H.pylori Rhesus Microbiome Analysis

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Data used in analysis

Library

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suppressPackageStartupMessages({
  library(sjPlot)
  library(readxl)
  library(phyloseq)
  library(microbiome)
  library(DESeq2)
  library(qiime2R)
  library(tidyverse)
  library(tidyMicro)
  library(kableExtra)
  library(magrittr)
  library(ggpubr)
  library(microeco)
  library(tidytree)
  library(RColorBrewer)
  library(questionr)
  library(rmarkdown)
  library(stringr)
})
```

ASV counts the taxa table are linked below:

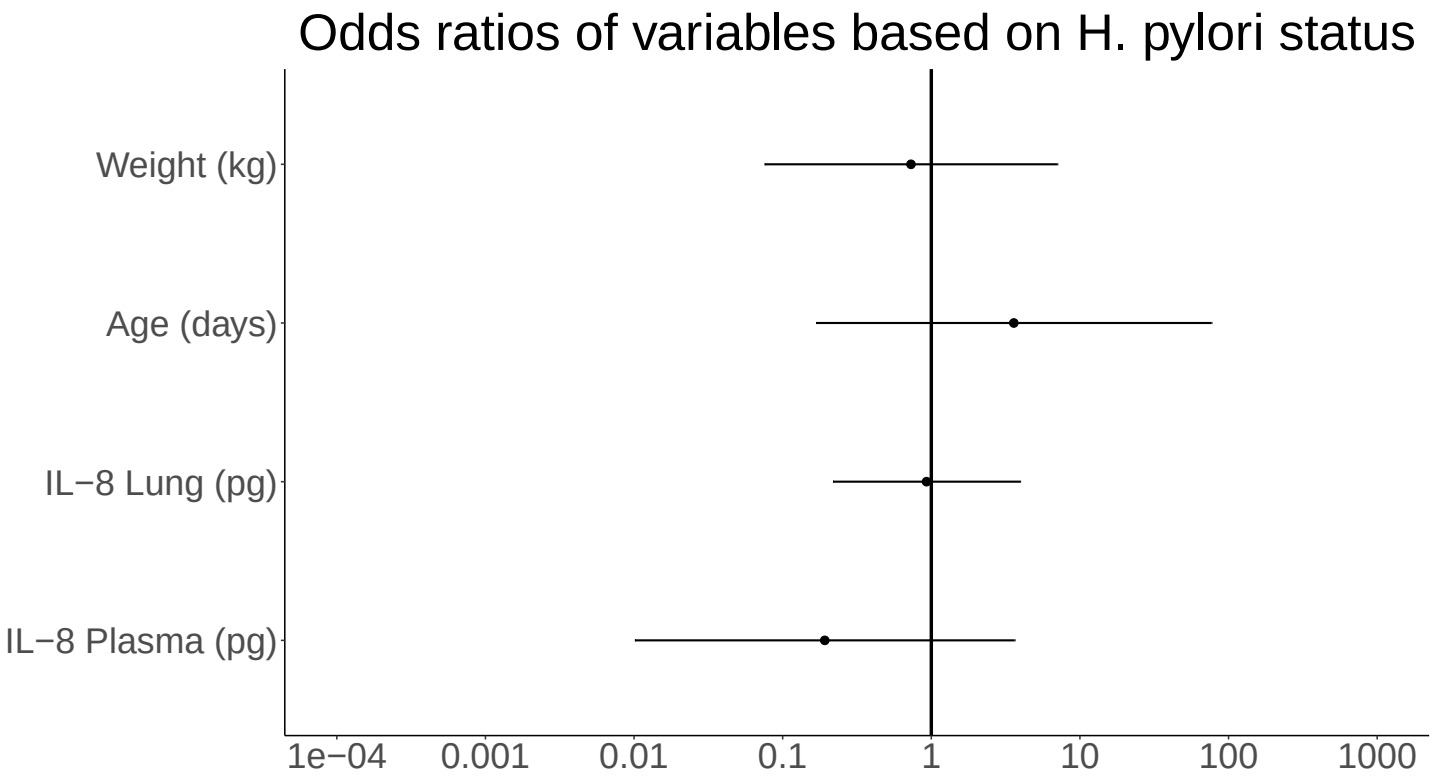
ASV counts

Taxa table

Table 1: H.pylori Metadata

SampleID	Treatment	site	Site_status	sex	log10_cfu.gm	IL8_Lavage	IL8_Plasma
LMiller_00458.BAL	H.pylori_(-)	Lung	H.pylori_(-)_Lung	Female	0.00	NA	463.376
LMiller_00458.Swab	H.pylori_(-)	Oral	H.pylori_(-)_Oral	Female	0.00	NA	463.376
LMiller_00459.BAL	H.pylori_(-)	Lung	H.pylori_(-)_Lung	Female	0.00	NA	258.416
LMiller_00459.Swab	H.pylori_(-)	Oral	H.pylori_(-)_Oral	Female	0.00	NA	258.416
LMiller_00461.BAL	H.pylori_(+)	Lung	H.pylori_(+)_Lung	Female	7.66	NA	704.550
LMiller_00461.Swab	H.pylori_(+)	Oral	H.pylori_(+)_Oral	Female	7.66	NA	704.550
LMiller_00462.BAL	H.pylori_(-)	Lung	H.pylori_(-)_Lung	Female	0.00	19.104	1075.626
LMiller_00462.Swab	H.pylori_(-)	Oral	H.pylori_(-)_Oral	Female	0.00	19.104	1075.626
