
| SRR5898948 | 58 | Middle\_aged\_adult | Female | Indian | Kasaragod | Non\_veg |
| SRR5898949 | 30 | Young\_adult | Female | Indian | Kasaragod | Non\_veg |
| SRR5898950 | 50 | Middle\_aged\_adult | Female | Indian | Kasaragod | Non\_veg |
| SRR5898951 | 29 | Young\_adult | Male | Indian | Kasaragod | Non\_veg |
| SRR5898952 | 30 | Young\_adult | Male | Indian | Kasaragod | Non\_veg |
| SRR5898953 | 27 | Young\_adult | Female | Indian | Kasaragod | Non\_veg |
| SRR5898954 | 21 | Young\_adult | Male | Indian | Kasaragod | Non\_veg |
| SRR5898955 | 58 | Middle\_aged\_adult | Female | Indian | Kasaragod | Non\_veg |
| SRR5898956 | 25 | Young\_adult | Male | Indian | Bhopal | Veg |
| SRR5898957 | 53 | Middle\_aged\_adult | Female | Indian | Kasaragod | Non\_veg |
| SRR5898958 | 50 | Middle\_aged\_adult | Female | Indian | Kasaragod | Non\_veg |
| SRR5898959 | 50 | Middle\_aged\_adult | Female | Indian | Kasaragod | Non\_veg |
| SRR5898960 | 23 | Young\_adult | Male | Indian | Kasaragod | Non\_veg |
| SRR5898961 | 50 | Middle\_aged\_adult | Female | Indian | Bhopal | Veg |
| SRR5898962 | 53 | Middle\_aged\_adult | Male | Indian | Kasaragod | Non\_veg |
| SRR5898963 | 53 | Middle\_aged\_adult | Male | Indian | Kasaragod | Non\_veg |
| SRR5898964 | 58 | Middle\_aged\_adult | Male | Indian | Kasaragod | Non\_veg |
| SRR5898965 | 56 | Middle\_aged\_adult | Male | Indian | Kasaragod | Non\_veg |
| SRR5898966 | 53 | Middle\_aged\_adult | Male | Indian | Bhopal | Non\_veg |
| SRR5898967 | 60 | Old | Male | Indian | Kasaragod | Non\_veg |
| SRR5898968 | 28 | Young\_adult | Male | Indian | Bhopal | Non\_veg |
| SRR5898969 | 26 | Young\_adult | Male | Indian | Bhopal | Veg |
| SRR5898970 | 29 | Young\_adult | Male | Indian | Bhopal | Veg |
| SRR5898971 | 30 | Young\_adult | Male | Indian | Bhopal | Non\_veg |
| SRR5898972 | 23 | Young\_adult | Male | Indian | Bhopal | Veg |
| SRR5898973 | 26 | Young\_adult | Female | Indian | Bhopal | Veg |
| SRR5898974 | 30 | Young\_adult | Male | Indian | Bhopal | Non\_veg |
| SRR5898975 | 2.4 | Child | Female | Indian | Bhopal | Veg |
| SRR5898976 | 22 | Young\_adult | Male | Indian | Bhopal | Veg |
| SRR5898977 | 30 | Young\_adult | Male | Indian | Bhopal | Veg |
| SRR5898978 | 58 | Middle\_aged\_adult | Male | Indian | Bhopal | Non\_veg |
| SRR5898979 | 61 | Old | Male | Indian | Bhopal | Non\_veg |
| SRR5898980 | 71 | Old | Male | Indian | Bhopal | Non\_veg |
| SRR5898981 | 52 | Middle\_aged\_adult | Female | Indian | Bhopal | Non\_veg |
| SRR5898982 | 62 | Old | Male | Indian | Bhopal | Non\_veg |
| SRR5898983 | 52 | Middle\_aged\_adult | Female | Indian | Bhopal | Non\_veg |
| SRR5898984 | 64 | Old | Female | Indian | Bhopal | Non\_veg |
| SRR5898985 | 62 | Old | Female | Indian | Bhopal | Non\_veg |
| SRR5898986 | 57 | Middle\_aged\_adult | Male | Indian | Bhopal | Non\_veg |
| SRR5898987 | 57 | Middle\_aged\_adult | Female | Indian | Bhopal | Non\_veg |
| SRR5898988 | 29 | Young\_adult | Female | Indian | Kasaragod | Non\_veg |
| SRR5898989 | 30 | Young\_adult | Female | Indian | Kasaragod | Non\_veg |
| SRR5898990 | 23 | Young\_adult | Male | Indian | Bhopal | Non\_veg |
| SRR5898991 | 25 | Young\_adult | Male | Indian | Kasaragod | Non\_veg |
| SRR5898992 | 23 | Young\_adult | Male | Indian | Kasaragod | Non\_veg |
| SRR5898993 | 23 | Young\_adult | Male | Indian | Kasaragod | Non\_veg |
| SRR5898994 | 19 | Young\_adult | Male | Indian | Kasaragod | Non\_veg |
| SRR5898995 | 23 | Young\_adult | Male | Indian | Kasaragod | Non\_veg |
| SRR5898996 | 30 | Young\_adult | Female | Indian | Kasaragod | Non\_veg |
| SRR5898997 | 20 | Young\_adult | Male | Indian | Kasaragod | Non\_veg |
| SRR5898998 | 29 | Young\_adult | Female | Indian | Bhopal | Veg |
| SRR5898999 | 0.6 | Child | Female | Indian | Bhopal | Veg |
| SRR5899000 | 28 | Young\_adult | Female | Indian | Bhopal | Veg |
| SRR5899001 | 25 | Young\_adult | Female | Indian | Bhopal | Veg |
| SRR5899002 | 0.5 | Child | Female | Indian | Bhopal | Veg |
| SRR5899003 | 0.5 | Child | Female | Indian | Bhopal | Veg |
| SRR5899004 | 24 | Young\_adult | Female | Indian | Bhopal | Non\_veg |
| SRR5899005 | 30 | Young\_adult | Male | Indian | Bhopal | Veg |
| SRR5899006 | 25 | Young\_adult | Male | Indian | Bhopal | Veg |
| SRR5899007 | 26 | Young\_adult | Male | Indian | Bhopal | Veg |
| SRR5899008 | 55 | Middle\_aged\_adult | Female | Indian | Kasaragod | Non\_veg |
| SRR5899009 | 60 | Old | Female | Indian | Kasaragod | Non\_veg |
| SRR5899010 | 27 | Young\_adult | Female | Indian | Kasaragod | Non\_veg |
| SRR5899011 | 21 | Young\_adult | Female | Indian | Kasaragod | Non\_veg |
| SRR5899012 | 26 | Young\_adult | Female | Indian | Kasaragod | Non\_veg |
| SRR5899013 | 28 | Young\_adult | Female | Indian | Kasaragod | Non\_veg |
| SRR5899014 | 50 | Middle\_aged\_adult | Female | Indian | Kasaragod | Non\_veg |
| SRR5899015 | 55 | Middle\_aged\_adult | Female | Indian | Kasaragod | Non\_veg |
| SRR5899016 | 30 | Young\_adult | Female | Indian | Kasaragod | Non\_veg |
| SRR5899017 | 23 | Young\_adult | Female | Indian | Kasaragod | Non\_veg |
| SRR9108942 | 40 | Middle\_aged\_adult | Male | Indian | Tribal | Non\_veg |
| SRR9108943 | 18 | Young\_adult | Male | Indian | Tribal | Non\_veg |
| SRR9108944 | 32 | Young\_adult | Male | Indian | Tribal | Non\_veg |
| SRR9108945 | 55 | Middle\_aged\_adult | Female | Indian | Tribal | Non\_veg |
| SRR9108946 | 58 | Middle\_aged\_adult | Male | Indian | Tribal | Non\_veg |
| SRR9108947 | 35 | Young\_adult | Male | Indian | Tribal | Non\_veg |
| SRR9108948 | 32 | Young\_adult | Male | Indian | Tribal | Non\_veg |
| SRR9108949 | 24 | Young\_adult | Male | Indian | Tribal | Non\_veg |
| SRR9108950 | 35 | Young\_adult | Male | Indian | Tribal | Veg |
| SRR9108951 | 37 | Middle\_aged\_adult | Female | Indian | Tribal | Veg |
| SRR9108952 | 22 | Young\_adult | Male | Indian | Tribal | Non\_veg |
| SRR9108953 | 19 | Young\_adult | Male | Indian | Tribal | Non\_veg |
| SRR9108954 | 28 | Young\_adult | Male | Indian | Tribal | Non\_veg |
| SRR9108955 | 27 | Young\_adult | Male | Indian | Tribal | Non\_veg |
| SRR9108956 | 35 | Young\_adult | Male | Indian | Tribal | Veg |
| SRR9108957 | 33 | Young\_adult | Male | Indian | Tribal | Non\_veg |
| SRR9108958 | 31 | Young\_adult | Male | Indian | Tribal | Non\_veg |
| SRR9108959 | 22 | Young\_adult | Male | Indian | Tribal | Non\_veg |
| SRR9108960 | 45 | Middle\_aged\_adult | Male | Indian | Tribal | Non\_veg |
| SRR9108961 | 33 | Young\_adult | Male | Indian | Tribal | Non\_veg |
| SRR9108962 | 29 | Young\_adult | Male | Indian | Tribal | Veg |
| SRR9108963 | 44 | Middle\_aged\_adult | Male | Indian | Tribal | Non\_veg |
| SRR9108964 | 29 | Young\_adult | Male | Indian | Tribal | Non\_veg |
| SRR9108965 | 31 | Young\_adult | Male | Indian | Tribal | Non\_veg |
| SRR9108966 | 46 | Middle\_aged\_adult | Male | Indian | Tribal | Non\_veg |
| SRR9108967 | 50 | Middle\_aged\_adult | Male | Indian | Tribal | Non\_veg |
| SRR9108968 | 36 | Middle\_aged\_adult | Male | Indian | Tribal | Non\_veg |
| SRR9108969 | 56 | Middle\_aged\_adult | Female | Indian | Tribal | Non\_veg |
| SRR9108970 | 23 | Young\_adult | Female | Indian | Tribal | Non\_veg |
| SRR9108971 | 20 | Young\_adult | Male | Indian | Tribal | Veg |
| SRR9108972 | 20 | Young\_adult | Male | Indian | Tribal | Veg |
| SRR341630 | 23 | Young\_adult | Male | Chinese | NA | NA |
| SRR341631 | 23 | Young\_adult | Male | Chinese | NA | NA |
| SRR341632 | 23 | Young\_adult | Male | Chinese | NA | NA |
| SRR341633 | 38 | Middle\_aged\_adult | Male | Chinese | NA | NA |
| SRR341634 | 19 | Young\_adult | Male | Chinese | NA | NA |
| SRR341635 | 45 | Middle\_aged\_adult | Female | Chinese | NA | NA |
| SRR341636 | 51 | Middle\_aged\_adult | Female | Chinese | NA | NA |
| SRR341637 | 33 | Young\_adult | Female | Chinese | NA | NA |
| SRR341638 | 35 | Young\_adult | Female | Chinese | NA | NA |
| SRR341639 | 32 | Young\_adult | Female | Chinese | NA | NA |
| SRR341640 | 26 | Young\_adult | Female | Chinese | NA | NA |
| SRR341641 | 30 | Young\_adult | Female | Chinese | NA | NA |
| SRR341642 | 41 | Middle\_aged\_adult | Female | Chinese | NA | NA |
| SRR341643 | 42 | Middle\_aged\_adult | Female | Chinese | NA | NA |
| SRR341644 | 32 | Young\_adult | Male | Chinese | NA | NA |
| SRR341645 | 72 | Old | Male | Chinese | NA | NA |
| SRR341646 | 54 | Middle\_aged\_adult | Male | Chinese | NA | NA |
| SRR341647 | 32 | Young\_adult | Male | Chinese | NA | NA |
| SRR341648 | 42 | Middle\_aged\_adult | Male | Chinese | NA | NA |
| SRR341649 | 43 | Middle\_aged\_adult | Male | Chinese | NA | NA |
| SRR341650 | 23 | Young\_adult | Male | Chinese | NA | NA |
| SRR341651 | 46 | Middle\_aged\_adult | Male | Chinese | NA | NA |
| SRR341652 | 52 | Middle\_aged\_adult | Male | Chinese | NA | NA |
| SRR341699 | 25 | Young\_adult | Male | Chinese | NA | NA |
| SRR341700 | 29 | Young\_adult | Male | Chinese | NA | NA |
| SRR341701 | 23 | Young\_adult | Male | Chinese | NA | NA |
| SRR341702 | 24 | Young\_adult | Male | Chinese | NA | NA |
| SRR341703 | 22 | Young\_adult | Male | Chinese | NA | NA |
| SRR341704 | 21 | Young\_adult | Male | Chinese | NA | NA |
| SRR341705 | 25 | Young\_adult | Male | Chinese | NA | NA |
| SRR341706 | 33 | Young\_adult | Male | Chinese | NA | NA |
| SRR341707 | 39 | Middle\_aged\_adult | Male | Chinese | NA | NA |
| SRR341708 | 32 | Young\_adult | Female | Chinese | NA | NA |
| SRR341709 | 30 | Young\_adult | Female | Chinese | NA | NA |
| SRR341710 | 40 | Middle\_aged\_adult | Female | Chinese | NA | NA |
| SRR341711 | 38 | Middle\_aged\_adult | Female | Chinese | NA | NA |
| SRR341712 | 48 | Middle\_aged\_adult | Male | Chinese | NA | NA |
| SRR341713 | 68 | Old | Male | Chinese | NA | NA |
| SRR341714 | 46 | Middle\_aged\_adult | Male | Chinese | NA | NA |
| SRR341715 | 33 | Young\_adult | Male | Chinese | NA | NA |
| SRR341716 | 30 | Young\_adult | Male | Chinese | NA | NA |
| SRR341717 | 41 | Middle\_aged\_adult | Male | Chinese | NA | NA |
| SRR341718 | 32 | Young\_adult | Male | Chinese | NA | NA |
| SRR341719 | 37 | Middle\_aged\_adult | Male | Chinese | NA | NA |
| SRR341720 | 39 | Middle\_aged\_adult | Male | Chinese | NA | NA |
| SRR341721 | 26 | Young\_adult | Male | Chinese | NA | NA |
| SRR341722 | 24 | Young\_adult | Male | Chinese | NA | NA |
| SRR341723 | 28 | Young\_adult | Male | Chinese | NA | NA |
| SRR341724 | 38 | Middle\_aged\_adult | Male | Chinese | NA | NA |
| SRR341725 | 47 | Middle\_aged\_adult | Male | Chinese | NA | NA |

