

Related to Figure 7. 129 mice were administered heat-killed or live *Bacteroides* spp. 7 days prior to infection with *S. Typhimurium*. Mice were sacrificed at 2 days post-infection for flow cytometry analysis. Single-cell suspensions were stained with antibodies. Cells were gated on forward and side scatter to exclude debris and select for single cells. A hierarchical gating strategy was used on live cells to identify B cells, T cells, NK cells, dendritic cells, mononucleocytes, and neutrophils as depicted.

## Supplemental Tables

**Table S1. Bacteroidales spp. identified as predictive features of B6N microbiotas by supervised learning analyses.** Related to Figure 3. Analysis metrics include mean decrease in accuracy of predictive algorithm when each taxonomic group is removed from analysis and rank of predictive power. F=family, G=genus, S=species.

Taxonomy	FMT experiment		Cohousing experiment	
	Mean decrease in accuracy	Rank of predictive power	Mean decrease in accuracy	Rank of predictive power
<i>Bacteroides</i> (G)	0.051	2	0.048	2
<i>B. acidifaciens</i> (S)	0.061	1	0.032	7
<i>B. ovatus</i> (S)	0.022	6	0.012	11
<i>B. uniformis</i> (S)	0.0052	14	0.0074	13
<i>Prevotella</i> (G)	0.0075	10	0.045	4
Rikenellaceae (F)	$1.6 \times 10^{-5}$	61	0.048	1
S24-7 (F)	0.0002	41	$4.0 \times 10^{-5}$	56
<i>Odoribacter</i> (G)	0.0003	39	0.047	3

**Table S2: Primers utilized in this study.** Related to STAR Methods.

Mouse <i>Nramp1</i> F primer	5'-AAGTGACATCTCGCCATAGGTGCC-3'
Mouse <i>Nramp1</i> R primer	5'- TTCTCTCACCATAGTTATCCAAG AAG-3'
Mouse <i>Nramp1</i> sequencing primer	5'-CCCCCATCTATGTTATCACCC-3'
Mouse <i>GAPDH</i> qPCR F primer	5'-ACAGTCCATGCCATCACTGCC-3'
Mouse <i>GAPDH</i> qPCR R primer	5'-GCCTGCTTCACCACCTTCTTG-3'
Mouse pan- <i>Defa</i> qPCR F primer	5'-GGTGATCATCAGACCCCAGCATCAGT-3'
Mouse pan- <i>Defa</i> qPCR R primer	5'-AAGAGACTAAACTGAGGAGCAGC-3'
Mouse <i>mBD3</i> qPCR F primer	5'-GCTAGGGAGCACTTGTTTGC-3'
Mouse <i>mBD3</i> qPCR R primer	5'-TTGTTTGAGGAAAGGAGGCA-3'
Mouse <i>Ang4</i> qPCR F primer	5'-CTCTGGCTCAGAATCTAAGGTACGA -3'

Mouse <i>Ang4</i> qPCR R primer	5'-GAAATCTTTAAAGGCTCGGTACCC -3'
Mouse <i>RegIIIβ</i> qPCR F primer	5'-CTGCCTTAGACCGTGCTTTC-3'
Mouse <i>RegIIIβ</i> qPCR R primer	5'-ATAGGGCAACTTCACCTCAC-3'
Mouse <i>RegIIIγ</i> qPCR F primer	5'-CGTGCCTATGGCTCCTATTGCT-3'
Mouse <i>RegIIIγ</i> qPCR R primer	5'-TTCAGCGCCACTGAGCACAGAC-3'
Mouse TNFα qPCR F primer	5'-GATCGGTCCCCAAAGGGATG-3'
Mouse TNFα qPCR R primer	5'-TGGTTTGTGAGTGTGAGGGTC-3'
Mouse IL-6 qPCR F primer	5'-TCCAGTTGCCTTCTTGGGAC-3'
Mouse IL-6 qPCR R primer	5'-AGTCTCCTCTCCGGACTTGT-3'
Mouse IL-1β qPCR F primer	5'-AGCTTCCTTGTGCAAGTGTCT-3'
Mouse IL-1β qPCR R primer	5'-GACAGCCCAGGTCAAAGGTT-3'
Mouse IFNγ qPCR F primer	5'-AGCGGCTGACTGAACTCAGATTGTAG-3'
Mouse IFNγ qPCR R primer	5'-GTCACAGTTTTTCAGCTGTATAGGG-3'
Universal 16S rRNA 63F PCR primer	5'-CAGGCCTAACACATGCAAGTC-3'
Universal 16S rRNA 1387R PCR primer	5'-GCCCGGGAACGTATTCACCG-3'
<i>B. thetaiotamicron</i> pNBU2 insertion site 1 F	5'-TATCCTATTCTTTAGAGCGAC-3'
<i>B. thetaiotamicron</i> pNBU2 insertion site 1 R	5'-GGTGTACCTGGCATTGAAGG-3'
<i>B. thetaiotamicron</i> pNBU2 insertion site 2 F	5'-CCTTTGCACCGCTTTCAACG-3'
<i>B. thetaiotamicron</i> pNBU2 insertion site 2 R	5'-TCAACTAAACATGAGATACTAGC-3'