LMiller_00463.BAL	H.pylori_(-)	Lung	H.pylori_(-)_Lung	Female	0.00	11.590	423.590
LMiller_00466.BAL	H.pylori_(+)	Lung	H.pylori_(+)_Lung	Female	3.81	11.201	642.148
LMiller_00466.Swab	H.pylori_(+)	Oral	H.pylori_(+)_Oral	Female	3.81	11.201	642.148
LMiller_00467.BAL	H.pylori_(+)	Lung	H.pylori_(+)_Lung	Female	6.09	15.511	425.782
LMiller_00467.Swab	H.pylori_(+)	Oral	H.pylori_(+)_Oral	Female	6.09	15.511	425.782
LMiller_00468.BAL	H.pylori_(-)	Lung	H.pylori_(-)_Lung	Female	0.00	15.511	660.911
LMiller_00468.Swab	H.pylori_(-)	Oral	H.pylori_(-)_Oral	Female	0.00	15.511	660.911
LMiller_00469.BAL	H.pylori_(+)	Lung	H.pylori_(+)_Lung	Female	6.38	NA	1279.789
LMiller_00469.Swab	H.pylori_(+)	Oral	H.pylori_(+)_Oral	Female	6.38	NA	1279.789
LMiller_00473.BAL	H.pylori_(-)	Lung	H.pylori_(-)_Lung	Female	0.00	20.100	608.508
LMiller_00473.Swab	H.pylori_(-)	Oral	H.pylori_(-)_Oral	Female	0.00	20.100	608.508
LMiller_00474.BAL	H.pylori_(-)	Lung	H.pylori_(-)_Lung	Female	0.00	44.699	443.989
LMiller_00476.BAL	H.pylori_(+)	Lung	H.pylori_(+)_Lung	Female	5.48	NA	476.431
LMiller_00476.Swab	H.pylori_(+)	Oral	H.pylori_(+)_Oral	Female	5.48	NA	476.431
LMiller_00477.BAL	H.pylori_(+)	Lung	H.pylori_(+)_Lung	Female	5.81	NA	715.056
LMiller_00477.Swab	H.pylori_(+)	Oral	H.pylori_(+)_Oral	Female	5.81	NA	715.056
LMiller_00481.BAL	H.pylori_(-)	Lung	H.pylori_(-)_Lung	Female	0.00	17.622	NA
LMiller_00481.Swab	H.pylori_(-)	Oral	H.pylori_(-)_Oral	Female	0.00	17.622	NA