## Table S5. B-vitamin producers identified in Indian cohorts

|  |  |  |
| --- | --- | --- |
| **S.No.** | **Species** | **Phylum** |
| 1 | *Adlercreutzia equolifaciens* | Actinomycetota |
| 2 | *Akkermansia muciniphila* | Verrucomicrobiota |
| 3 | *Alistipes finegoldii* | Bacteroidetes |
| 4 | *Alistipes ihumii* | Bacteroidetes |
| 5 | *Alistipes indistinctus* | Bacteroidetes |
| 6 | *Alistipes onderdonkii* | Bacteroidetes |
| 7 | *Alistipes putredinis* | Bacteroidetes |
| 8 | *Alistipes shahii* | Bacteroidetes |
| 9 | *Alistipes timonensis* | Bacteroidetes |
| 10 | *Anaerofustis stercorihominis* | Firmicutes |
| 11 | *Anaerostipes caccae* | Firmicutes |
| 12 | *Anaerostipes hadrus* | Firmicutes |
| 13 | *Anaerotignum lactatifermentans* | Firmicutes |
| 14 | *Anaerotruncus colihominis* | Firmicutes |
| 15 | *Anaerotruncus rubiinfantis* | Firmicutes |
| 16 | *Bacteroides caccae* | Bacteroidetes |
| 17 | *Bacteroides cellulosilyticus* | Bacteroidetes |
| 18 | *Bacteroides eggerthii* | Bacteroidetes |
| 19 | *Bacteroides faecis* | Bacteroidetes |
| 20 | *Bacteroides finegoldii* | Bacteroidetes |
| 21 | *Bacteroides fragilis* | Bacteroidetes |
| 22 | *Bacteroides intestinalis* | Bacteroidetes |
| 23 | *Bacteroides nordii* | Bacteroidetes |
| 24 | *Bacteroides oleiciplenus* | Bacteroidetes |
| 25 | *Bacteroides ovatus* | Bacteroidetes |
| 26 | *Bacteroides pectinophilus* | Firmicutes |
| 27 | *Bacteroides salyersiae* | Bacteroidetes |
| 28 | *Bacteroides stercorirosoris* | Bacteroidetes |
| 29 | *Bacteroides stercoris* | Bacteroidetes |
| 30 | *Bacteroides thetaiotaomicron* | Bacteroidetes |
| 31 | *Bacteroides uniformis* | Bacteroidetes |
| 32 | *Bacteroides xylanisolvens* | Bacteroidetes |
| 33 | *Barnesiella intestinihominis* | Bacteroidetes |
| 34 | *Bifidobacterium adolescentis* | Actinobacteria |
| 35 | *Bifidobacterium angulatum* | Actinobacteria |
| 36 | *Bifidobacterium animalis* | Actinobacteria |
| 37 | *Bifidobacterium bifidum* | Actinobacteria |
| 38 | *Bifidobacterium breve* | Actinobacteria |
| 39 | *Bifidobacterium catenulatum* | Actinobacteria |
| 40 | *Bifidobacterium dentium* | Actinobacteria |
| 41 | *Bifidobacterium longum* | Actinobacteria |
| 42 | *Bifidobacterium pseudocatenulatum* | Actinobacteria |
| 43 | *Bilophila wadsworthia* | Proteobacteria |
| 44 | *Blautia glucerasea* | Firmicutes |
| 45 | *Blautia obeum* | Firmicutes |
| 46 | *Blautia schinkii* | Firmicutes |
| 47 | *Blautia wexlerae* | Firmicutes |
| 48 | *Butyricimonas virosa* | Bacteroidetes |
| 49 | *Butyrivibrio crossotus* | Firmicutes |
| 50 | *Campylobacter upsaliensis* | Proteobacteria |
| 51 | *Christensenella massiliensis* | Firmicutes |
| 52 | *Clostridiales bacterium* | Firmicutes |
| 53 | *Clostridium leptum* | Firmicutes |
| 54 | *Clostridium perfringens* | Firmicutes |
| 55 | *Clostridium scindens* | Firmicutes |
| 56 | *Clostridium symbiosum* | Firmicutes |
| 57 | *Collinsella aerofaciens* | Actinobacteria |
| 58 | *Collinsella intestinalis* | Actinobacteria |
| 59 | *Coprobacter fastidiosus* | Bacteroidetes |
| 60 | *Coprococcus catus* | Firmicutes |
| 61 | *Coprococcus comes* | Firmicutes |
| 62 | *Coprococcus eutactus* | Firmicutes |
| 63 | *Desulfovibrio piger* | Proteobacteria |
| 64 | *Dielma fastidiosa* | Firmicutes |
| 65 | *Dorea longicatena* | Firmicutes |
| 66 | *Eisenbergiella tayi* | Firmicutes |
| 67 | *Enterococcus faecalis* | Firmicutes |
| 68 | *Enterococcus faecium* | Firmicutes |
| 69 | *Enterococcus hirae* | Firmicutes |
| 70 | *Erysipelatoclostridium ramosum* | Firmicutes |
| 71 | *Erysipelotrichaceae bacterium* | Firmicutes |
| 72 | *Escherichia coli* | Proteobacteria |
| 73 | *Eubacterium limosum* | Firmicutes |
| 74 | *Eubacterium ramulus* | Firmicutes |
| 75 | *Eubacterium rectale* | Firmicutes |
| 76 | *Eubacterium siraeum* | Firmicutes |
| 77 | *Eubacterium ventriosum* | Firmicutes |
| 78 | *Faecalibacterium prausnitzii* | Firmicutes |
| 79 | *Faecalicatena contorta* | Firmicutes |
| 80 | *Flavonifractor plautii* | Firmicutes |
| 81 | *Fusicatenibacter saccharivorans* | Firmicutes |
| 82 | *Fusobacterium mortiferum* | Fusobacteria |
| 83 | *Fusobacterium varium* | Fusobacteria |
| 84 | *Gemmiger formicilis* | Firmicutes |
| 85 | *Gordonibacter pamelaeae* | Actinobacteria |
| 86 | *Holdemanella biformis* | Firmicutes |
| 87 | *Hungatella hathewayi* | Firmicutes |
| 88 | *Intestinimonas butyriciproducens* | Firmicutes |
| 89 | *Klebsiella pneumoniae* | Proteobacteria |
| 90 | *Lachnospiraceae bacterium* | Firmicutes |
| 91 | *Lactobacillus acidophilus* | Firmicutes |
| 92 | *Lactobacillus crispatus* | Firmicutes |
| 93 | *Lactobacillus delbrueckii* | Firmicutes |
| 94 | *Lactobacillus helveticus* | Firmicutes |
| 95 | *Lactococcus lactis* | Firmicutes |
| 96 | *Leuconostoc lactis* | Firmicutes |
| 97 | *Mitsuokella multacida* | Firmicutes |
| 98 | *Negativibacillus massiliensis* | Firmicutes |
| 99 | *Odoribacter splanchnicus* | Bacteroidetes |
| 100 | *Parabacteroides distasonis* | Bacteroidetes |
| 101 | *Parabacteroides goldsteinii* | Bacteroidetes |
| 102 | *Parabacteroides gordonii* | Bacteroidetes |
| 103 | *Parabacteroides johnsonii* | Bacteroidetes |
| 104 | *Parabacteroides merdae* | Bacteroidetes |
| 105 | *Paraprevotella clara* | Bacteroidetes |
| 106 | *Parasutterella excrementihominis* | Proteobacteria |
| 107 | *Pediococcus parvulus* | Firmicutes |
| 108 | *Prevotella copri* | Bacteroidetes |
| 109 | *Pseudoflavonifractor capillosus* | Firmicutes |
| 110 | *Romboutsia timonensis* | Firmicutes |
| 111 | *Roseburia faecis* | Firmicutes |
| 112 | *Roseburia intestinalis* | Firmicutes |
| 113 | *Roseburia inulinivorans* | Firmicutes |
| 114 | *Ruminococcaceae bacterium* | Firmicutes |
| 115 | *Ruminococcus bromii* | Firmicutes |
| 116 | *Ruminococcus champanellensis* | Firmicutes |
| 117 | *Ruminococcus gnavus* | Firmicutes |
| 118 | *Ruminococcus lactaris* | Firmicutes |
| 119 | *Ruminococcus torques* | Firmicutes |
| 120 | *Sellimonas intestinalis* | Firmicutes |
| 121 | *Streptococcus equinus* | Firmicutes |
| 122 | *Streptococcus thermophilus* | Firmicutes |
| 123 | *Sutterella wadsworthensis* | Proteobacteria |
| 124 | *Turicibacter sanguinis* | Firmicutes |
| 125 | *Turicimonas muris* | Proteobacteria |
| 126 | *Tyzzerella nexilis* | Firmicutes |
| 127 | *Victivallis vadensis* | Lentisphaerae |