Odds ratios of variables based on H. pylori status



	OR	2.5 %	97.5 %	p
(Intercept)	0.018	0.000	110.146	0.410
‘Weight (kg)‘	0.243	0.000	7254.525	0.786
‘Age (days)‘	1.042	0.955	1.177	0.413
‘IL-8 Lung (pg)‘	0.993	0.852	1.158	0.921
‘IL-8 Plasma (pg)‘	0.996	0.985	1.001	0.271

Sequenced animal IL8 to H. pylori load correlations

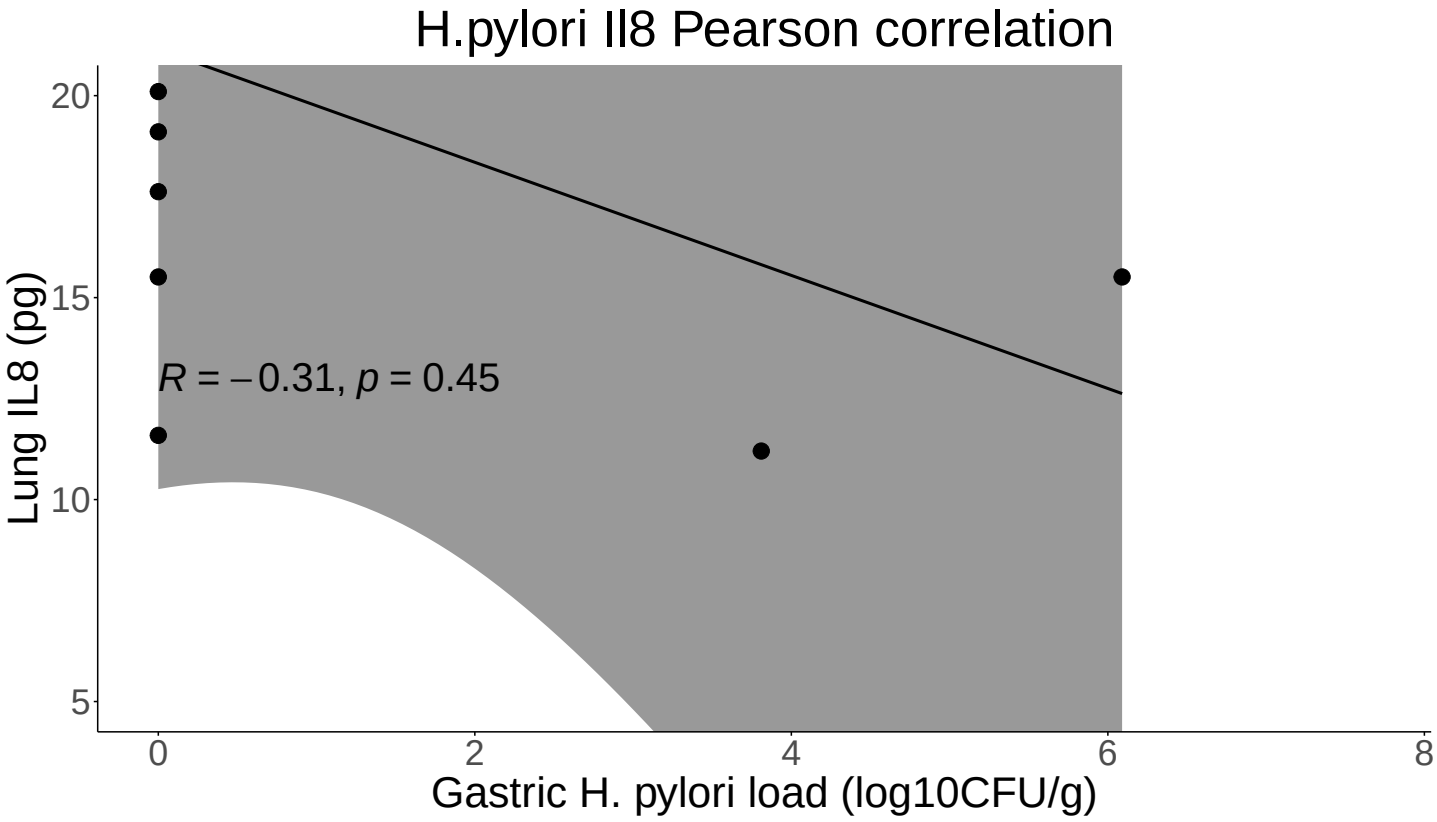


Figure 1: This plot only includes animals that had material sequenced and not all 25 animals from the study

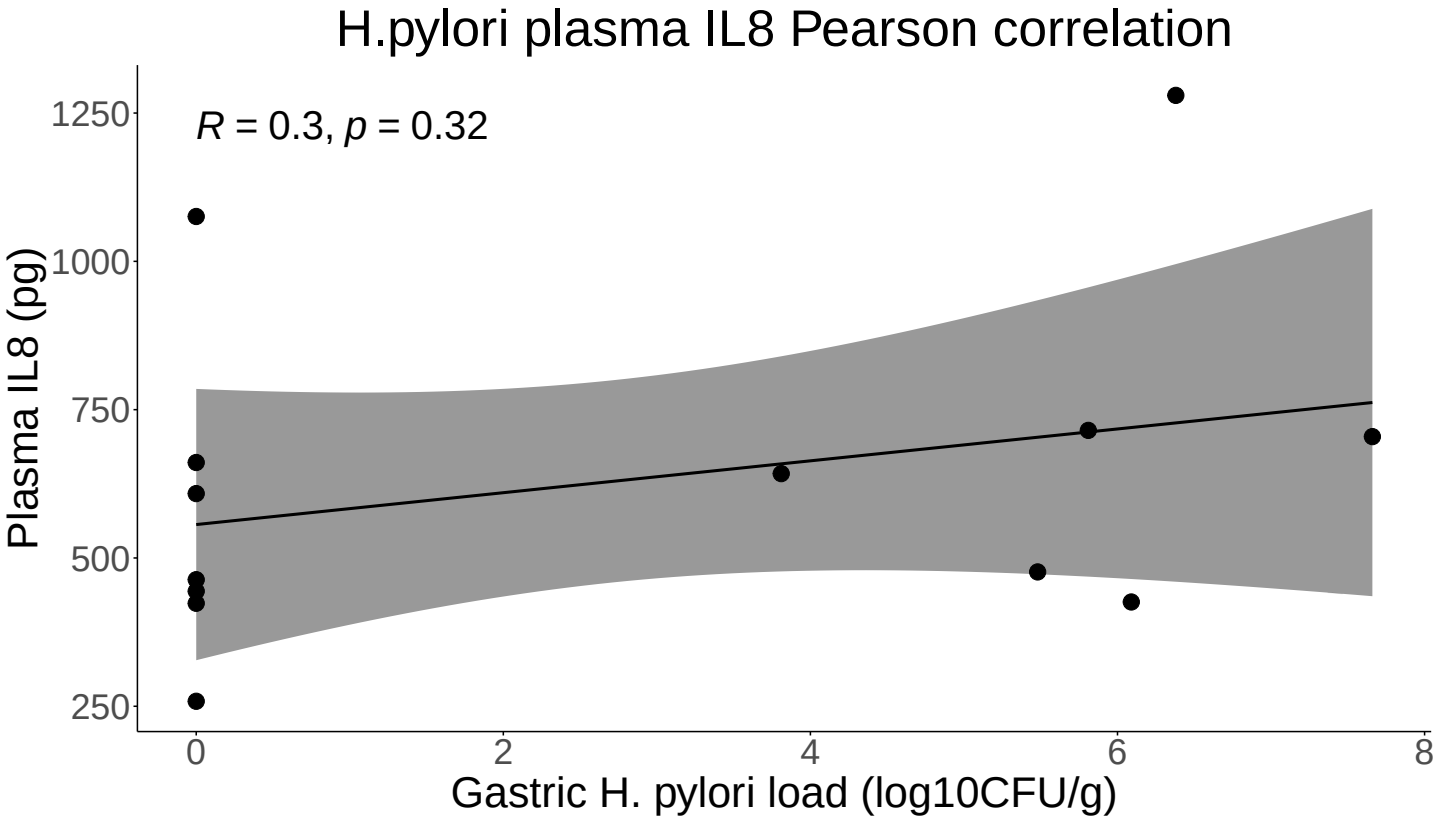
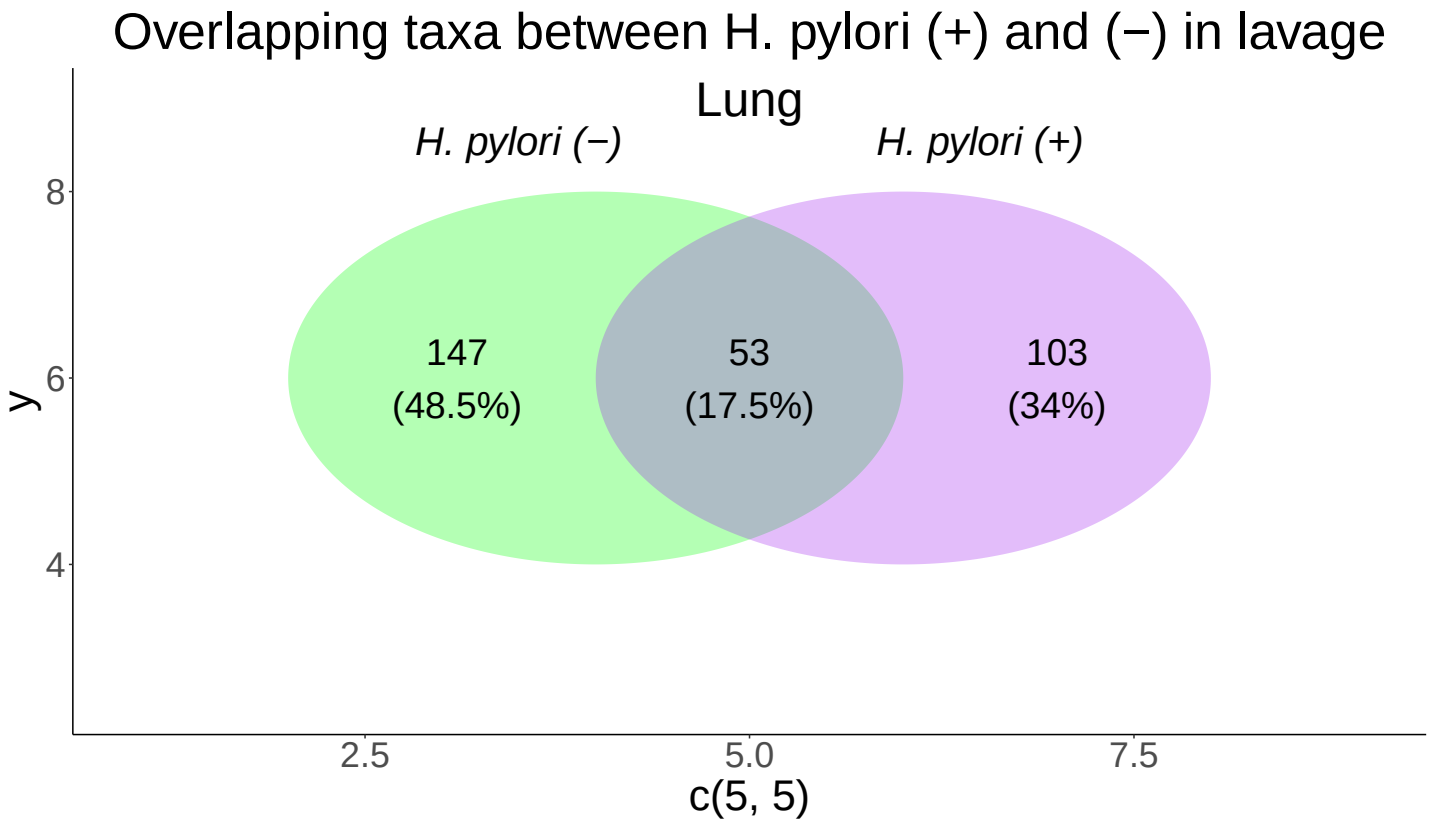


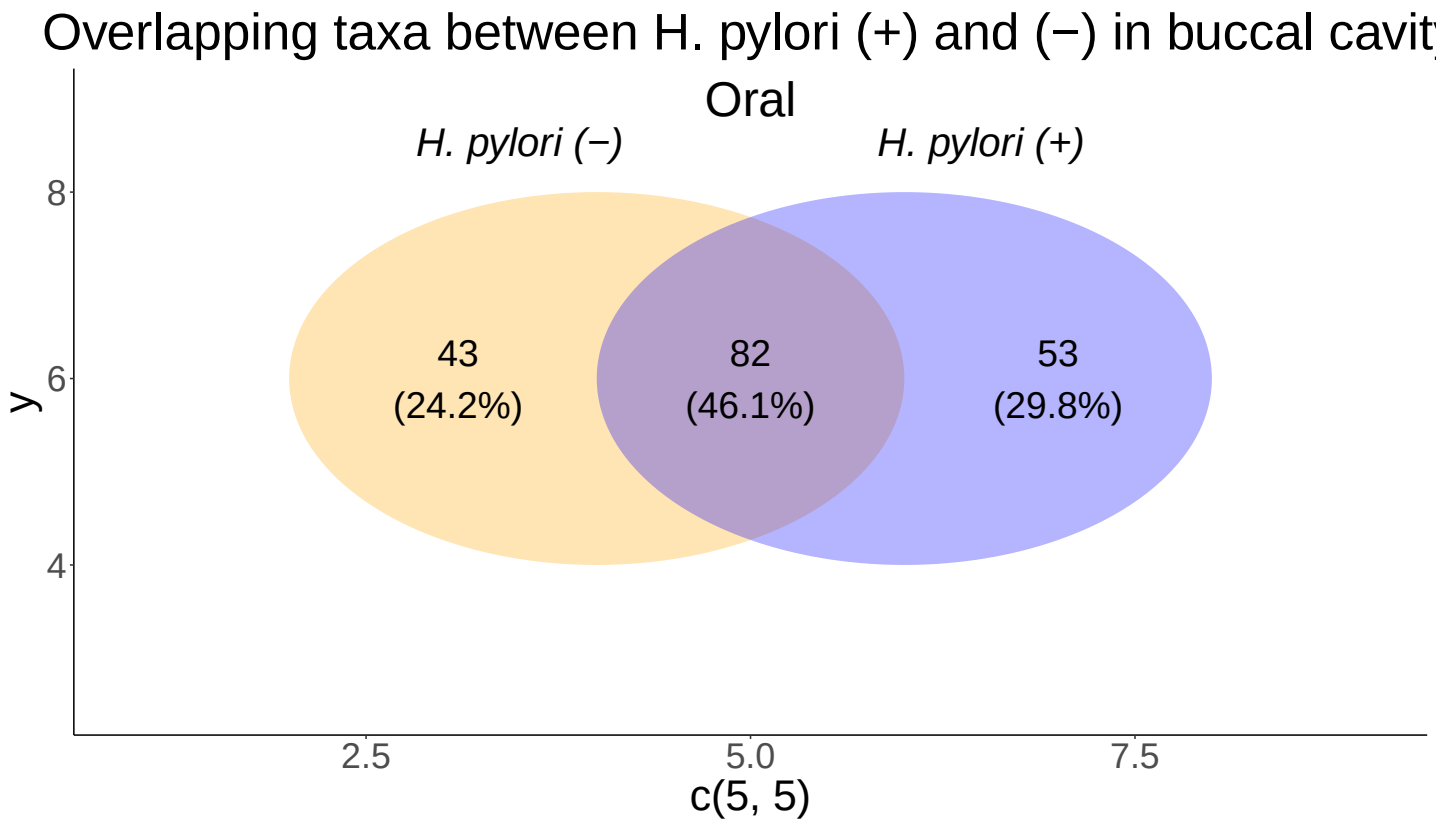
Figure 2: This plot only includes animals that had material sequenced and not all 25 animals from the study

Overlapping Taxa Between Sites and H. pylori Status

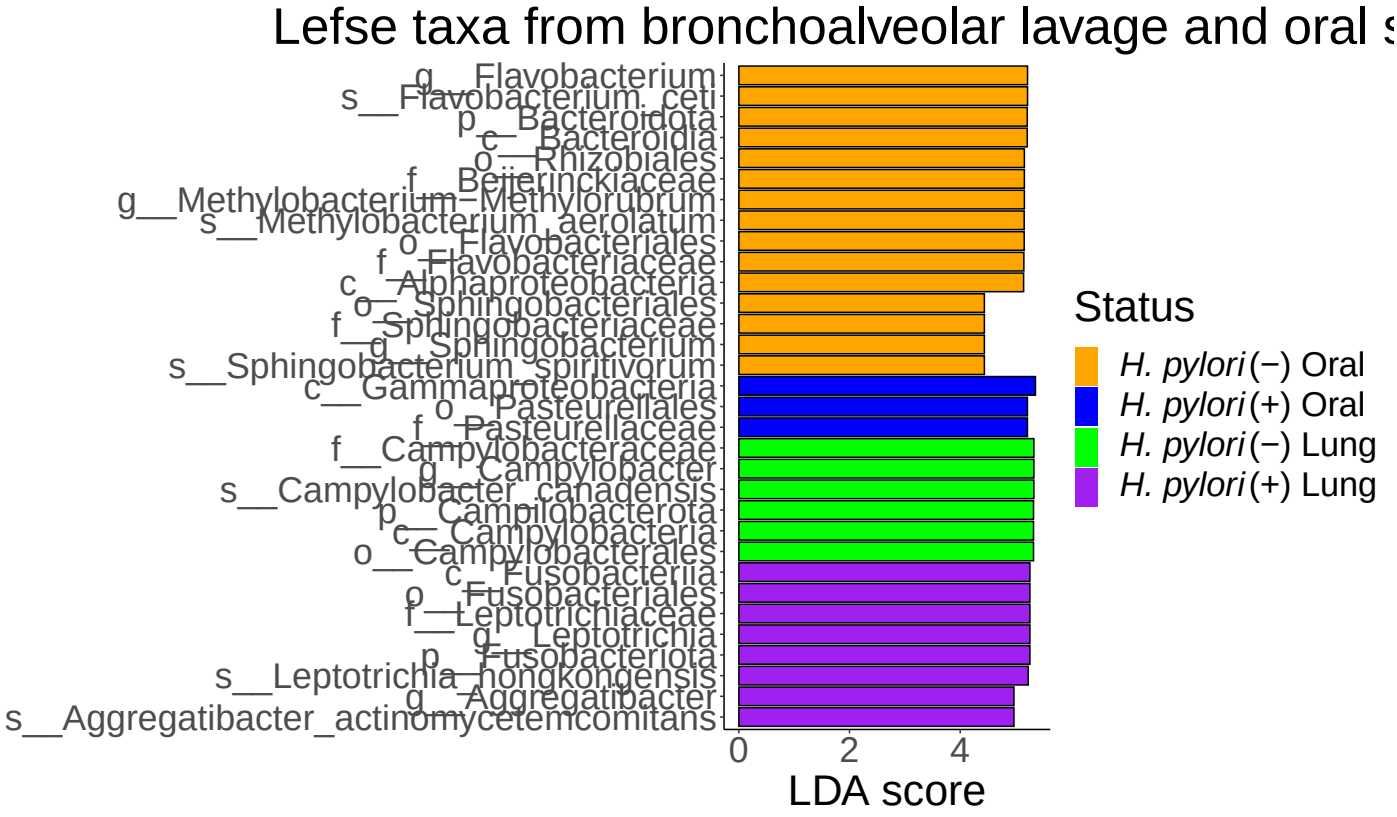
Lavage overlapping taxa



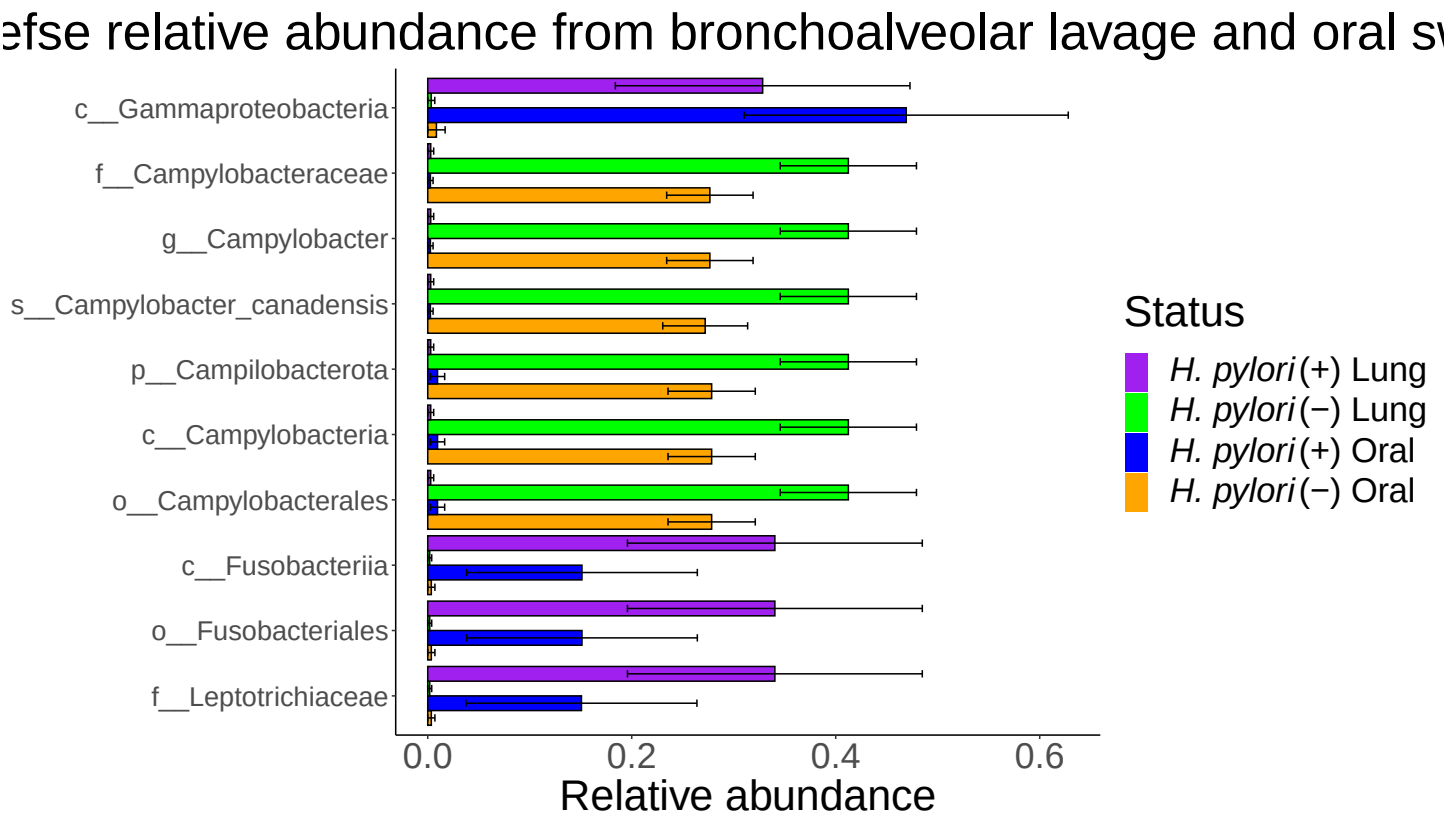
Buccal overlapping taxa



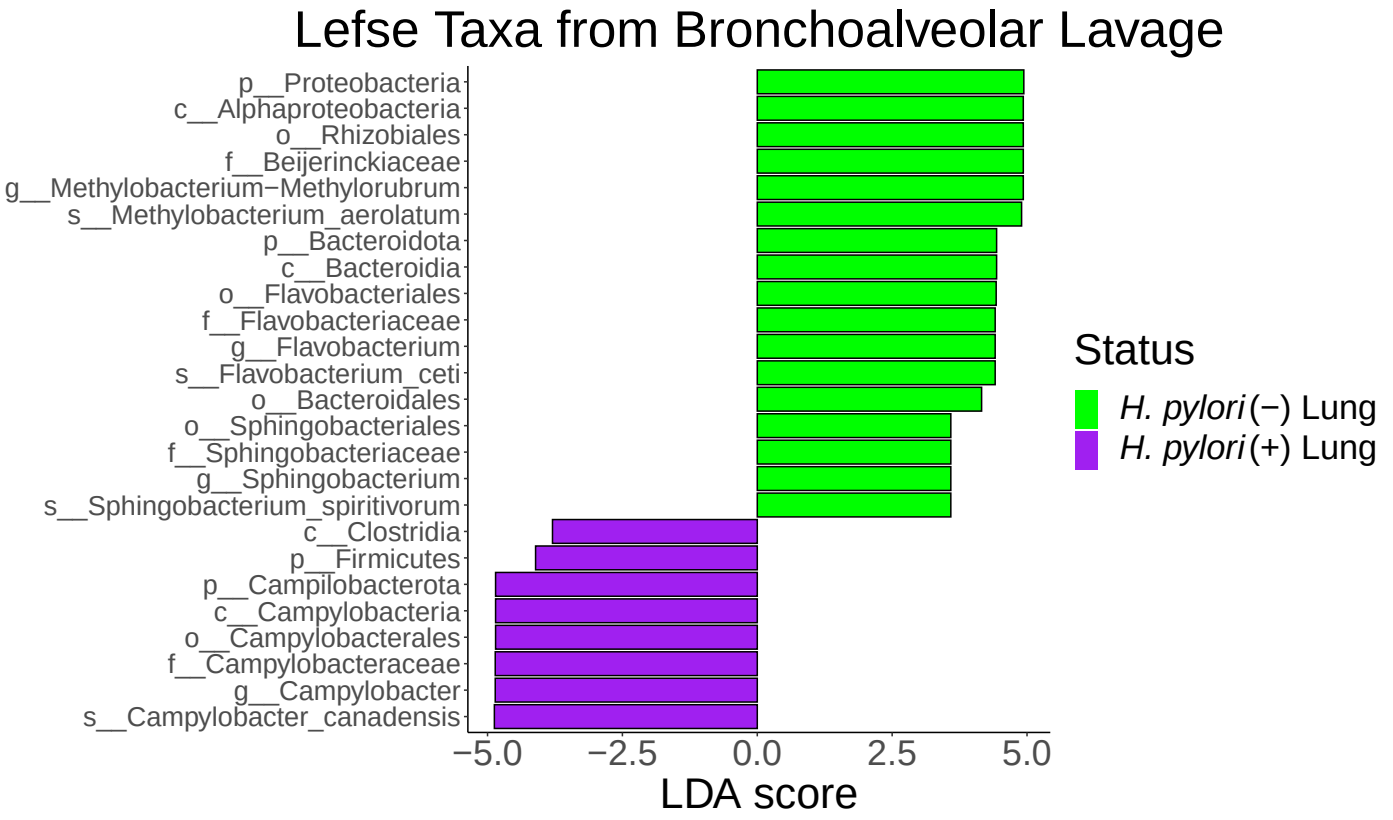
Lefse analysis and differential abundance for both sites



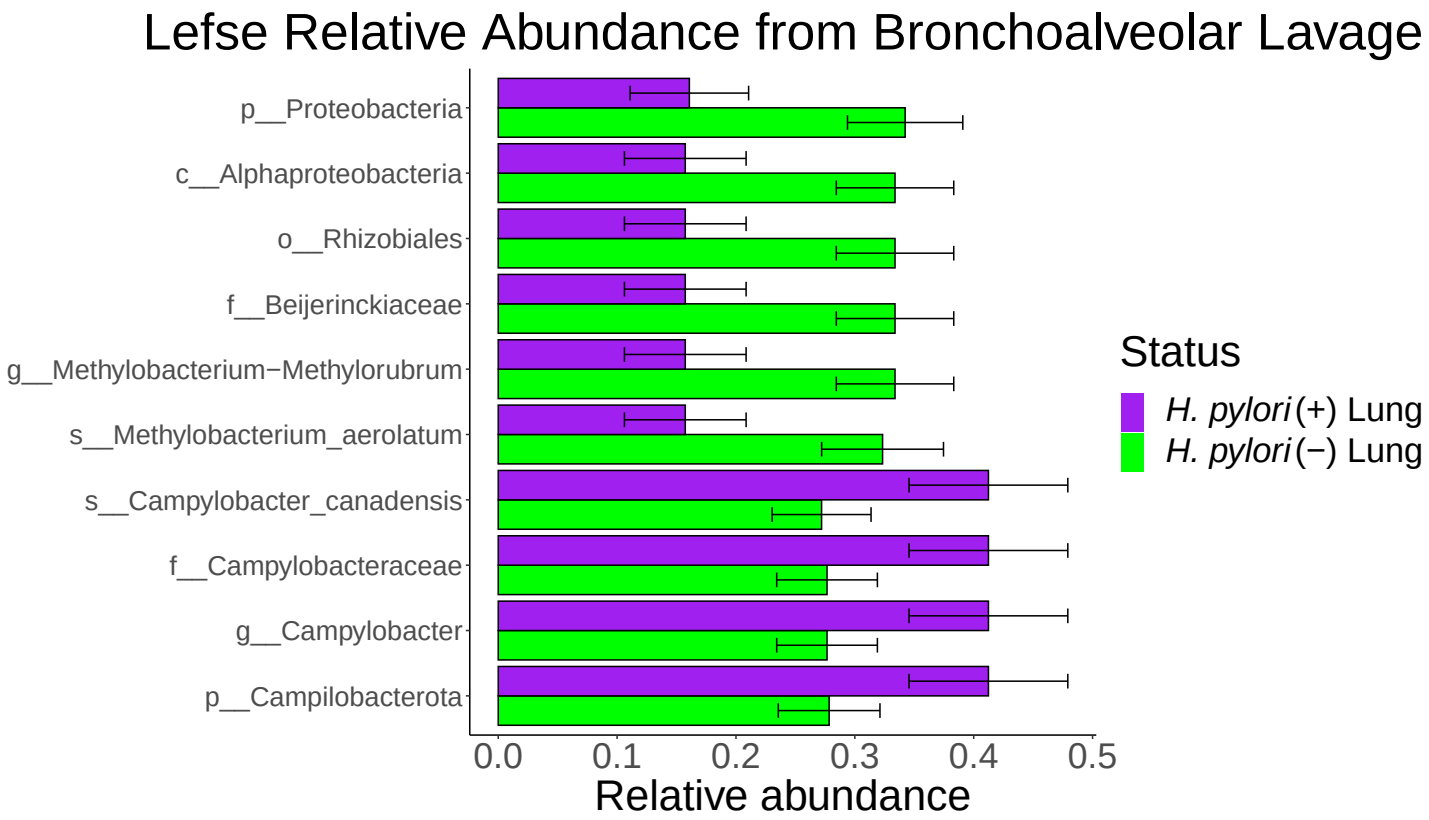
Relative abundance of differential taxa



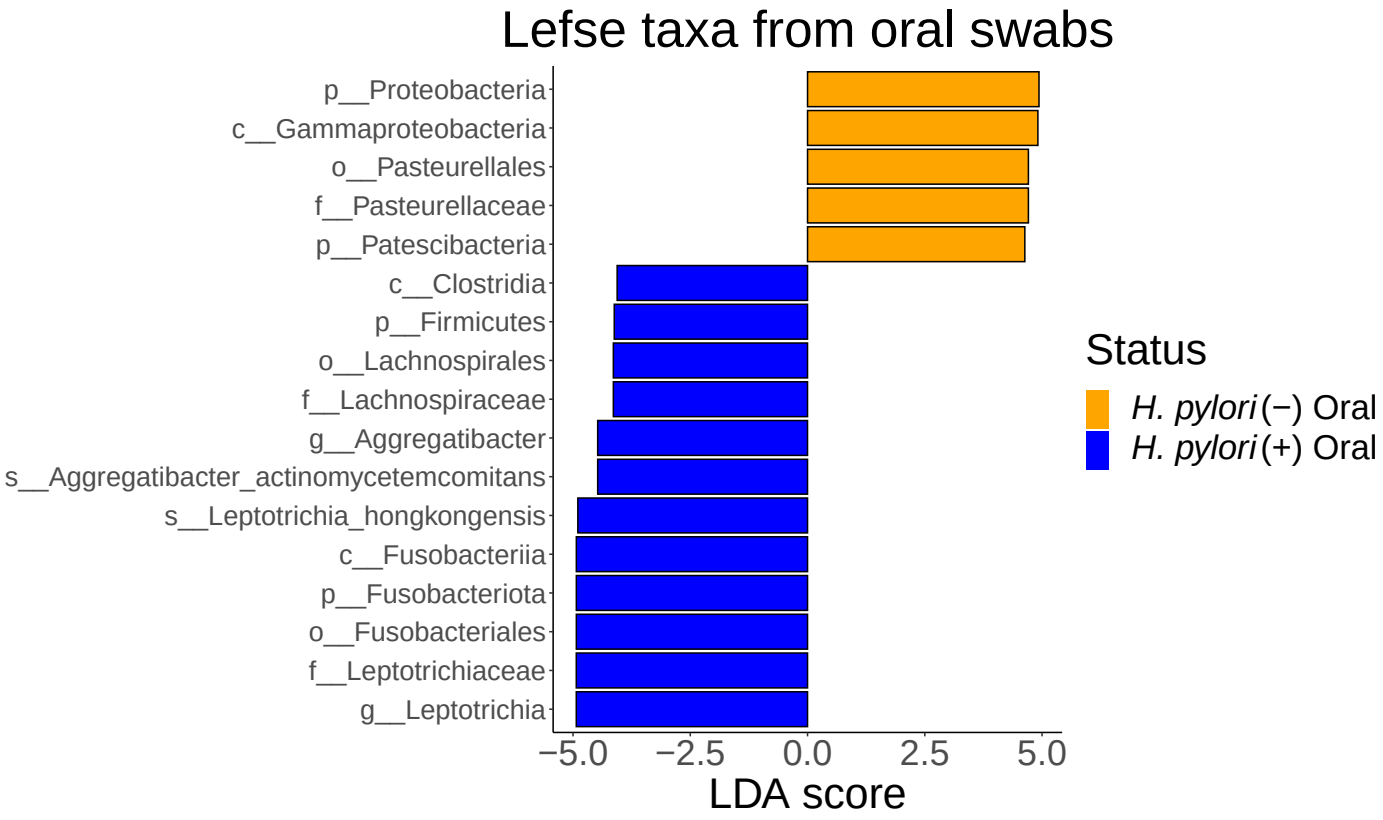
Lefse and differential abundance for bronchoalveolar lavage



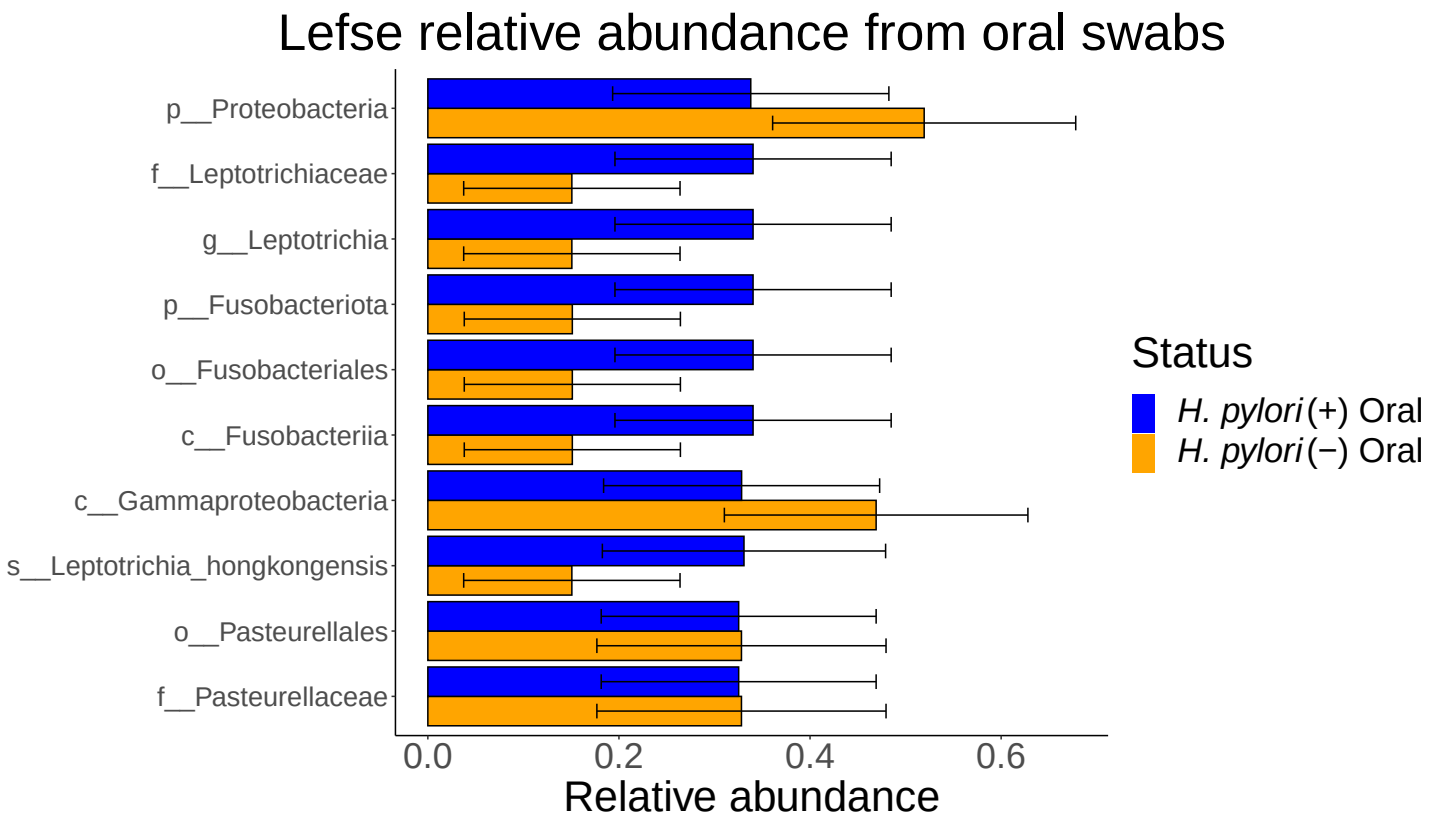
Relative abundance of differential taxa



Lefse and differential abundance for oral swabs



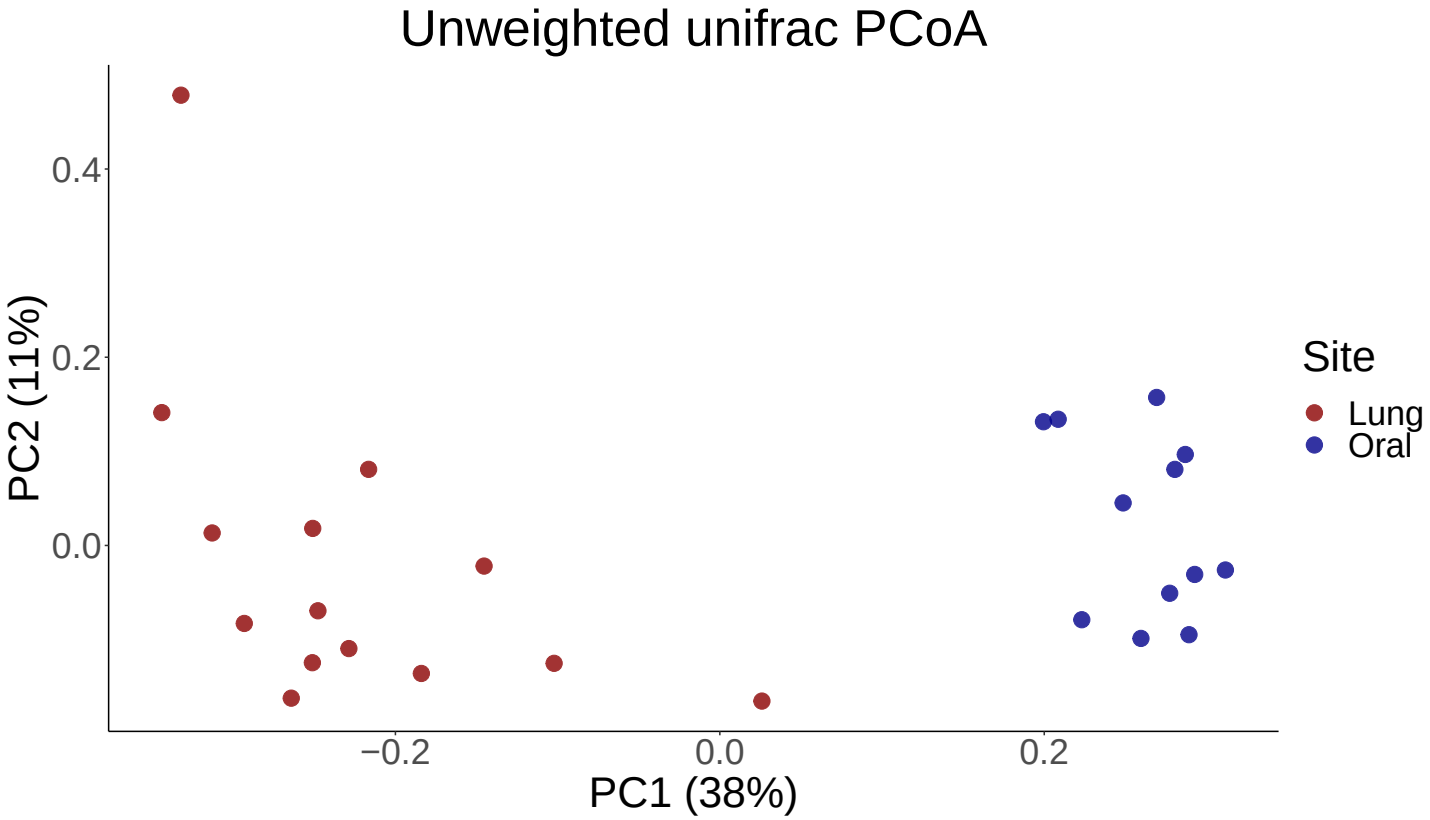
Relative abundance of differential taxa

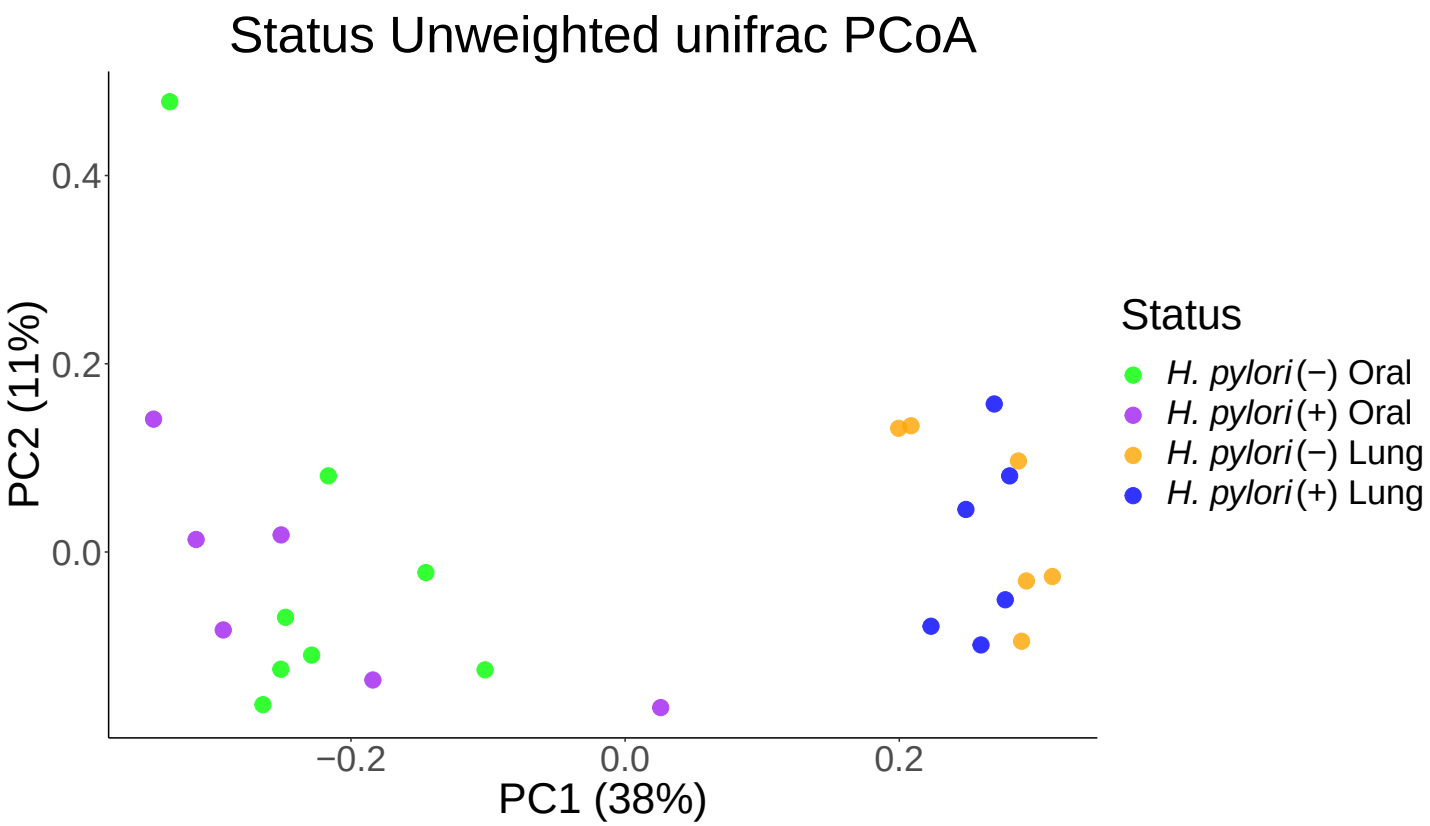


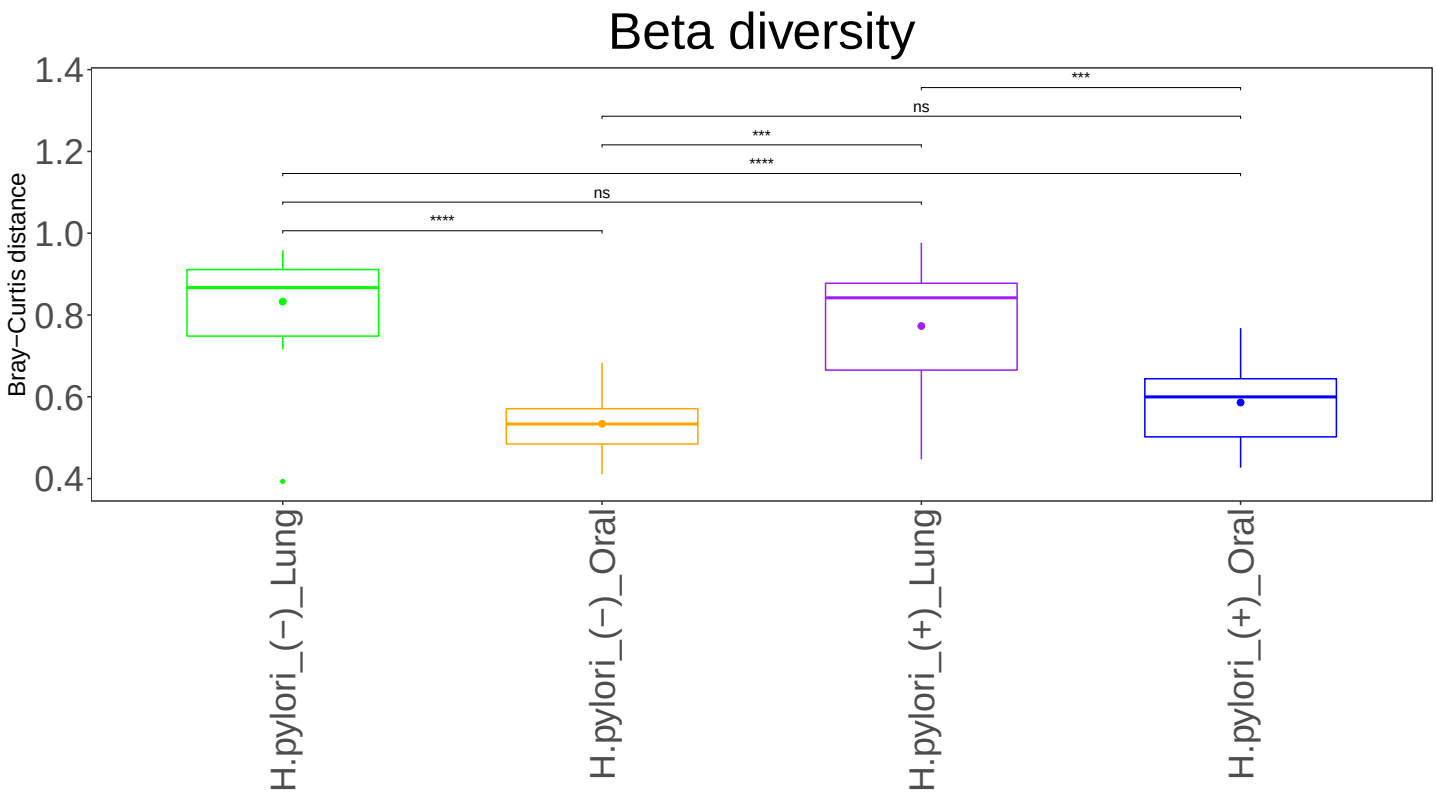
Beta diversity

Unweighted unifrac PCoA plots

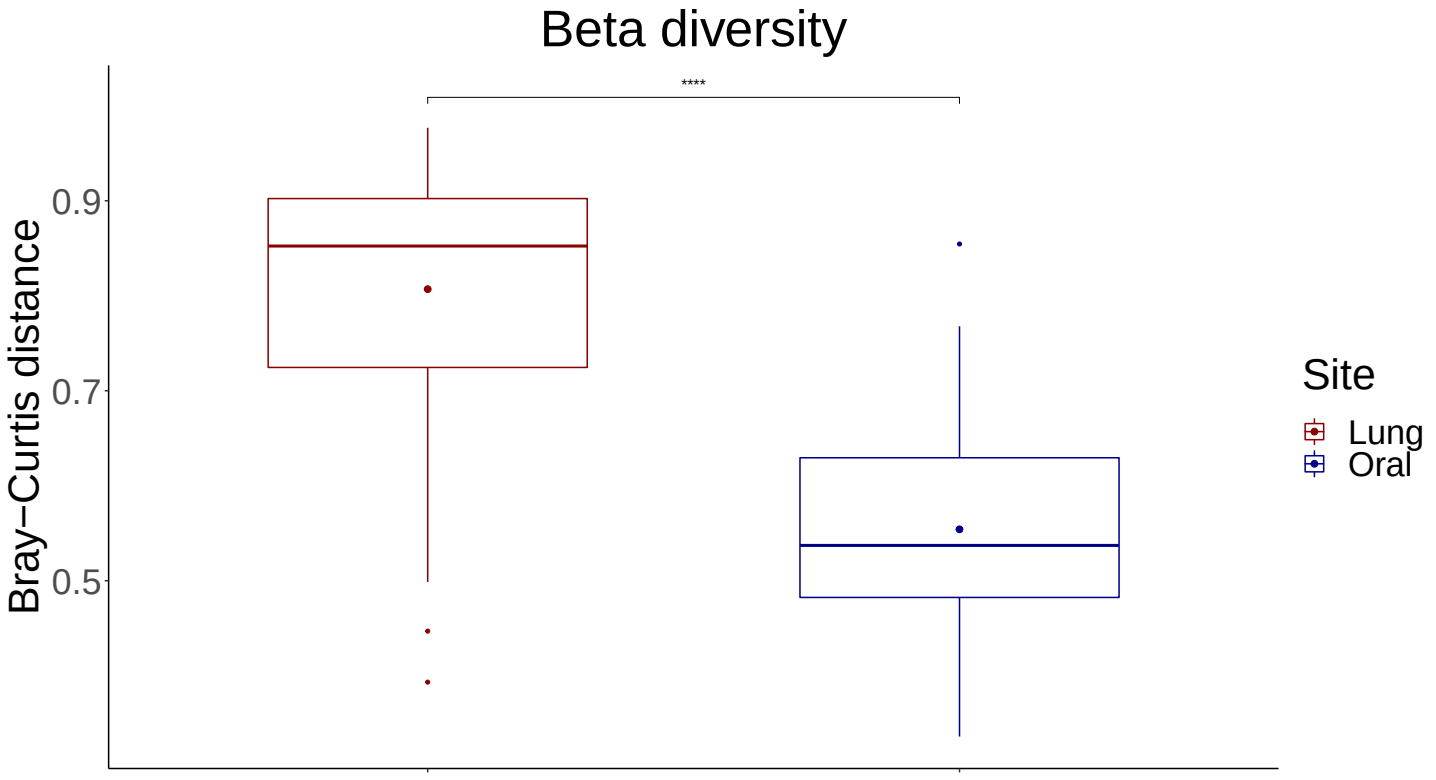
```
##        PC1       PC2        PC3        PC4        PC5        PC6        PC7
## 1 0.38311 0.1122317 0.08255574 0.05624649 0.04518453 0.04178459 0.03697168
##           PC8        PC9       PC10       PC11       PC12       PC13       PC14
## 1 0.03441675 0.0305229 0.0292508 0.02395872 0.0227312 0.01881898 0.01538496
##         PC15       PC16       PC17        PC18        PC19        PC20
## 1 0.0140825 0.01226748 0.01155323 0.008776171 0.007488221 0.004824027
##           PC21        PC22        PC23 PC24 PC25 PC26
## 1 0.003528799 0.002630896 0.001679594    0    0    0
```


Unweighted unifrac PCoA
PC2 (11%)
0.4
0.2
0.0
−0.2
0.0
0.2
PC1 (38%)
Site
Lung
Oral


Status Unweighted unifrac PCoA
PC2 (11%)
0.4
0.2
0.0
−0.2
0.0
0.2
PC1 (38%)
Status
H. pylori (−) Oral
H. pylori (+) Oral
H. pylori (−) Lung
H. pylori (+) Lung

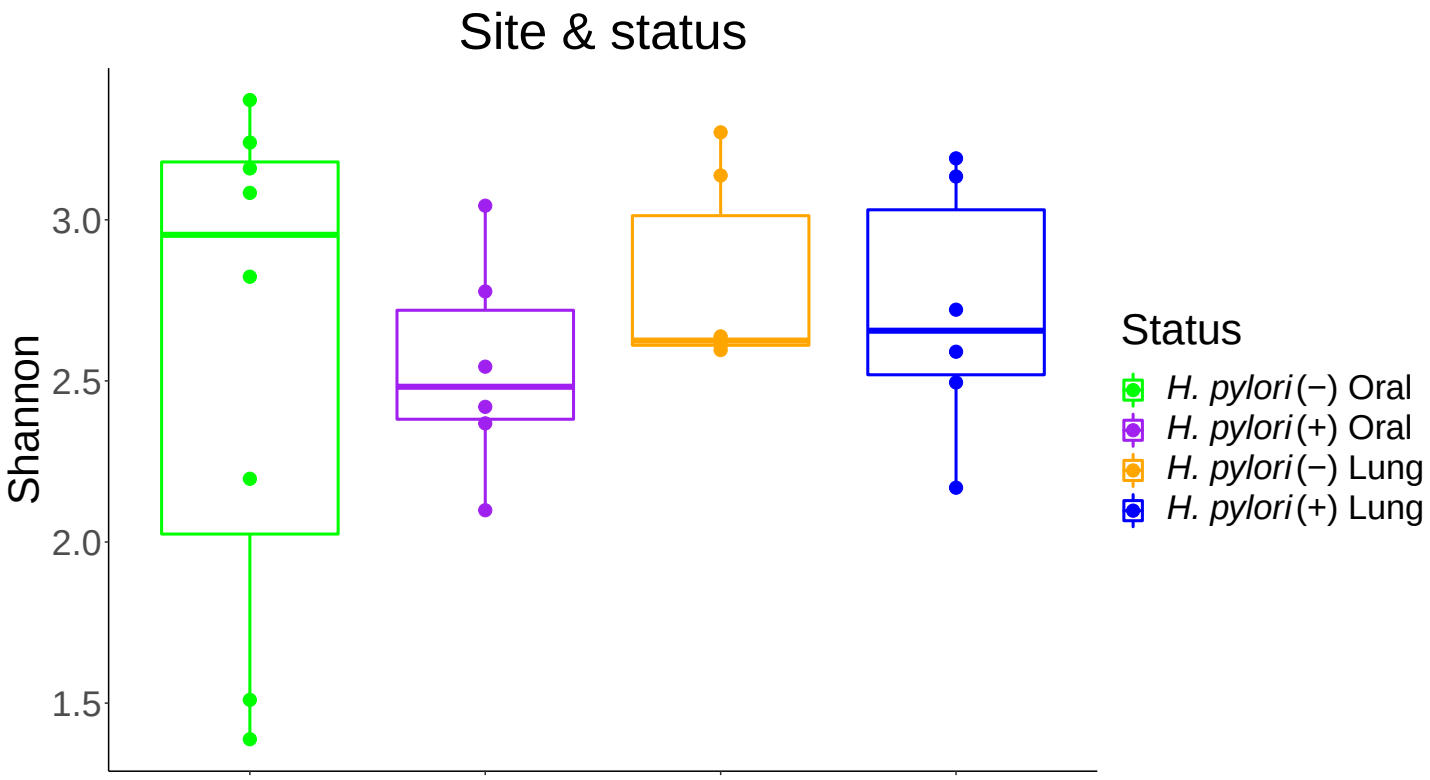

Beta diversity
Bray−Curtis distance
1.4
1.2
1.0
0.8
0.6
0.4
***
ns
***
****
ns
****
H.pylori_(−)_Lung
H.pylori_(−)_Oral
H.pylori_(+)_Lung
H.pylori_(+)_Oral

Bray-Curtis


Beta diversity
****
Bray−Curtis distance
0.9
0.7
0.5
Site
Lung
Oral

Alpha Diversity

Shannon index by site and H. pylori status



Shannon index by site only

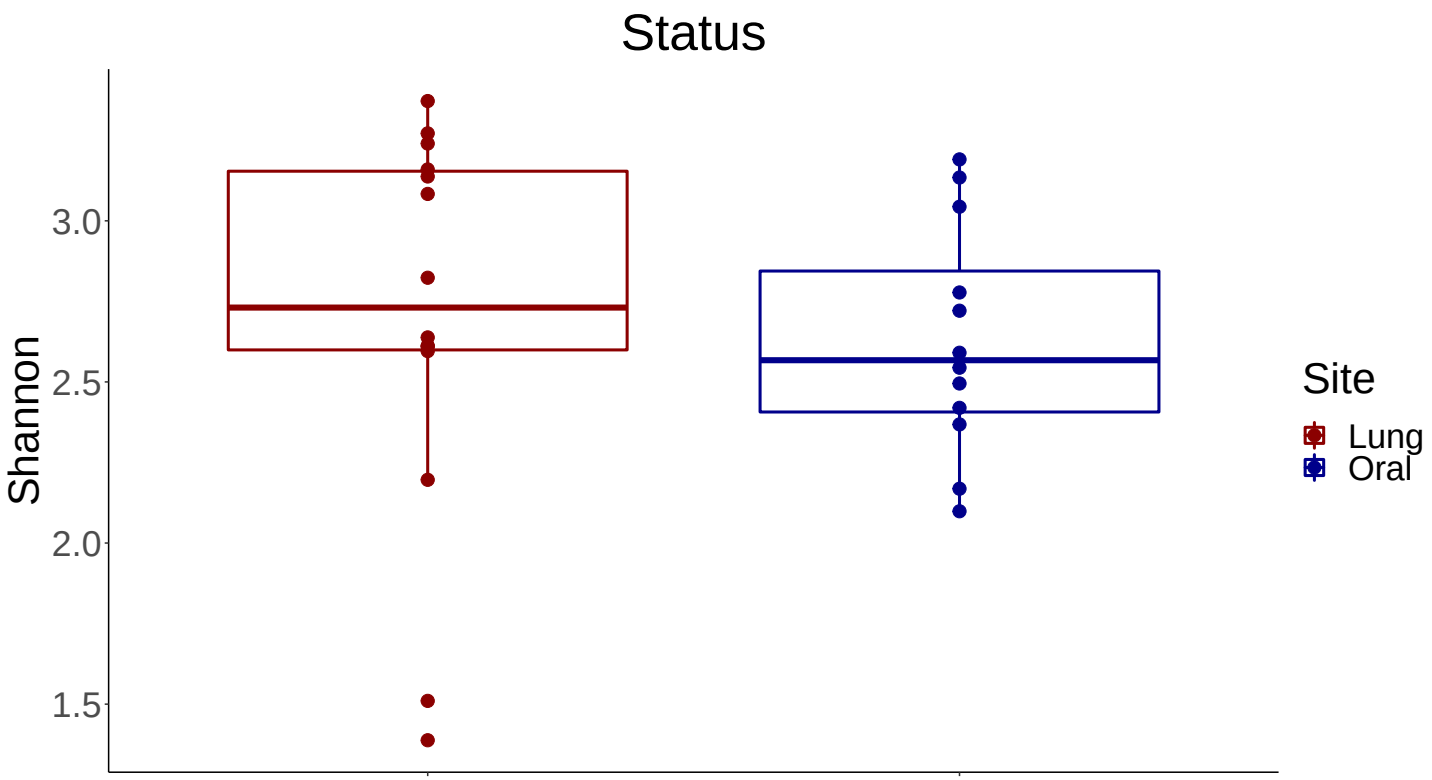
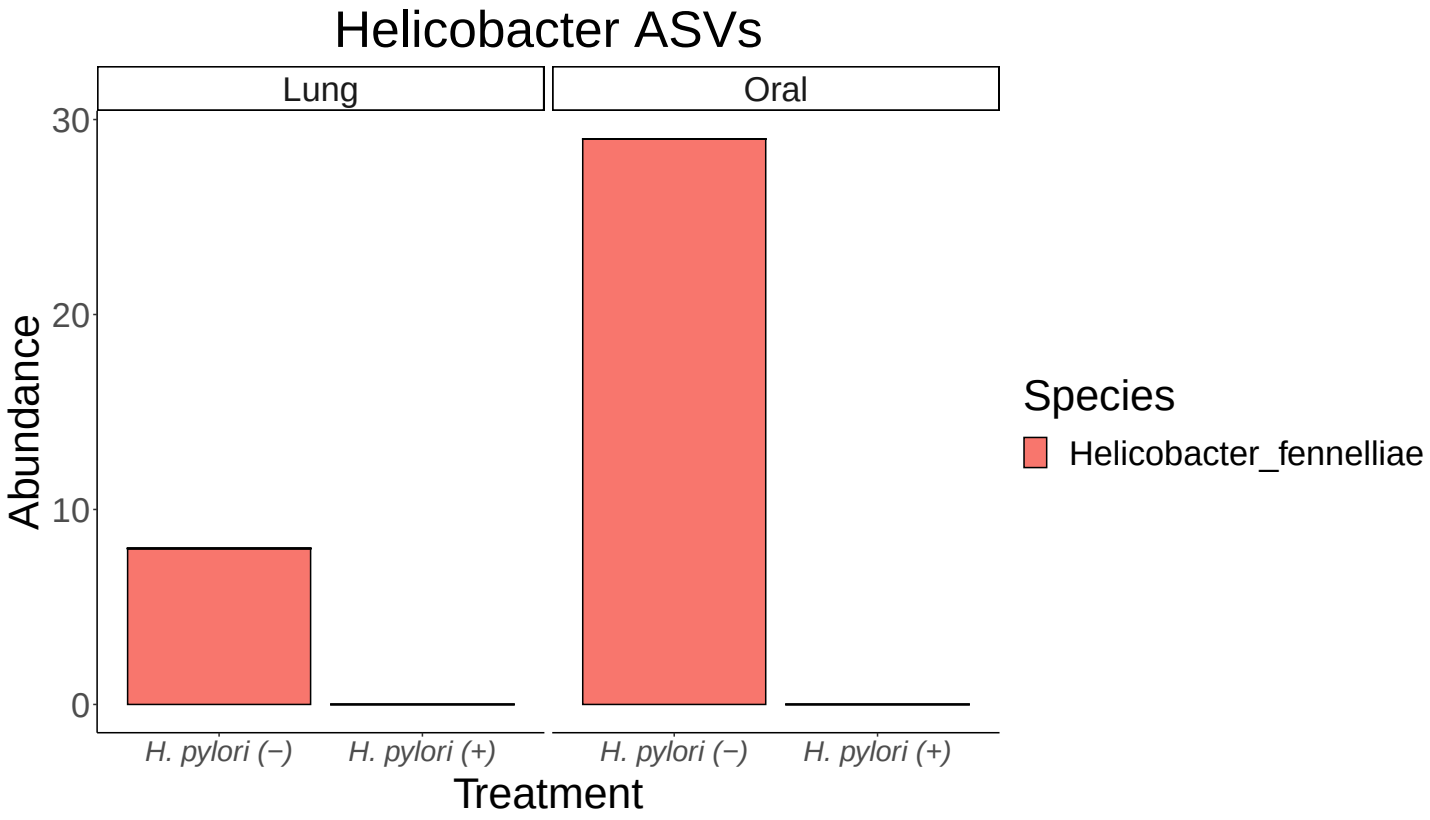