## Table S6. List of species with modest prevalence (≥50%) and mean relative abundance (≥0.1%) in the different dietary groups

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Omnivorous group** | |  | **Vegetarian group** | |
| **Species** | **Prevalence (%)** | **Mean relative abundance (%)** | **Species** | **Prevalence (%)** | **Mean relative abundance (%)** |
| *Prevotella copri* | 86.9 | 25.9 | *Prevotella copri* | 90.5 | 34.4 |
| *Faecalibacterium prausnitzii* | 96.0 | 3.2 | *Escherichia coli* | 88.1 | 2.4 |
| *Eubacterium rectale* | 87.9 | 1.7 | *Faecalibacterium prausnitzii* | 95.2 | 1.4 |
| *Bacteroides ovatus* | 73.7 | 1.3 | *Eubacterium rectale* | 85.7 | 1.3 |
| *Bacteroides uniformis* | 72.7 | 1.3 | *Bifidobacterium catenulatum* | 54.7 | 1.1 |
| *Escherichia coli* | 79.8 | 1.2 | *Bifidobacterium adolescentis* | 76.2 | 1.0 |
| *Bifidobacterium adolescentis* | 75.8 | 1.1 | *Roseburia faecis* | 85.7 | 0.9 |
| *Roseburia faecis* | 91.9 | 1.0 | *Bacteroides xylanisolvens* | 52.4 | 0.8 |
| *Alistipes putredinis* | 52.5 | 0.9 | *Ruminococcaceae bacterium* | 59.5 | 0.5 |
| *Ruminococcus bromii* | 62.6 | 0.9 | *Roseburia inulinivorans* | 76.2 | 0.4 |
| *Roseburia inulinivorans* | 89.9 | 0.8 | *Bacteroides ovatus* | 69.0 | 0.3 |
| *Ruminococcaceae bacterium* | 68.7 | 0.8 | *Dorea longicatena* | 69.0 | 0.3 |
| *Bifidobacterium catenulatum* | 57.6 | 0.7 | *Lachnospiraceae bacterium* | 76.2 | 0.3 |
| *Bifidobacterium longum* | 66.7 | 0.5 | *Bifidobacterium longum* | 61.9 | 0.2 |
| *Bacteroides caccae* | 58.6 | 0.5 | *Collinsella aerofaciens* | 71.4 | 0.2 |
| *Bacteroides xylanisolvens* | 56.6 | 0.5 | *Parabacteroides merdae* | 57.1 | 0.2 |
| *Collinsella aerofaciens* | 70.7 | 0.4 | *Parabacteroides distasonis* | 66.7 | 0.2 |
| *Gemmiger formicilis* | 77.8 | 0.4 | *Coprococcus eutactus* | 61.9 | 0.2 |
| *Lachnospiraceae bacterium* | 81.8 | 0.3 | *Klebsiella pneumoniae* | 57.1 | 0.2 |
| *Blautia wexlerae* | 59.6 | 0.3 | *Odoribacter splanchnicus* | 52.4 | 0.1 |
| *Coprococcus eutactus* | 63.6 | 0.3 | *Alistipes shahii* | 54.8 | 0.1 |
| *Dorea longicatena* | 67.7 | 0.2 | *Roseburia intestinalis* | 52.4 | 0.1 |
| *Roseburia intestinalis* | 52.5 | 0.2 | *Gemmiger formicilis* | 64.3 | 0.1 |
| *Parabacteroides distasonis* | 70.7 | 0.2 |  |  |  |
| *Alistipes shahii* | 54.5 | 0.2 |  |  |  |
| *Odoribacter splanchnicus* | 65.7 | 0.2 |  |  |  |
| *Bacteroides thetaiotaomicron* | 58.6 | 0.1 |  |  |  |
| *Ruminococcus torques* | 55.5 | 0.1 |  |  |  |
| *Fusicatenibacter saccharivorans* | 54.5 | 0.1 |  |  |  |

## Table S7. Significantly abundant B-vitamin producers in vegetarian with respect to omnivorous dietary group (FDR p-value <= 0.05)

|  |  |  |
| --- | --- | --- |
| **Species** | **baseMean** | **log2FoldChange** |
| *Campylobacter upsaliensis* | 140.6 | -30.0 |
| *Holdemanella biformis* | 3552.6 | 14.8 |
| *Anaerostipes hadrus* | 4789.8 | 10.0 |
| *Eubacterium ventriosum* | 1120.5 | 12.9 |
| *Parasutterella excrementihominis* | 2484.0 | 14.8 |
| *Coprobacter fastidiosus* | 0.7 | -24.4 |
| *Parabacteroides goldsteinii* | 489.5 | 22.1 |
| *Coprococcus catus* | 2730.9 | 7.4 |
| *Ruminococcus lactaris* | 2026.3 | 11.8 |
| *Blautia glucerasea* | 214.4 | 11.5 |
| *Lactobacillus acidophilus* | 7.8 | -14.4 |
| *Clostridium symbiosum* | 184.3 | 12.3 |
| *Intestinimonas butyriciproducens* | 54.5 | -14.2 |
| *Clostridium leptum* | 3.6 | 13.8 |
| *Bacteroides intestinalis* | 87.8 | 12.9 |
| *Ruminococcus champanellensis* | 726.4 | 12.1 |

## **Table S8. Species with modest prevalence (≥50%) and abundance (≥0.1%) in each of the lifestyle/location groups**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Urban (Bhopal)** | |  | **Urban (Kasargod)** | |  | **Tribal** | |
| **Species** | **Mean relative abundance** | **Prevalence** | **Species** | **Mean relative abundance** | **Prevalence** | **Species** | **Mean relative abundance** | **Prevalence** |
| *Prevotella copri* | 35.0 | 88.7 | *Prevotella copri* | 19.3 | 80.7 | *Prevotella copri* | 33.8 | 100.0 |
| *Escherichia coli* | 2.1 | 86.8 | *Faecalibacterium prausnitzii* | 3.9 | 96.5 | *Faecalibacterium prausnitzii* | 2.9 | 100.0 |
| *Faecalibacterium prausnitzii* | 1.2 | 92.48 | *Bacteroides ovatus* | 2.2 | 82.5 | *Bifidobacterium adolescentis* | 2.6 | 100.0 |
| *Eubacterium rectale* | 1.1 | 79.2 | *Bacteroides uniformis* | 1.8 | 80.7 | *Bifidobacterium catenulatum* | 2.1 | 93.5 |
| *Bacteroides uniformis* | 0.8 | 54.7 | *Eubacterium rectale* | 1.8 | 87.7 | *Eubacterium rectale* | 2.0 | 100.0 |
| *Bifidobacterium catenulatum* | 0.7 | 50.9 | *Escherichia coli* | 1.68 | 77.2 | *Roseburia faecis* | 1.7 | 100.0 |
| *Klebsiella pneumoniae* | 0.7 | 66.0 | *Ruminococcus bromii* | 1.48 | 70.2 | *Bifidobacterium angulatum* | 1.4 | 83.9 |
| *Ruminococcaceae bacterium* | 0.7 | 60.4 | *Alistipes putredinis* | 1.3 | 52.6 | *Collinsella aerofaciens* | 0.8 | 100.0 |
| *Roseburia faecis* | 0.6 | 81.1 | *Roseburia inulinivorans* | 1.2 | 86.0 | *Bifidobacterium longum* | 0.8 | 96.8 |
| *Bifidobacterium adolescentis* | 0.5 | 73.6 | *Bacteroides fragilis* | 1.2 | 61.4 | *Lachnospiraceae bacterium* | 0.7 | 100.0 |
| *Bacteroides caccae* | 0.4 | 50.9 | *Roseburia faecis* | 1.0 | 93.0 | *Blautia wexlerae* | 0.7 | 100.0 |
| *Roseburia inulinivorans* | 0.3 | 77.4 | *Ruminococcaceae bacterium* | 0.8 | 63.2 | *Escherichia coli* | 0.6 | 83.9 |
| *Bacteroides ovatus* | 0.3 | 66.0 | *Bacteroides caccae* | 0.8 | 70.2 | *Dorea longicatena* | 0.5 | 100.0 |
| *Parabacteroides distasonis* | 0.2 | 66.0 | *Bacteroides xylanisolvens* | 0.8 | 56.1 | *Ruminococcaceae bacterium* | 0.4 | 80.6 |
| *Parabacteroides merdae* | 0.2 | 56.6 | *Bifidobacterium adolescentis* | 0.8 | 64.9 | *Coprococcus eutactus* | 0.4 | 83.9 |
| *Dorea longicatena* | 0.2 | 52.8 | *Bifidobacterium longum* | 0.6 | 57.9 | *Ruminococcus torques* | 0.3 | 100.0 |
| *Alistipes shahii* | 0.2 | 54.7 | *Gemmiger formicilis* | 0.5 | 75.4 | *Fusicatenibacter saccharivorans* | 0.3 | 100.0 |
| *Bifidobacterium longum* | 0.1 | 54.7 | *Coprococcus eutactus* | 0.3 | 64.9 | *Ruminococcus bromii* | 0.3 | 67.7 |
| *Odoribacter splanchnicus* | 0.1 | 58.5 | *Collinsella aerofaciens* | 0.3 | 59.6 | *Gemmiger formicilis* | 0.3 | 100.0 |
| *Lachnospiraceae bacterium* | 0.1 | 71.7 | *Lachnospiraceae bacterium* | 0.3 | 77.2 | *Alistipes putredinis* | 0.3 | 58.1 |
| *Collinsella aerofaciens* | 0.1 | 66.0 | *Blautia wexlerae* | 0.3 | 56.1 | *Roseburia intestinalis* | 0.2 | 80.1 |
| *Gemmiger formicilis* | 0.1 | 56.6 | *Bacteroides thetaiotaomicron* | 0.3 | 71.9 | *Roseburia inulinivorans* | 0.2 | 100.0 |
|  |  |  | *Odoribacter splanchnicus* | 0.2 | 68.4 | *Anaerostipes hadrus* | 0.2 | 100.0 |
|  |  |  | *Parabacteroides distasonis* | 0.2 | 73.7 | *Sutterella wadsworthensis* | 0.1 | 80.6 |
|  |  |  | *Alistipes shahii* | 0.2 | 52.6 | *Coprococcus catus* | 0.1 | 100.0 |
|  |  |  | *Dorea longicatena* | 0.1 | 64.9 | *Holdemanella biformis* | 0.1 | 71.0 |
|  |  |  |  |  |  | *Coprococcus comes* | 0.1 | 90.3 |
|  |  |  |  |  |  | *Eubacterium siraeum* | 0.1 | 54.8 |
|  |  |  |  |  |  | *Parabacteroides distasonis* | 0.1 | 67.7 |
|  |  |  |  |  |  | *Blautia schinkii* | 0.1 | 67.7 |
|  |  |  |  |  |  | *Blautia obeum* | 0.1 | 100.0 |
|  |  |  |  |  |  | *Bacteroides uniformis* | 0.1 | 54.8 |