Table 2: All alpha diversity measurees

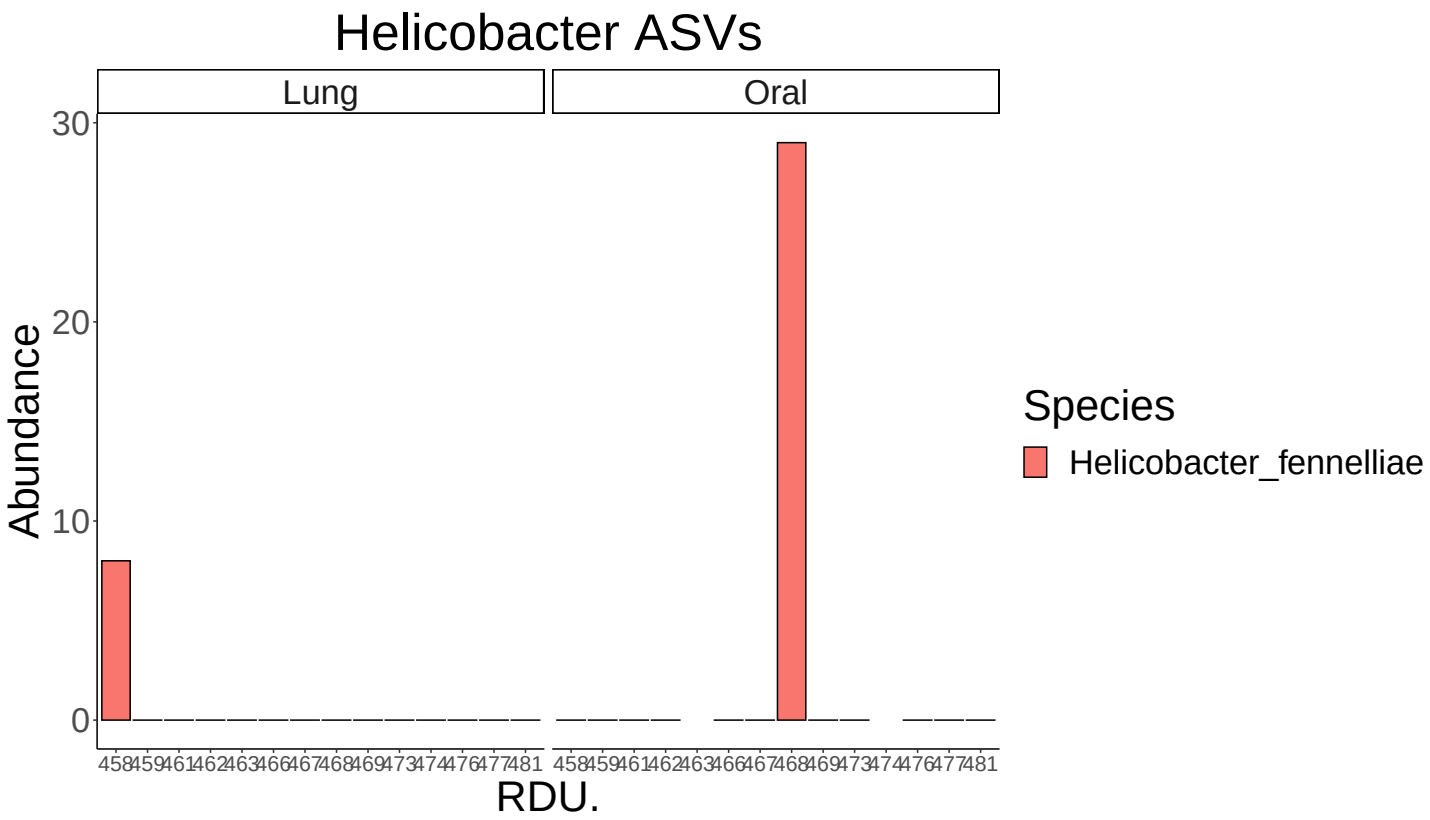
Groups	Measure	Test method	p.value	Significance
H.pylori_(-)_Lung vs H.pylori_(-)_Oral	Observed	KW	0.220	
H.pylori_(-)_Lung vs H.pylori_(+)_Lung	Observed	KW	0.651	
H.pylori_(-)_Lung vs H.pylori_(+)_Oral	Observed	KW	0.081	
H.pylori_(-)_Oral vs H.pylori_(+)_Lung	Observed	KW	0.262	
H.pylori_(-)_Oral vs H.pylori_(+)_Oral	Observed	KW	0.520	
H.pylori_(+)_Lung vs H.pylori_(+)_Oral	Observed	KW	0.109	
H.pylori_(-)_Lung vs H.pylori_(-)_Oral vs H.pylori_(+)_Lung vs H.pylori_(+)_Oral	Observed	KW	0.202	
H.pylori_(-)_Lung vs H.pylori_(-)_Oral	Chao1	KW	0.220	
H.pylori_(-)_Lung vs H.pylori_(+)_Lung	Chao1	KW	0.651	
H.pylori_(-)_Lung vs H.pylori_(+)_Oral	Chao1	KW	0.081	
H.pylori_(-)_Oral vs H.pylori_(+)_Lung	Chao1	KW	0.262	
H.pylori_(-)_Oral vs H.pylori_(+)_Oral	Chao1	KW	0.520	
H.pylori_(+)_Lung vs H.pylori_(+)_Oral	Chao1	KW	0.109	
H.pylori_(-)_Lung vs H.pylori_(-)_Oral vs H.pylori_(+)_Lung vs H.pylori_(+)_Oral	Chao1	KW	0.202	
H.pylori_(-)_Lung vs H.pylori_(-)_Oral	ACE	KW	0.220	
H.pylori_(-)_Lung vs H.pylori_(+)_Lung	ACE	KW	0.651	
H.pylori_(-)_Lung vs H.pylori_(+)_Oral	ACE	KW	0.081	
H.pylori_(-)_Oral vs H.pylori_(+)_Lung	ACE	KW	0.262	
H.pylori_(-)_Oral vs H.pylori_(+)_Oral	ACE	KW	0.520	
H.pylori_(+)_Lung vs H.pylori_(+)_Oral	ACE	KW	0.109	
H.pylori_(-)_Lung vs H.pylori_(-)_Oral vs H.pylori_(+)_Lung vs H.pylori_(+)_Oral	ACE	KW	0.202	
H.pylori_(-)_Lung vs H.pylori_(-)_Oral	Shannon	KW	0.439	
H.pylori_(-)_Lung vs H.pylori_(+)_Lung	Shannon	KW	1.000	
H.pylori_(-)_Lung vs H.pylori_(+)_Oral	Shannon	KW	0.796	
H.pylori_(-)_Oral vs H.pylori_(+)_Lung	Shannon	KW	0.109	
H.pylori_(-)_Oral vs H.pylori_(+)_Oral	Shannon	KW	0.337	
H.pylori_(+)_Lung vs H.pylori_(+)_Oral	Shannon	KW	0.423	
H.pylori_(-)_Lung vs H.pylori_(-)_Oral vs H.pylori_(+)_Lung vs H.pylori_(+)_Oral	Shannon	KW	0.540	
H.pylori_(-)_Lung vs H.pylori_(-)_Oral	Simpson	KW	0.519	
H.pylori_(-)_Lung vs H.pylori_(+)_Lung	Simpson	KW	0.699	
H.pylori_(-)_Lung vs H.pylori_(+)_Oral	Simpson	KW	0.699	
H.pylori_(-)_Oral vs H.pylori_(+)_Lung	Simpson	KW	0.109	
H.pylori_(-)_Oral vs H.pylori_(+)_Oral	Simpson	KW	0.423	
H.pylori_(+)_Lung vs H.pylori_(+)_Oral	Simpson	KW	0.262	
H.pylori_(-)_Lung vs H.pylori_(-)_Oral vs H.pylori_(+)_Lung vs H.pylori_(+)_Oral	Simpson	KW	0.493	
H.pylori_(-)_Lung vs H.pylori_(-)_Oral	InvSimpson	KW	0.519	
H.pylori_(-)_Lung vs H.pylori_(+)_Lung	InvSimpson	KW	0.699	
H.pylori_(-)_Lung vs H.pylori_(+)_Oral	InvSimpson	KW	0.699	
H.pylori_(-)_Oral vs H.pylori_(+)_Lung	InvSimpson	KW	0.109	
H.pylori_(-)_Oral vs H.pylori_(+)_Oral	InvSimpson	KW	0.423	
H.pylori_(+)_Lung vs H.pylori_(+)_Oral	InvSimpson	KW	0.262	
H.pylori_(-)_Lung vs H.pylori_(-)_Oral vs H.pylori_(+)_Lung vs H.pylori_(+)_Oral	InvSimpson	KW	0.493	
H.pylori_(-)_Lung vs H.pylori_(-)_Oral	Fisher	KW	0.606	
H.pylori_(-)_Lung vs H.pylori_(+)_Lung	Fisher	KW	0.699	