## 

## Table S9. Significantly prevalent species between any two lifestyle/location groups (p-adjusted <=0.05).

|  |  |  |
| --- | --- | --- |
| **Species** | **Prevalence** | |
|  | **Tribal** | **Urban (Bhopal)** |
| *Bifidobacterium adolescentis* | 100.0 | 73.6 |
| *Collinsella aerofaciens* | 100.0 | 66.0 |
| *Bifidobacterium longum* | 96.8 | 54.7 |
| *Bifidobacterium catenulatum* | 93.5 | 50.9 |
| *Bifidobacterium angulatum* | 83.9 | 17.0 |
| *Anaerostipes hadrus* | 100.0 | 3.8 |
| *Blautia obeum* | 100.0 | 11.3 |
| *Blautia wexlerae* | 100.0 | 30.2 |
| *Coprococcus catus* | 100.0 | 3.8 |
| *Dorea longicatena* | 100.0 | 52.8 |
| *Eubacterium rectale* | 100.0 | 79.2 |
| *Fusicatenibacter saccharivorans* | 100.0 | 15.1 |
| *Gemmiger formicilis* | 100.0 | 56.6 |
| *Lachnospiraceae bacterium* | 100.0 | 71.7 |
| *Roseburia faecis* | 100.0 | 81.1 |
| *Ruminococcus torques* | 100.0 | 34.0 |
| *Roseburia inulinivorans* | 100.0 | 77.4 |
| *Coprococcus comes* | 90.3 | 52.8 |
| *Coprococcus eutactus* | 83.9 | 49.1 |
| *Roseburia intestinalis* | 80.6 | 41.5 |
| *Holdemanella biformis* | 71.0 | 9.4 |
| *Blautia schinkii* | 67.7 | 3.8 |
| *Ruminococcus bromii* | 67.7 | 39.6 |
| *Eubacterium siraeum* | 54.8 | 22.6 |
| *Sutterella wadsworthensis* | 80.6 | 43.4 |
| *Klebsiella pneumoniae* | 16.1 | 66.0 |
|  | **Tribal** | **Urban (Kasargod)** |
| *Bifidobacterium adolescentis* | 100.0 | 64.9 |
| *Collinsella aerofaciens* | 100.0 | 59.6 |
| *Bifidobacterium longum* | 96.8 | 57.9 |
| *Bifidobacterium catenulatum* | 93.5 | 42.1 |
| *Bifidobacterium angulatum* | 83.9 | 1.8 |
| *Prevotella copri* | 100.0 | 80.7 |
| *Bacteroides uniformis* | 54.8 | 80.7 |
| *Bacteroides thetaiotaomicron* | 38.7 | 71.9 |
| *Bacteroides caccae* | 32.3 | 70.2 |
| *Bacteroides fragilis* | 32.3 | 61.4 |
| *Anaerostipes hadrus* | 100.0 | 28.1 |
| *Blautia obeum* | 100.0 | 33.3 |
| *Blautia wexlerae* | 100.0 | 56.1 |
| *Coprococcus catus* | 100.0 | 19.3 |
| *Dorea longicatena* | 100.0 | 64.9 |
| *Fusicatenibacter saccharivorans* | 100.0 | 45.6 |
| *Gemmiger formicilis* | 100.0 | 75.4 |
| *Lachnospiraceae bacterium* | 100.0 | 77.2 |
| *Ruminococcus torques* | 100.0 | 45.6 |
| *Coprococcus comes* | 90.3 | 31.6 |
| *Roseburia intestinalis* | 80.6 | 47.4 |
| *Holdemanella biformis* | 71.0 | 8.8 |
| *Blautia schinkii* | 67.7 | 3.5 |
| *Eubacterium siraeum* | 54.8 | 26.3 |
| *Sutterella wadsworthensis* | 80.6 | 33.3 |
|  | **Urban - Central India (Bhopal)** | **Urban - Southern India (Kasargod)** |
| *Bifidobacterium angulatum* | 17.0 | 1.8 |
| *Bacteroides uniformis* | 54.7 | 80.7 |
| *Bacteroides thetaiotaomicron* | 39.6 | 71.9 |
| *Bacteroides caccae* | 50.9 | 70.2 |
| *Bacteroides fragilis* | 35.8 | 61.4 |
| *Anaerostipes hadrus* | 3.8 | 28.1 |
| *Blautia obeum* | 11.3 | 33.3 |
| *Blautia wexlerae* | 30.2 | 56.1 |
| *Coprococcus catus* | 3.8 | 19.3 |
| *Fusicatenibacter saccharivorans* | 15.1 | 45.6 |
| *Gemmiger formicilis* | 56.6 | 75.4 |
| *Coprococcus comes* | 52.8 | 31.6 |
| *Ruminococcus bromii* | 39.6 | 70.2 |
| *Klebsiella pneumoniae* | 66.0 | 38.6 |

## 

## Table S10. Differentially abundant species between any two lifestyle/location groups.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Urban (Bhopal) w.r.t. Tribal** | | **Urban (Kasargod) w.r.t. Tribal** | | **Urban (Kasargod) w.r.t. Urban (Bhopal)** | |
| **Species** | **Log2 fold change** | **Species** | **Log2 Fold Change** | **Species** | **Log2 Fold Change** |
| *Blautia schinkii* | -20.3 | *Bifidobacterium angulatum* | -12.6 | *Bifidobacterium angulatum* | -8.9 |
| *Anaerostipes hadrus* | -15.3 | *Blautia schinkii* | -7.8 | *Coprococcus catus* | 8.5 |
| *Coprococcus catus* | -14.7 | *Coprococcus catus* | -6.2 | *Blautia schinkii* | 12.4 |
| *Holdemanella biformis* | -14.7 | *Bifidobacterium catenulatum* | -5.8 | *Anaerostipes hadrus* | 13.1 |
| *Fusicatenibacter saccharivorans* | -5.4 | *Fusicatenibacter saccharivorans* | -4.7 | *Holdemanella biformis* | 14.0 |
| *Blautia wexlerae* | -3.7 | *Ruminococcus torques* | -3.2 |  |  |
| *Bifidobacterium catenulatum* | -3.3 | *Faecalibacterium prausnitzii* | 1.9 |  |  |
| *Lachnospiraceae bacterium* | -2.0 | *Ruminococcaceae bacterium* | 2.9 |  |  |
| *Escherichia coli* | 2.8 | *Bacteroides thetaiotaomicron* | 3.7 |  |  |
| *Bacteroides uniformis* | 3.5 | *Bacteroides uniformis* | 4.0 |  |  |
| *Bacteroides ovatus* | 3.6 | *Bacteroides ovatus* | 4.3 |  |  |
| *Bacteroides caccae* | 5.3 | *Bacteroides caccae* | 5.3 |  |  |
| *Klebsiella pneumoniae* | 9.7 | *Klebsiella pneumoniae* | 6.0 |  |  |

## Table S11. Effect of **lifestyle/location** on the **abundance** of B-vitamin biosynthetic pathways (reference: Tribal).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **feature** | **metadata** | **value** | **coef** | **stderr** | **N** | **pval** | **qval** |
| thiamin | location | Bhopal | -0.4 | 0.09 | 141 | 0 | 0 |
| riboflavin | location | Bhopal | -0.5 | 0.13 | 141 | 0 | 0.01 |
| thiamin | location | Kasaragod | -0.29 | 0.08 | 141 | 0 | 0.01 |
| pantothenate | location | Bhopal | -1.03 | 0.29 | 141 | 0 | 0.01 |
| niacin | location | Kasaragod | -0.34 | 0.12 | 141 | 0 | 0.04 |
| biotin | location | Bhopal | -0.62 | 0.21 | 141 | 0 | 0.04 |
| folate | location | Kasaragod | -0.94 | 0.33 | 141 | 0.01 | 0.04 |
| riboflavin | location | Kasaragod | -0.33 | 0.12 | 141 | 0.01 | 0.06 |
| thiamin | Gender | Male | -0.14 | 0.06 | 141 | 0.02 | 0.13 |
| niacin | Gender | Male | 0.2 | 0.09 | 141 | 0.02 | 0.13 |
| pantothenate | location | Kasaragod | -0.59 | 0.27 | 141 | 0.03 | 0.16 |
| pyridoxine | location | Bhopal | -0.5 | 0.24 | 141 | 0.04 | 0.16 |
| pyridoxine | Gender | Male | -0.34 | 0.16 | 141 | 0.04 | 0.16 |
| cobalamin | location | Bhopal | -0.5 | 0.24 | 141 | 0.04 | 0.16 |
| cobalamin | age | Young\_adult | 0.44 | 0.23 | 141 | 0.06 | 0.22 |