H.pylori_(-)_Lung vs H.pylori_(+)_Oral	Fisher	KW	0.796	
H.pylori_(-)_Oral vs H.pylori_(+)_Lung	Fisher	KW	0.631	
H.pylori_(-)_Oral vs H.pylori_(+)_Oral	Fisher	KW	0.631	
H.pylori_(+)_Lung vs H.pylori_(+)_Oral	Fisher	KW	1.000	
H.pylori_(-)_Lung vs H.pylori_(-)_Oral vs H.pylori_(+)_Lung vs H.pylori_(+)_Oral	Fisher	KW	0.927	
H.pylori_(-)_Lung vs H.pylori_(-)_Oral	Coverage	KW	NaN	NA
H.pylori_(-)_Lung vs H.pylori_(+)_Lung	Coverage	KW	NaN	NA
H.pylori_(-)_Lung vs H.pylori_(+)_Oral	Coverage	KW	NaN	NA
H.pylori_(-)_Oral vs H.pylori_(+)_Lung	Coverage	KW	NaN	NA
H.pylori_(-)_Oral vs H.pylori_(+)_Oral	Coverage	KW	NaN	NA
H.pylori_(+)_Lung vs H.pylori_(+)_Oral	Coverage	KW	NaN	NA
H.pylori_(-)_Lung vs H.pylori_(-)_Oral vs H.pylori_(+)_Lung vs H.pylori_(+)_Oral	Coverage	KW	NaN	NA
H.pylori_(-)_Lung vs H.pylori_(-)_Oral	PD	KW	0.366	
H.pylori_(-)_Lung vs H.pylori_(+)_Lung	PD	KW	0.699	
H.pylori_(-)_Lung vs H.pylori_(+)_Oral	PD	KW	0.439	
H.pylori_(-)_Oral vs H.pylori_(+)_Lung	PD	KW	0.631	
H.pylori_(-)_Oral vs H.pylori_(+)_Oral	PD	KW	0.749	
H.pylori_(+)_Lung vs H.pylori_(+)_Oral	PD	KW	0.631	
H.pylori_(-)_Lung vs H.pylori_(-)_Oral vs H.pylori_(+)_Lung vs H.pylori_(+)_Oral	PD	KW	0.777	

Helicobacter positive respiratory samples

Helicobacter positive samples separated by site



Helicobacter positive samples separated by animal



Taxa barplots

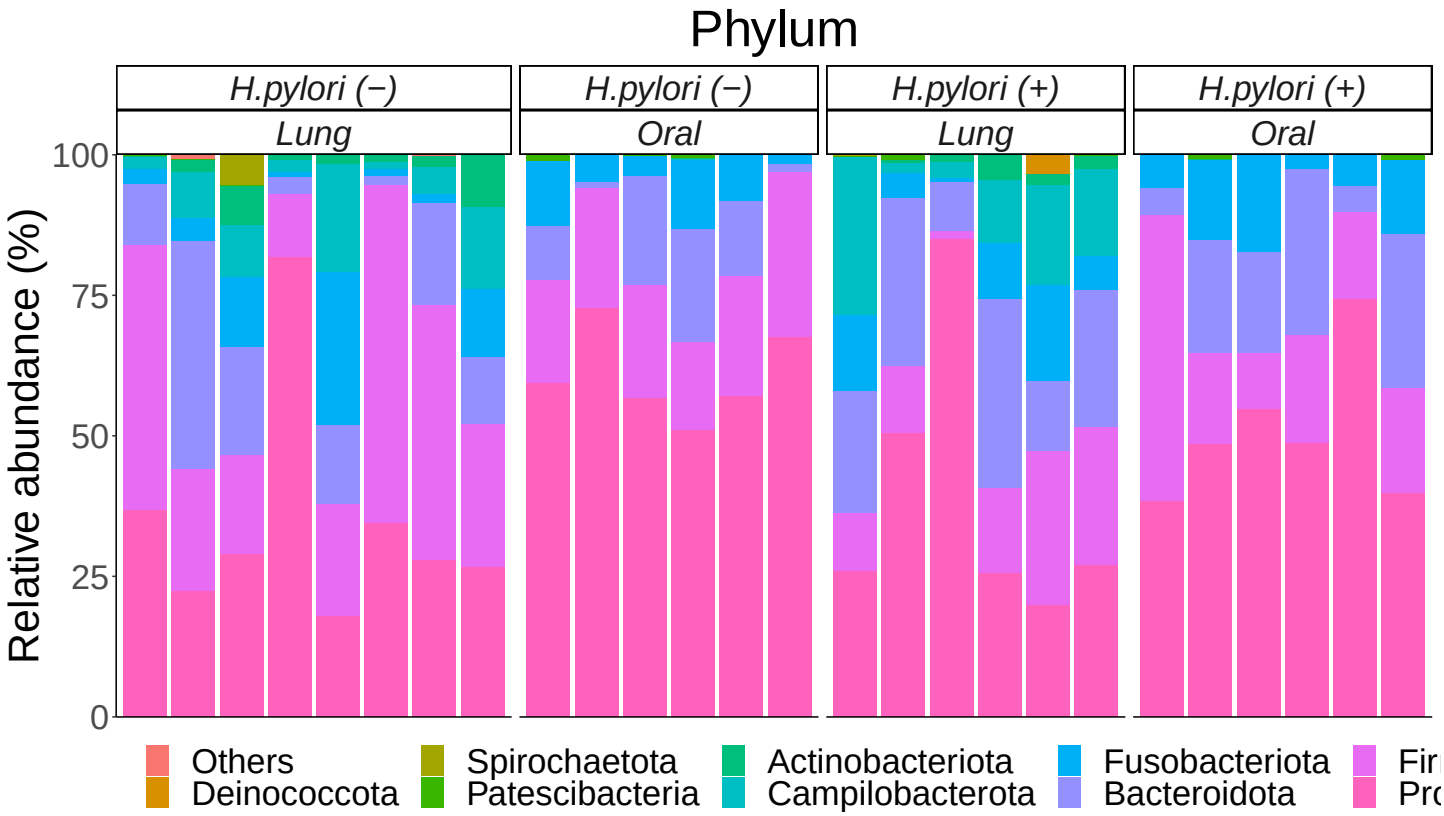


Figure 3: Microbiota Composition at Phylum level.