**Table S12. Uniprot ID and annotation of the genes that are part of B-vitamin biosynthesis pathways.**

|  |  |
| --- | --- |
| **Thiamin biosynthesis pathway (THISYN-PWY)** |  |
| Uniprot Ids | Function |
| P0A6B7 | Cysteine desulfurase IscS |
| P0AGG0 | Thiamine-monophosphate kinase |
| P30136 | Phosphomethylpyrimidine synthase |
| P30137 | Thiamine-phosphate synthase |
| P30138 | Sulfur carrier protein ThiS adenylyltransferase |
| P30139 | Thiazole synthase |
| P30140 | 2-iminoacetate synthase |
| P77488 | 1-deoxy-D-xylulose-5-phosphate synthase |
| P77718 | tRNA sulfurtransferase |
| P76422 | Hydroxymethylpyrimidine/phosphomethylpyrimidine kinase |
|  |  |
| **Riboflavin biosynthesis pathway (RIBOSYN2-PWY)** |  |
| Uniprot Ids | Function |
| P0A7I7 | GTP cyclohydrolase-2 |
| P0A7J0 | 3,4-dihydroxy-2-butanone 4-phosphate synthase |
| P0ADP0 | 5-amino-6-(5-phospho-D-ribitylamino)uracil phosphatase YigB |
| P0AFU8 | Riboflavin synthase |
| P0AG40 | Bifunctional riboflavin kinase/FMN adenylyltransferase |
| P25539 | Riboflavin biosynthesis protein RibD |
| P61714 | 6,7-dimethyl-8-ribityllumazine synthase |
| P75809 | 5-amino-6-(5-phospho-D-ribitylamino)uracil phosphatase YbjI |
|  |  |
| **Niacin biosynthesis pathway (PYRIDNUCSYN-PWY)** |  |
| Uniprot Ids | Function |
| P10902 | L-aspartate oxidase |
| P11458 | Quinolinate synthase |
| P30011 | Nicotinate-nucleotide pyrophosphorylase [carboxylating] |
| P0A752 | Nicotinate-nucleotide adenylyltransferase |
| P18843 | NH(3)-dependent NAD(+) synthetase |
|  |  |
| **Pantothenate biosynthesis pathway (PANTO-PWY)** |  |
| Uniprot Ids | Function |
| P31057 | 3-methyl-2-oxobutanoate hydroxymethyltransferase |
| P0A9J4 | 2-dehydropantoate 2-reductase |
| P05793 | Ketol-acid reductoisomerase (NADP(+)) |
| P31663 | Pantothenate synthetase |
| P0A6I3 | Pantothenate kinase |
|  |  |
| **Pyridoxine biosynthesis pathway (PYRIDOXSYN-PWY)** |  |
| Uniprot Ids | Function |
| P05459 | Erythronate-4-phosphate dehydrogenase |
| P0A794 | Pyridoxine 5'-phosphate synthase |
| P0A9B6 | D-erythrose-4-phosphate dehydrogenase |
| P0AFI7 | Pyridoxine/pyridoxamine 5'-phosphate oxidase |
| P19624 | 4-hydroxythreonine-4-phosphate dehydrogenase |
| P23721 | Phosphoserine aminotransferase |
| P77488 | 1-deoxy-D-xylulose-5-phosphate synthase |
|  |  |
| **Biotin biosynthesis pathway (BIOTIN-BIOSYNTHESIS-PWY)** |  |
| Uniprot Ids | Function |
| P12999 | Malonyl-[acyl-carrier protein] O-methyltransferase |
| P0AEK2 | 3-oxoacyl-[acyl-carrier-protein] reductase FabG |
| P0A6Q6 | 3-hydroxyacyl-[acyl-carrier-protein] dehydratase FabZ |
| P0AEK4 | Enoyl-[acyl-carrier-protein] reductase [NADH] FabI |
| P0AAI5 | 3-oxoacyl-[acyl-carrier-protein] synthase 2 |
| P0A953 | 3-oxoacyl-[acyl-carrier-protein] synthase 1 |
| P13001 | Pimeloyl-[acyl-carrier protein] methyl ester esterase |
| P12998 | 8-amino-7-oxononanoate synthase |
| P12995 | Adenosylmethionine-8-amino-7-oxononanoate aminotransferase |
| P0A6E9 | ATP-dependent dethiobiotin synthetase BioD 2 |
| P13000 | ATP-dependent dethiobiotin synthetase BioD 1 |
| P12996 | Biotin synthase |
|  |  |
| **Folate biosynthesis pathway (FOLSYN-PWY)** |  |
| Uniprot Ids | Function |
| P0A6T5 | GTP cyclohydrolase 1 |
| P05041 | Aminodeoxychorismate synthase component 1 |
| P00903 | Aminodeoxychorismate synthase component 2 |
| P28305 | Aminodeoxychorismate lyase |
| P0AFC0 | Dihydroneopterin triphosphate diphosphatase |
| P0AC16 | Dihydroneopterin aldolase |
| P26281 | 2-amino-4-hydroxy-6-hydroxymethyldihydropteridine pyrophosphokinase |
| P0AC13 | Dihydropteroate synthase |
| P08192 | Dihydrofolate synthase/folylpolyglutamate synthase |
| P0ABQ4 | Dihydrofolate reductase |
| P0AFS3 | Dihydromonapterin reductase |
|  |  |
| **Cobalamin biosynthesis pathway (PWY-5507)** |  |
| Uniprot Ids | Function |
| Q9XDM4 | L-threonine kinase |
| P97084 | Threonine-phosphate decarboxylase |
| P0CL07 | Glutamate-1-semialdehyde 2,1-aminomutase |
| Q05603 | Nicotinate-nucleotide--dimethylbenzimidazole phosphoribosyltransferase |
| P25924 | Siroheme synthase |
| Q05592 | Sirohydrochlorin cobaltochelatase |
| Q05593 | Cobalt-precorrin-2 C(20)-methyltransferase |
| Q05590 | Probable cobalt-factor III C(17)-methyltransferase |
| P0A2G9 | Cobalt-precorrin-4 C(11)-methyltransferase |
| Q05631 | Cobalt-precorrin-5A hydrolase |
| Q05628 | Cobalt-precorrin-5B C(1)-methyltransferase |
| Q05591 | Cobalt-precorrin-6A reductase |
| Q05632 | Cobalt-precorrin-6B C(15)-methyltransferase (decarboxylating) |
| P0A2H1 | Cobalt-precorrin-7 C(5)-methyltransferase |
| Q05601 | Cobalt-precorrin-8 methylmutase |
| P29946 | Cobyrinate a,c-diamide synthase |
| P31570 | Corrinoid adenosyltransferase CobA |
| Q8ZQX1 | Flavodoxin 1 |
| Q05597 | Cobyric acid synthase |
| Q05600 | Cobalamin biosynthesis protein CbiB |
| Q05599 | Bifunctional adenosylcobalamin biosynthesis protein CobU |
| Q05602 | Adenosylcobinamide-GDP ribazoletransferase |
| P39701 | Adenosylcobalamin/alpha-ribazole phosphatase |

## Table S13. **Taxonomic annotation of MAGs**.

|  |  |  |
| --- | --- | --- |
| **Bins** | **Taxa level** | **Taxonomy** |
| MAG\_100 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Negativicutes|o\_\_Veillonellales|f\_\_Veillonellaceae|g\_\_Veillonella|s\_\_Veillonella\_seminalis|t\_\_SGB6923 |
| MAG\_111 | Family | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Lachnospiraceae|g\_\_GGB3420|s\_\_GGB3420\_SGB4539|t\_\_SGB4539 |
| MAG\_116 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB2834|o\_\_OFGB2834|f\_\_FGB2834|g\_\_GGB9061|s\_\_GGB9061\_SGB13979|t\_\_SGB13979 |
| MAG\_117 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB3170|o\_\_OFGB3170|f\_\_FGB3170|g\_\_GGB10690|s\_\_GGB10690\_SGB17345|t\_\_SGB17345 |
| MAG\_121 | Species | k\_\_Bacteria|p\_\_Bacteroidetes|c\_\_Bacteroidia|o\_\_Bacteroidales|f\_\_Tannerellaceae|g\_\_Parabacteroides|s\_\_Parabacteroides\_merdae|t\_\_SGB1949 |
| MAG\_122 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB1195|o\_\_OFGB1195|f\_\_FGB1195|g\_\_GGB2949|s\_\_GGB2949\_SGB3926|t\_\_SGB3926 |
| MAG\_131 | Family | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Ruminococcaceae|g\_\_GGB3341|s\_\_GGB3341\_SGB4420|t\_\_SGB4420 |
| MAG\_133 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Clostridiales\_unclassified|g\_\_Clostridiales\_unclassified|s\_\_Bacteroides\_pectinophilus|t\_\_SGB5068 |
| MAG\_140 | Species | k\_\_Bacteria|p\_\_Actinobacteria|c\_\_Coriobacteriia|o\_\_Coriobacteriales|f\_\_Atopobiaceae|g\_\_Parolsenella|s\_\_Parolsenella\_catena|t\_\_SGB14379 |
| MAG\_141 | Species | k\_\_Bacteria|p\_\_Proteobacteria|c\_\_Betaproteobacteria|o\_\_Burkholderiales|f\_\_Sutterellaceae|g\_\_Sutterella|s\_\_Sutterella\_wadsworthensis|t\_\_SGB9283 |
| MAG\_145 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB3005|o\_\_OFGB3005|f\_\_FGB3005|g\_\_GGB9468|s\_\_GGB9468\_SGB14861|t\_\_SGB14861 |
| MAG\_149 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB2837|o\_\_OFGB2837|f\_\_FGB2837|g\_\_GGB9081|s\_\_GGB9081\_SGB14005|t\_\_SGB14005 |
| MAG\_150 | Family | k\_\_Bacteria|p\_\_Bacteroidetes|c\_\_Bacteroidia|o\_\_Bacteroidales|f\_\_Prevotellaceae|g\_\_GGB1246|s\_\_GGB1246\_SGB1667|t\_\_SGB1667 |
| MAG\_153 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Negativicutes|o\_\_Acidaminococcales|f\_\_Acidaminococcaceae|g\_\_Acidaminococcus|s\_\_Acidaminococcus\_intestini|t\_\_SGB5736 |
| MAG\_157 | Family | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Eubacteriaceae|g\_\_GGB3278|s\_\_GGB3278\_SGB4328|t\_\_SGB4328 |
| MAG\_158 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Bacilli|o\_\_Lactobacillales|f\_\_Lactobacillaceae|g\_\_Lactobacillus|s\_\_Lactobacillus\_delbrueckii|t\_\_SGB7020 |
| MAG\_161 | Species | k\_\_Bacteria|p\_\_Bacteroidetes|c\_\_Bacteroidia|o\_\_Bacteroidales|f\_\_Bacteroidaceae|g\_\_Bacteroides|s\_\_Bacteroides\_coprophilus|t\_\_SGB1888 |
| MAG\_164 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB1479|o\_\_OFGB1479|f\_\_FGB1479|g\_\_GGB3751|s\_\_GGB3751\_SGB5099|t\_\_SGB5099 |
| MAG\_175 | Family | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Ruminococcaceae|g\_\_GGB9608|s\_\_GGB9608\_SGB15041|t\_\_SGB15041 |
| MAG\_176 | Family | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Lachnospiraceae|g\_\_GGB3607|s\_\_GGB3607\_SGB4871|t\_\_SGB4871 |
| MAG\_178 | Other | k\_\_Bacteria|p\_\_Bacteroidetes|c\_\_CFGB529|o\_\_OFGB529|f\_\_FGB529|g\_\_GGB1093|s\_\_GGB1093\_SGB1404|t\_\_SGB1404 |
| MAG\_181 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB1215|o\_\_OFGB1215|f\_\_FGB1215|g\_\_GGB2975|s\_\_GGB2975\_SGB3957|t\_\_SGB3957 |
| MAG\_184 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB1325|o\_\_OFGB1325|f\_\_FGB1325|g\_\_GGB3175|s\_\_GGB3175\_SGB4191|t\_\_SGB4191 |
| MAG\_190 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB1311|o\_\_OFGB1311|f\_\_FGB1311|g\_\_GGB3139|s\_\_GGB3139\_SGB4152|t\_\_SGB4152 |
| MAG\_197 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB2834|o\_\_OFGB2834|f\_\_FGB2834|g\_\_GGB9060|s\_\_GGB9060\_SGB13977|t\_\_SGB13977 |
| MAG\_199 | Family | k\_\_Bacteria|p\_\_Proteobacteria|c\_\_Betaproteobacteria|o\_\_Burkholderiales|f\_\_Sutterellaceae|g\_\_GGB6578|s\_\_GGB6578\_SGB9299|t\_\_SGB9299 |
| MAG\_201 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB2105|o\_\_OFGB2105|f\_\_FGB2105|g\_\_GGB5978|s\_\_GGB5978\_SGB8595|t\_\_SGB8595 |
| MAG\_202 | Family | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Negativicutes|o\_\_Selenomonadales|f\_\_Selenomonadaceae|g\_\_GGB4979|s\_\_GGB4979\_SGB6973|t\_\_SGB6973 |
| MAG\_203 | Family | k\_\_Bacteria|p\_\_Bacteroidetes|c\_\_Bacteroidia|o\_\_Bacteroidales|f\_\_Tannerellaceae|g\_\_GGB1405|s\_\_GGB1405\_SGB1928|t\_\_SGB1928 |
| MAG\_206 | Species | k\_\_Bacteria|p\_\_Bacteroidetes|c\_\_Bacteroidia|o\_\_Bacteroidales|f\_\_Prevotellaceae|g\_\_Paraprevotella|s\_\_Paraprevotella\_clara|t\_\_SGB1798 |
| MAG\_21 | Family | k\_\_Bacteria|p\_\_Actinobacteria|c\_\_Actinobacteria|o\_\_Corynebacteriales|f\_\_Nocardiaceae|g\_\_GGB38239|s\_\_GGB38239\_SGB47716|t\_\_SGB47716 |
| MAG\_210 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Firmicutes\_unclassified|o\_\_Firmicutes\_unclassified|f\_\_Firmicutes\_unclassified|g\_\_Firmicutes\_unclassified|s\_\_Firmicutes\_bacterium\_AF16\_15|t\_\_SGB4993 |
| MAG\_217 | Family | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Eubacteriaceae|g\_\_GGB3280|s\_\_GGB3280\_SGB4333|t\_\_SGB4333 |
| MAG\_229 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB3069|o\_\_OFGB3069|f\_\_FGB3069|g\_\_GGB9762|s\_\_GGB9762\_SGB15377|t\_\_SGB15377 |
| MAG\_23 | Species | k\_\_Bacteria|p\_\_Bacteroidetes|c\_\_Bacteroidia|o\_\_Bacteroidales|f\_\_Bacteroidaceae|g\_\_Bacteroides|s\_\_Bacteroides\_thetaiotaomicron|t\_\_SGB1861 |
| MAG\_248 | Species | k\_\_Archaea|p\_\_Euryarchaeota|c\_\_Methanobacteria|o\_\_Methanobacteriales|f\_\_Methanobacteriaceae|g\_\_Methanobrevibacter|s\_\_Methanobrevibacter\_smithii|t\_\_SGB714 |
| MAG\_251 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Ruminococcaceae|g\_\_Ruminococcus|s\_\_Ruminococcus\_sp\_JE7A12|t\_\_SGB4272 |
| MAG\_252 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Ruminococcaceae|g\_\_Flavonifractor|s\_\_Flavonifractor\_plautii|t\_\_SGB15132 |
| MAG\_264 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB1877|o\_\_OFGB1877|f\_\_FGB1877|g\_\_GGB4978|s\_\_GGB4978\_SGB6970|t\_\_SGB6970 |
| MAG\_275 | Family | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Ruminococcaceae|g\_\_GGB13533|s\_\_GGB13533\_SGB20850|t\_\_SGB20850 |
| MAG\_279 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Clostridiaceae|g\_\_Clostridium|s\_\_Clostridium\_sp\_AF15\_49|t\_\_SGB5111 |
| MAG\_289 | Family | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Clostridiaceae|g\_\_GGB3486|s\_\_GGB3486\_SGB4658|t\_\_SGB4658 |
| MAG\_29 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB1778|o\_\_OFGB1778|f\_\_FGB1778|g\_\_GGB4700|s\_\_GGB4700\_SGB6506|t\_\_SGB6506 |
| MAG\_290 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Ruminococcaceae|g\_\_Subdoligranulum|s\_\_Subdoligranulum\_sp\_APC924\_74|t\_\_SGB15286 |
| MAG\_296 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Lachnospiraceae|g\_\_Mediterraneibacter|s\_\_Mediterraneibacter\_sp\_gm002|t\_\_SGB4553 |
| MAG\_302 | Family | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Lachnospiraceae|g\_\_GGB3733|s\_\_GGB3733\_SGB5066|t\_\_SGB5066 |
| MAG\_308 | Other | k\_\_Bacteria|p\_\_Proteobacteria|c\_\_CFGB1061|o\_\_OFGB1061|f\_\_FGB1061|g\_\_GGB2730|s\_\_GGB2730\_SGB3672|t\_\_SGB3672 |
| MAG\_312 | Other | k\_\_Bacteria|p\_\_Actinobacteria|c\_\_CFGB3176|o\_\_OFGB3176|f\_\_FGB3176|g\_\_GGB10708|s\_\_GGB10708\_SGB17364|t\_\_SGB17364 |
| MAG\_316 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB2932|o\_\_OFGB2932|f\_\_FGB2932|g\_\_GGB9258|s\_\_GGB9258\_SGB14205|t\_\_SGB14205 |
| MAG\_318 | Family | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Eubacteriaceae|g\_\_GGB3746|s\_\_GGB3746\_SGB5089|t\_\_SGB5089 |
| MAG\_325 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB1311|o\_\_OFGB1311|f\_\_FGB1311|g\_\_GGB3141|s\_\_GGB3141\_SGB4154|t\_\_SGB4154 |
| MAG\_327 | Other | k\_\_Bacteria|p\_\_Bacteroidetes|c\_\_CFGB630|o\_\_OFGB630|f\_\_FGB630|g\_\_GGB1497|s\_\_GGB1497\_SGB2076|t\_\_SGB2076 |
| MAG\_328 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB2932|o\_\_OFGB2932|f\_\_FGB2932|g\_\_GGB9261|s\_\_GGB9261\_SGB14209|t\_\_SGB14209 |
| MAG\_34 | Species | k\_\_Bacteria|p\_\_Bacteroidetes|c\_\_Bacteroidia|o\_\_Bacteroidales|f\_\_Rikenellaceae|g\_\_Alistipes|s\_\_Alistipes\_obesi|t\_\_SGB2290 |
| MAG\_348 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB1787|o\_\_OFGB1787|f\_\_FGB1787|g\_\_GGB4750|s\_\_GGB4750\_SGB6579|t\_\_SGB6579 |
| MAG\_35 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Firmicutes\_unclassified|o\_\_Firmicutes\_unclassified|f\_\_Firmicutes\_unclassified|g\_\_Firmicutes\_unclassified|s\_\_Firmicutes\_bacterium\_AF36\_3BH|t\_\_SGB4269 |
| MAG\_350 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB1778|o\_\_OFGB1778|f\_\_FGB1778|g\_\_GGB4704|s\_\_GGB4704\_SGB6511|t\_\_SGB6511 |
| MAG\_352 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Negativicutes|o\_\_Acidaminococcales|f\_\_Acidaminococcaceae|g\_\_Phascolarctobacterium|s\_\_Phascolarctobacterium\_faecium|t\_\_SGB5792 |
| MAG\_354 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Clostridiaceae|g\_\_Clostridium|s\_\_Clostridium\_sp\_AF02\_29|t\_\_SGB4705 |
| MAG\_356 | Family | k\_\_Bacteria|p\_\_Bacteroidetes|c\_\_Bacteroidia|o\_\_Bacteroidales|f\_\_Prevotellaceae|g\_\_GGB1147|s\_\_GGB1147\_SGB1473|t\_\_SGB1473 |
| MAG\_36 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Lachnospiraceae|g\_\_Coprococcus|s\_\_Coprococcus\_sp\_OM04\_5BH|t\_\_SGB5115 |
| MAG\_363 | Family | k\_\_Bacteria|p\_\_Elusimicrobia|c\_\_Elusimicrobia|o\_\_Elusimicrobiales|f\_\_Elusimicrobiaceae|g\_\_GGB12695|s\_\_GGB12695\_SGB19692|t\_\_SGB19692 |
| MAG\_374 | Other | k\_\_Bacteria|p\_\_Bacteroidetes|c\_\_CFGB619|o\_\_OFGB619|f\_\_FGB619|g\_\_GGB1458|s\_\_GGB1458\_SGB2021|t\_\_SGB2021 |
| MAG\_385 | Species | k\_\_Bacteria|p\_\_Proteobacteria|c\_\_Deltaproteobacteria|o\_\_Desulfovibrionales|f\_\_Desulfovibrionaceae|g\_\_Bilophila|s\_\_Bilophila\_wadsworthia|t\_\_SGB15452 |
| MAG\_386 | Family | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Clostridiaceae|g\_\_GGB3617|s\_\_GGB3617\_SGB4891|t\_\_SGB4891 |
| MAG\_389 | Family | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Ruminococcaceae|g\_\_GGB3340|s\_\_GGB3340\_SGB4419|t\_\_SGB4419 |
| MAG\_39 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB1311|o\_\_OFGB1311|f\_\_FGB1311|g\_\_GGB3140|s\_\_GGB3140\_SGB4153|t\_\_SGB4153 |
| MAG\_392 | Other | k\_\_Bacteria|p\_\_Bacteroidetes|c\_\_CFGB544|o\_\_OFGB544|f\_\_FGB544|g\_\_GGB1123|s\_\_GGB1123\_SGB1437|t\_\_SGB1437 |
| MAG\_399 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Clostridiaceae|g\_\_Clostridium|s\_\_Clostridium\_sp\_AF36\_4|t\_\_SGB4644 |
| MAG\_4 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Bacilli|o\_\_Lactobacillales|f\_\_Enterococcaceae|g\_\_Enterococcus|s\_\_Enterococcus\_faecium|t\_\_SGB7968 |
| MAG\_402 | Other | k\_\_Bacteria|p\_\_Proteobacteria|c\_\_CFGB2116|o\_\_OFGB2116|f\_\_FGB2116|g\_\_GGB6037|s\_\_GGB6037\_SGB8671|t\_\_SGB8671 |
| MAG\_404 | Family | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Clostridiaceae|g\_\_GGB3623|s\_\_GGB3623\_SGB4900|t\_\_SGB4900 |
| MAG\_408 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Ruminococcaceae|g\_\_Ruthenibacterium|s\_\_Ruthenibacterium\_lactatiformans|t\_\_SGB15271 |
| MAG\_418 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Lachnospiraceae|g\_\_Anaerobutyricum|s\_\_Anaerobutyricum\_hallii|t\_\_SGB4532 |
| MAG\_420 | Family | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Clostridiaceae|g\_\_GGB9568|s\_\_GGB9568\_SGB14980|t\_\_SGB14980 |
| MAG\_426 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Erysipelotrichia|o\_\_Erysipelotrichales|f\_\_Erysipelotrichaceae|g\_\_Erysipelatoclostridium|s\_\_Erysipelatoclostridium\_ramosum|t\_\_SGB6744 |
| MAG\_430 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Ruminococcaceae|g\_\_Ruminococcaceae\_unclassified|s\_\_Eubacterium\_siraeum|t\_\_SGB4198 |
| MAG\_438 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB1332|o\_\_OFGB1332|f\_\_FGB1332|g\_\_GGB3215|s\_\_GGB3215\_SGB4247|t\_\_SGB4247 |
| MAG\_439 | Genus | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Eubacteriaceae|g\_\_Eubacterium|s\_\_Eubacterium\_SGB4329|t\_\_SGB4329 |
| MAG\_440 | Other | k\_\_Bacteria|p\_\_Proteobacteria|c\_\_CFGB4212|o\_\_OFGB4212|f\_\_FGB4212|g\_\_GGB12502|s\_\_GGB12502\_SGB19434|t\_\_SGB19434 |
| MAG\_441 | Family | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Eubacteriaceae|g\_\_GGB3737|s\_\_GGB3737\_SGB5071|t\_\_SGB5071 |
| MAG\_444 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Clostridiaceae|g\_\_Clostridium|s\_\_Clostridium\_sp\_AM49\_4BH|t\_\_SGB4652 |
| MAG\_445 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Lachnospiraceae|g\_\_Mediterraneibacter|s\_\_Ruminococcus\_torques|t\_\_SGB4608 |
| MAG\_451 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Peptostreptococcaceae|g\_\_Romboutsia|s\_\_Romboutsia\_timonensis|t\_\_SGB6148 |
| MAG\_454 | Species | k\_\_Bacteria|p\_\_Bacteroidetes|c\_\_Bacteroidia|o\_\_Bacteroidales|f\_\_Tannerellaceae|g\_\_Parabacteroides|s\_\_Parabacteroides\_distasonis|t\_\_SGB1934 |
| MAG\_456 | Family | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Eubacteriaceae|g\_\_GGB3744|s\_\_GGB3744\_SGB5087|t\_\_SGB5087 |
| MAG\_46 | Family | k\_\_Bacteria|p\_\_Elusimicrobia|c\_\_Elusimicrobia|o\_\_Elusimicrobiales|f\_\_Elusimicrobiaceae|g\_\_GGB12696|s\_\_GGB12696\_SGB19694|t\_\_SGB19694 |
| MAG\_460 | Species | k\_\_Bacteria|p\_\_Proteobacteria|c\_\_Deltaproteobacteria|o\_\_Desulfovibrionales|f\_\_Desulfovibrionaceae|g\_\_Desulfovibrio|s\_\_Desulfovibrio\_piger|t\_\_SGB15467 |
| MAG\_461 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB2837|o\_\_OFGB2837|f\_\_FGB2837|g\_\_GGB9082|s\_\_GGB9082\_SGB14007|t\_\_SGB14007 |
| MAG\_463 | Other | k\_\_Bacteria|p\_\_Proteobacteria|c\_\_CFGB2163|o\_\_OFGB2163|f\_\_FGB2163|g\_\_GGB6127|s\_\_GGB6127\_SGB8773|t\_\_SGB8773 |
| MAG\_478 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB1218|o\_\_OFGB1218|f\_\_FGB1218|g\_\_GGB2983|s\_\_GGB2983\_SGB3965|t\_\_SGB3965 |
| MAG\_480 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Lachnospiraceae|g\_\_Butyrivibrio|s\_\_Butyrivibrio\_crossotus|t\_\_SGB5065 |
| MAG\_487 | Other | k\_\_Bacteria|p\_\_Actinobacteria|c\_\_CFGB2992|o\_\_OFGB2992|f\_\_FGB2992|g\_\_GGB9411|s\_\_GGB9411\_SGB14765|t\_\_SGB14765 |
| MAG\_49 | Other | k\_\_Bacteria|p\_\_Proteobacteria|c\_\_CFGB2402|o\_\_OFGB2402|f\_\_FGB2402|g\_\_GGB6593|s\_\_GGB6593\_SGB9323|t\_\_SGB9323 |
| MAG\_494 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Clostridiales\_unclassified|g\_\_Clostridiales\_unclassified|s\_\_Clostridiales\_bacterium\_KLE1615|t\_\_SGB5090 |
| MAG\_495 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB2873|o\_\_OFGB2873|f\_\_FGB2873|g\_\_GGB9172|s\_\_GGB9172\_SGB14110|t\_\_SGB14110 |
| MAG\_5 | Family | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Erysipelotrichia|o\_\_Erysipelotrichales|f\_\_Erysipelotrichaceae|g\_\_GGB4887|s\_\_GGB4887\_SGB6836|t\_\_SGB6836 |
| MAG\_505 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB2984|o\_\_OFGB2984|f\_\_FGB2984|g\_\_GGB9345|s\_\_GGB9345\_SGB14311|t\_\_SGB14311 |
| MAG\_51 | Species | k\_\_Bacteria|p\_\_Bacteroidetes|c\_\_Bacteroidia|o\_\_Bacteroidales|f\_\_Barnesiellaceae|g\_\_Barnesiella|s\_\_Barnesiella\_intestinihominis|t\_\_SGB1965 |
| MAG\_516 | Species | k\_\_Bacteria|p\_\_Bacteroidetes|c\_\_Bacteroidia|o\_\_Bacteroidales|f\_\_Bacteroidaceae|g\_\_Bacteroides|s\_\_Bacteroides\_coprocola|t\_\_SGB1891 |
| MAG\_522 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB3069|o\_\_OFGB3069|f\_\_FGB3069|g\_\_GGB9767|s\_\_GGB9767\_SGB15385|t\_\_SGB15385 |
| MAG\_533 | Species | k\_\_Bacteria|p\_\_Proteobacteria|c\_\_Betaproteobacteria|o\_\_Burkholderiales|f\_\_Sutterellaceae|g\_\_Duodenibacillus|s\_\_Duodenibacillus\_massiliensis|t\_\_SGB9273 |
| MAG\_538 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Lachnospiraceae|g\_\_Blautia|s\_\_Ruminococcus\_gnavus|t\_\_SGB4584 |
| MAG\_539 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Lachnospiraceae|g\_\_Dorea|s\_\_Dorea\_sp\_AF36\_15AT|t\_\_SGB4552 |
| MAG\_555 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Lachnospiraceae|g\_\_Anaerotignum|s\_\_Anaerotignum\_faecicola|t\_\_SGB5190 |
| MAG\_56 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB1311|o\_\_OFGB1311|f\_\_FGB1311|g\_\_GGB3142|s\_\_GGB3142\_SGB4155|t\_\_SGB4155 |
| MAG\_560 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Lachnospiraceae|g\_\_Lachnospiraceae\_unclassified|s\_\_Lachnospiraceae\_bacterium\_AM48\_27BH|t\_\_SGB4706 |
| MAG\_565 | Species | k\_\_Bacteria|p\_\_Bacteroidetes|c\_\_Bacteroidia|o\_\_Bacteroidales|f\_\_Odoribacteraceae|g\_\_Odoribacter|s\_\_Odoribacter\_splanchnicus|t\_\_SGB1790 |
| MAG\_567 | Species | k\_\_Bacteria|p\_\_Bacteroidetes|c\_\_Bacteroidia|o\_\_Bacteroidales|f\_\_Bacteroidaceae|g\_\_Bacteroides|s\_\_Bacteroides\_fragilis|t\_\_SGB1855 |
| MAG\_57 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Lachnospiraceae|g\_\_Blautia|s\_\_Blautia\_sp\_OF03\_15BH|t\_\_SGB4779 |
| MAG\_572 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB1311|o\_\_OFGB1311|f\_\_FGB1311|g\_\_GGB3140|s\_\_GGB3140\_SGB4153|t\_\_SGB4153 |
| MAG\_58 | Family | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Lachnospiraceae|g\_\_GGB3646|s\_\_GGB3646\_SGB4953|t\_\_SGB4953 |
| MAG\_581 | Family | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Ruminococcaceae|g\_\_GGB9737|s\_\_GGB9737\_SGB15310|t\_\_SGB15310 |
| MAG\_583 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB1355|o\_\_OFGB1355|f\_\_FGB1355|g\_\_GGB3305|s\_\_GGB3305\_SGB4368|t\_\_SGB4368 |
| MAG\_587 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Bacilli|o\_\_Lactobacillales|f\_\_Lactobacillaceae|g\_\_Lactobacillus|s\_\_Lactobacillus\_ruminis|t\_\_SGB7061 |
| MAG\_593 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB1418|o\_\_OFGB1418|f\_\_FGB1418|g\_\_GGB3473|s\_\_GGB3473\_SGB4636|t\_\_SGB4636 |
| MAG\_597 | Species | k\_\_Bacteria|p\_\_Spirochaetes|c\_\_Spirochaetia|o\_\_Spirochaetales|f\_\_Spirochaetaceae|g\_\_Treponema|s\_\_Treponema\_succinifaciens|t\_\_SGB3546 |
| MAG\_6 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB343|o\_\_OFGB343|f\_\_FGB343|g\_\_GGB781|s\_\_GGB781\_SGB1024|t\_\_SGB1024 |
| MAG\_60 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Lachnospiraceae|g\_\_Lachnospiraceae\_unclassified|s\_\_Lachnospiraceae\_bacterium\_OM04\_12BH|t\_\_SGB4893 |
| MAG\_601 | Family | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Clostridiaceae|g\_\_GGB3612|s\_\_GGB3612\_SGB4881|t\_\_SGB4881 |
| MAG\_604 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB2849|o\_\_OFGB2849|f\_\_FGB2849|g\_\_GGB9120|s\_\_GGB9120\_SGB14053|t\_\_SGB14053 |
| MAG\_61 | Species | k\_\_Bacteria|p\_\_Actinobacteria|c\_\_Actinobacteria|o\_\_Bifidobacteriales|f\_\_Bifidobacteriaceae|g\_\_Bifidobacterium|s\_\_Bifidobacterium\_bifidum|t\_\_SGB17256 |
| MAG\_613 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB2984|o\_\_OFGB2984|f\_\_FGB2984|g\_\_GGB9347|s\_\_GGB9347\_SGB14313|t\_\_SGB14313 |
| MAG\_615 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Ruminococcaceae|g\_\_Ruminococcaceae\_unclassified|s\_\_Ruminococcaceae\_bacterium|t\_\_SGB4391 |
| MAG\_620 | Family | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Lachnospiraceae|g\_\_GGB3588|s\_\_GGB3588\_SGB4808|t\_\_SGB4808 |
| MAG\_631 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB3068|o\_\_OFGB3068|f\_\_FGB3068|g\_\_GGB9760|s\_\_GGB9760\_SGB15373|t\_\_SGB15373 |
| MAG\_632 | Species | k\_\_Bacteria|p\_\_Bacteroidetes|c\_\_Bacteroidia|o\_\_Bacteroidales|f\_\_Bacteroidaceae|g\_\_Bacteroides|s\_\_Bacteroides\_fragilis|t\_\_SGB1853 |
| MAG\_636 | Other | k\_\_Bacteria|p\_\_Bacteroidetes|c\_\_CFGB654|o\_\_OFGB654|f\_\_FGB654|g\_\_GGB1617|s\_\_GGB1617\_SGB2214|t\_\_SGB2214 |
| MAG\_638 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Lachnospiraceae|g\_\_Roseburia|s\_\_Roseburia\_sp\_AF02\_12|t\_\_SGB4938 |
| MAG\_64 | Species | k\_\_Bacteria|p\_\_Proteobacteria|c\_\_Betaproteobacteria|o\_\_Burkholderiales|f\_\_Sutterellaceae|g\_\_Parasutterella|s\_\_Parasutterella\_excrementihominis|t\_\_SGB9262 |
| MAG\_640 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Bacilli|o\_\_Lactobacillales|f\_\_Streptococcaceae|g\_\_Streptococcus|s\_\_Streptococcus\_equinus|t\_\_SGB8022 |
| MAG\_658 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB1776|o\_\_OFGB1776|f\_\_FGB1776|g\_\_GGB4669|s\_\_GGB4669\_SGB6458|t\_\_SGB6458 |
| MAG\_668 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB2886|o\_\_OFGB2886|f\_\_FGB2886|g\_\_GGB9192|s\_\_GGB9192\_SGB14131|t\_\_SGB14131 |
| MAG\_669 | Family | k\_\_Bacteria|p\_\_Bacteroidetes|c\_\_Bacteroidia|o\_\_Bacteroidales|f\_\_Prevotellaceae|g\_\_GGB1267|s\_\_GGB1267\_SGB1701|t\_\_SGB1701 |
| MAG\_671 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB2837|o\_\_OFGB2837|f\_\_FGB2837|g\_\_GGB9083|s\_\_GGB9083\_SGB14011|t\_\_SGB14011 |
| MAG\_676 | Other | k\_\_Bacteria|p\_\_Proteobacteria|c\_\_CFGB1062|o\_\_OFGB1062|f\_\_FGB1062|g\_\_GGB2734|s\_\_GGB2734\_SGB3677|t\_\_SGB3677 |
| MAG\_677 | Family | k\_\_Bacteria|p\_\_Proteobacteria|c\_\_Betaproteobacteria|o\_\_Burkholderiales|f\_\_Sutterellaceae|g\_\_GGB6565|s\_\_GGB6565\_SGB9274|t\_\_SGB9274 |
| MAG\_683 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Clostridiaceae|g\_\_Clostridium|s\_\_Clostridium\_sp\_AF34\_13|t\_\_SGB4659 |
| MAG\_684 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Ruminococcaceae|g\_\_Ruminococcus|s\_\_Ruminococcus\_callidus|t\_\_SGB4422 |
| MAG\_685 | Species | k\_\_Bacteria|p\_\_Bacteroidetes|c\_\_Bacteroidia|o\_\_Bacteroidales|f\_\_Rikenellaceae|g\_\_Alistipes|s\_\_Alistipes\_indistinctus|t\_\_SGB2325 |
| MAG\_692 | Species | k\_\_Bacteria|p\_\_Proteobacteria|c\_\_Betaproteobacteria|o\_\_Burkholderiales|f\_\_Comamonadaceae|g\_\_Comamonas|s\_\_Comamonas\_kerstersii|t\_\_SGB12676 |
| MAG\_694 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB1446|o\_\_OFGB1446|f\_\_FGB1446|g\_\_GGB3574|s\_\_GGB3574\_SGB4782|t\_\_SGB4782 |
| MAG\_699 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB2982|o\_\_OFGB2982|f\_\_FGB2982|g\_\_GGB9342|s\_\_GGB9342\_SGB14306|t\_\_SGB14306 |
| MAG\_704 | Other | k\_\_Bacteria|p\_\_Tenericutes|c\_\_CFGB1777|o\_\_OFGB1777|f\_\_FGB1777|g\_\_GGB4689|s\_\_GGB4689\_SGB6487|t\_\_SGB6487 |
| MAG\_713 | Family | k\_\_Bacteria|p\_\_Bacteroidetes|c\_\_Bacteroidia|o\_\_Bacteroidales|f\_\_Prevotellaceae|g\_\_GGB1145|s\_\_GGB1145\_SGB1471|t\_\_SGB1471 |
| MAG\_714 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB1355|o\_\_OFGB1355|f\_\_FGB1355|g\_\_GGB3306|s\_\_GGB3306\_SGB4373|t\_\_SGB4373 |
| MAG\_717 | Family | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Clostridiaceae|g\_\_GGB3614|s\_\_GGB3614\_SGB4886|t\_\_SGB4886 |
| MAG\_720 | Family | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Eubacteriaceae|g\_\_GGB3281|s\_\_GGB3281\_SGB4335|t\_\_SGB4335 |
| MAG\_725 | Species | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Lachnospiraceae|g\_\_Coprococcus|s\_\_Coprococcus\_comes|t\_\_SGB4577 |
| MAG\_726 | Genus | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Eubacteriaceae|g\_\_Eubacterium|s\_\_Eubacterium\_SGB4290|t\_\_SGB4290 |
| MAG\_8 | Other | k\_\_Bacteria|p\_\_Firmicutes|c\_\_CFGB337|o\_\_OFGB337|f\_\_FGB337|g\_\_GGB765|s\_\_GGB765\_SGB1005|t\_\_SGB1005 |
| MAG\_83 | Family | k\_\_Bacteria|p\_\_Lentisphaerae|c\_\_Lentisphaeria|o\_\_Victivallales|f\_\_Victivallaceae|g\_\_GGB6512|s\_\_GGB6512\_SGB9198|t\_\_SGB9198 |
| MAG\_90 | Other | k\_\_Bacteria|p\_\_Proteobacteria|c\_\_CFGB2394|o\_\_OFGB2394|f\_\_FGB2394|g\_\_GGB6544|s\_\_GGB6544\_SGB9243|t\_\_SGB9243 |
| MAG\_96 | Family | k\_\_Bacteria|p\_\_Firmicutes|c\_\_Clostridia|o\_\_Clostridiales|f\_\_Clostridiaceae|g\_\_GGB3480|s\_\_GGB3480\_SGB4648|t\_\_SGB4648 |
| MAG\_98 | Other | k\_\_Bacteria|p\_\_Bacteroidetes|c\_\_CFGB668|o\_\_OFGB668|f\_\_FGB668|g\_\_GGB1663|s\_\_GGB1663\_SGB2279|t\_\_SGB2279 |

## Table S14. Significantly prevalent species in Chinese or Indian cohorts (adj p-value <= 0.05). The species highlighted in bold have a significantly higher prevalence in the Indian cohort.

|  |  |  |
| --- | --- | --- |
| **Species** | **China** | **India** |
| ***Bifidobacterium adolescentis*** | **22** | **76** |
| ***Eubacterium rectale*** | **56** | **87** |
| ***Prevotella copri*** | **62** | **88** |
| ***Roseburia faecis*** | **64** | **90** |
| ***Coprococcus eutactus*** | **32** | **63** |
| *Bacteroides cellulosilyticus* | 76 | 6 |
| *Parabacteroides goldsteinii* | 50 | 8 |
| *Bacteroides intestinalis* | 64 | 9 |
| *Butyricimonas virosa* | 76 | 11 |
| *Bacteroides eggerthii* | 62 | 11 |
| *Bacteroides finegoldii* | 54 | 11 |
| *Ruminococcus gnavus* | 76 | 14 |
| *Blautia glucerasea* | 54 | 15 |
| *Bacteroides nordii* | 70 | 18 |
| *Alistipes indistinctus* | 50 | 22 |
| *Flavonifractor plautii* | 78 | 24 |
| *Alistipes onderdonkii* | 54 | 26 |
| *Eubacterium ventriosum* | 62 | 27 |
| *Eubacterium ramulus* | 72 | 28 |
| *Romboutsia timonensis* | 84 | 28 |
| *Bacteroides stercoris* | 82 | 32 |
| *Anaerostipes hadrus* | 96 | 35 |
| *Bilophila wadsworthia* | 84 | 37 |
| *Blautia obeum* | 82 | 40 |
| *Fusicatenibacter saccharivorans* | 78 | 46 |
| *Bacteroides thetaiotaomicron* | 96 | 52 |
| *Ruminococcus torques* | 90 | 53 |
| *Bacteroides caccae* | 92 | 55 |
| *Bacteroides xylanisolvens* | 96 | 55 |
| *Blautia wexlerae* | 96 | 56 |
| *Bacteroides uniformis* | 100 | 65 |
| *Parabacteroides distasonis* | 98 | 70 |
| *Bacteroides ovatus* | 100 | 72 |

## Table S15. Significantly abundant species in Indian cohorts as compared to the Chinese cohort.

|  |  |
| --- | --- |
| **Species** | **log2FoldChange** |
| *Bacteroides eggerthii* | -17.1 |
| *Bacteroides intestinalis* | -8.0 |
| *Ruminococcus gnavus* | -5.1 |
| *Bacteroides cellulosilyticus* | -4.6 |
| *Parabacteroides goldsteinii* | -3.9 |
| *Bacteroides finegoldii* | -3.8 |
| *Butyricimonas virosa* | -3.7 |
| *Bacteroides thetaiotaomicron* | -3.5 |
| *Eubacterium ventriosum* | -2.7 |
| *Bacteroides stercoris* | -2.7 |
| *Bacteroides uniformis* | -2.1 |
| *Anaerostipes hadrus* | -2.0 |
| *Bacteroides xylanisolvens* | -2 |
| *Parabacteroides distasonis* | -1.9 |
| *Escherichia coli* | 1.5 |
| *Dorea longicatena* | 1.6 |
| *Faecalibacterium prausnitzii* | 2.0 |
| *Roseburia faecis* | 2.4 |
| *Ruminococcaceae bacterium* | 2.7 |
| *Eubacterium rectale* | 2.8 |
| *Klebsiella pneumoniae* | 2.8 |
| *Prevotella copri* | 4.3 |
| *Bifidobacterium longum* | 4.6 |
| *Collinsella aerofaciens* | 5.1 |
| *Bifidobacterium adolescentis* | 8.9 |

## Table S16. Differentially **abundant** B-vitamin pathways between Chinese and Indian cohorts (reference China).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **feature** | **metadata** | **value** | **coefficient** | **stderr** | **N** | **pval** | **qval** |
| Riboflavin | Nationality | Indian | -0.67 | 0.08 | 191 | 0 | 0 |
| Thiamine | Nationality | Indian | -0.43 | 0.05 | 191 | 0 | 0 |
| Pyridoxine | Nationality | Indian | -0.78 | 0.16 | 191 | 0 | 0 |
| Biotin | Nationality | Indian | -0.61 | 0.12 | 191 | 0 | 0 |
| Cobalamin | Nationality | Indian | -0.57 | 0.15 | 191 | 0 | 0 |
| Niacin | Gender | Male | 0.21 | 0.07 | 191 | 0 | 0.02 |
| Folate | Nationality | Indian | 0.67 | 0.22 | 191 | 0 | 0.02 |
| Niacin | age | Young\_adult | 0.24 | 0.11 | 191 | 0.03 | 0.11 |
| Pyridoxine | Gender | Male | -0.32 | 0.14 | 191 | 0.02 | 0.11 |

## Table S17. Government of India’s Comprehensive National Nutrition Survey (CNNS-2019) data for two vitamins in different age groups.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Vitamins** | **Cobalamin deficients (in %)** | | | **Folate deficients (in %)** | | |
|  | **Age group (years)** | **1-4** | **5-9** | **10-19** | **1-4** | **5-9** | **10-19** |
| **Residence** | **Urban** | 14.4 | 15.6 | 30.3 | 24 | 31.8 | 42.1 |
| **Rural** | 13.6 | 17.7 | 31.1 | 23.1 | 27 | 34.9 |
| **Type of diet** | **Veg** | 15.8 | 22.1 | 37.1 | 18.4 | 22.9 | 30.1 |
| **Veg+egg** | 13.5 | 14.9 | 33.4 | 30.4 | 35.1 | 47.7 |
| **Non-veg** | 11.4 | 10.2 | 21.7 | 28.4 | 34.6 | 43.5 |