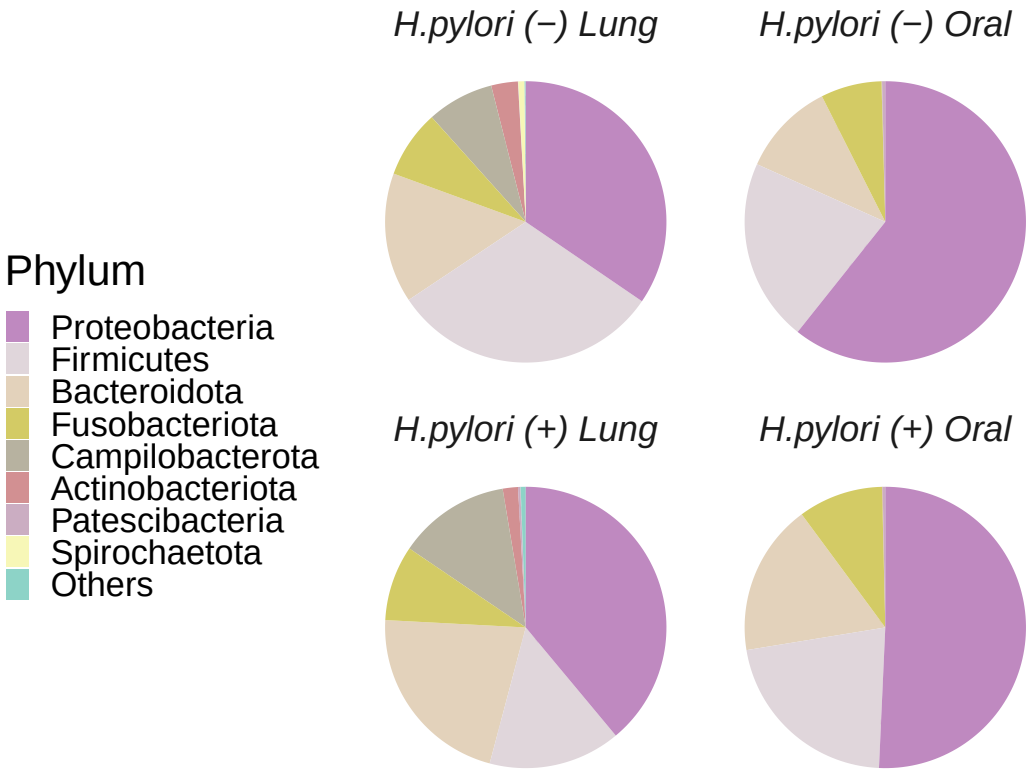


Figure 4: Microbiota Composition at Phylum level.

Table 3: Phylum Average Relative Abundance

Taxonomy	Sample	Average Percent Abundance
Acidobacteriota	H.pylori (+) Lung	0.1%
Actinobacteriota	H.pylori (-) Lung	3.1%
Actinobacteriota	H.pylori (+) Lung	1.8%
Actinobacteriota	H.pylori (+) Oral	0.1%
Actinobacteriota	H.pylori (-) Oral	0%
Bacteroidota	H.pylori (+) Lung	21.7%
Bacteroidota	H.pylori (+) Oral	17.4%
Bacteroidota	H.pylori (-) Lung	14.9%
Bacteroidota	H.pylori (-) Oral	10.8%
Campilobacterota	H.pylori (+) Lung	12.9%
Campilobacterota	H.pylori (-) Lung	7.7%
Campilobacterota	H.pylori (-) Oral	0%
Deinococcota	H.pylori (+) Lung	0.6%
Desulfobacterota	H.pylori (-) Lung	0.1%
Firmicutes	H.pylori (-) Lung	31.1%
Firmicutes	H.pylori (+) Oral	21.7%
Firmicutes	H.pylori (-) Oral	21%
Firmicutes	H.pylori (+) Lung	15.2%
Fusobacteriota	H.pylori (+) Oral	9.8%
Fusobacteriota	H.pylori (+) Lung	8.6%
Fusobacteriota	H.pylori (-) Lung	7.8%
Fusobacteriota	H.pylori (-) Oral	7%
Latescibacterota	H.pylori (-) Lung	0%
Patescibacteria	H.pylori (-) Oral	0.4%
Patescibacteria	H.pylori (+) Oral	0.3%
Patescibacteria	H.pylori (+) Lung	0.3%
Patescibacteria	H.pylori (-) Lung	0%
Proteobacteria	H.pylori (-) Oral	60.7%
Proteobacteria	H.pylori (+) Oral	50.7%
Proteobacteria	H.pylori (+) Lung	38.9%
Proteobacteria	H.pylori (-) Lung	34.5%
Spirochaetota	H.pylori (-) Lung	0.7%

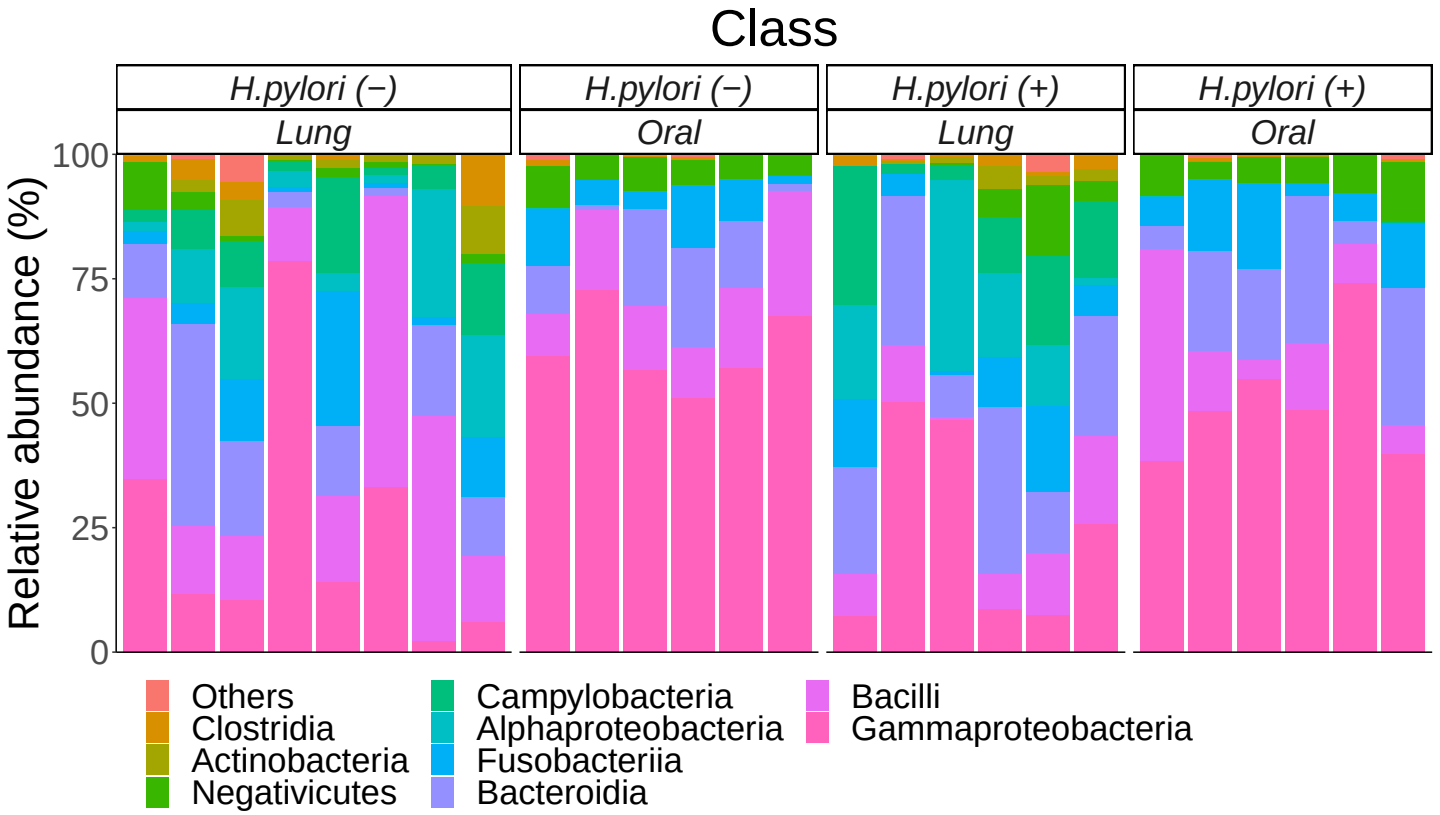


Figure 5: Microbiota Composition at Class level.

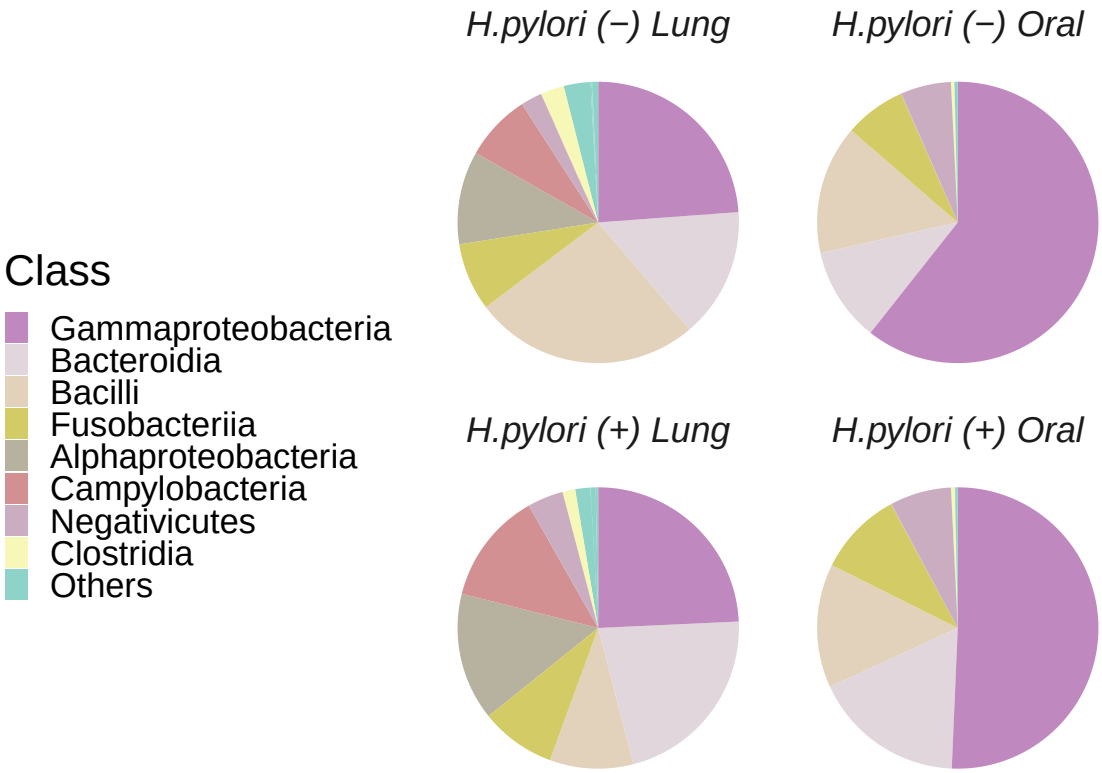


Figure 6: Microbiota Composition at Class level.

Table 4: Class Average Relative Abundance

Taxonomy	Sample	Average Percent Abundance
Actinobacteria	H.pylori (-) Lung	3.1%
Actinobacteria	H.pylori (+) Lung	1.7%
Alphaproteobacteria	H.pylori (+) Lung	14.7%
Alphaproteobacteria	H.pylori (-) Lung	10.7%
Bacilli	H.pylori (-) Lung	26%
Bacilli	H.pylori (-) Oral	14.9%
Bacilli	H.pylori (+) Oral	14.2%
Bacilli	H.pylori (+) Lung	9.6%
Bacteroidia	H.pylori (+) Lung	21.7%
Bacteroidia	H.pylori (+) Oral	17.4%
Bacteroidia	H.pylori (-) Lung	14.9%
Bacteroidia	H.pylori (-) Oral	10.8%
Campylobacteria	H.pylori (+) Lung	12.9%
Campylobacteria	H.pylori (-) Lung	7.7%
Clostridia	H.pylori (-) Lung	2.7%
Clostridia	H.pylori (+) Lung	1.5%
Clostridia	H.pylori (+) Oral	0.4%
Clostridia	H.pylori (-) Oral	0.4%
Deinococci	H.pylori (+) Lung	0.6%
Fusobacteriia	H.pylori (+) Oral	9.8%
Fusobacteriia	H.pylori (+) Lung	8.6%
Fusobacteriia	H.pylori (-) Lung	7.8%
Fusobacteriia	H.pylori (-) Oral	7%
Gammaproteobacteria	H.pylori (-) Oral	60.7%
Gammaproteobacteria	H.pylori (+) Oral	50.7%
Gammaproteobacteria	H.pylori (+) Lung	24.3%
Gammaproteobacteria	H.pylori (-) Lung	23.8%
Negativicutes	H.pylori (+) Oral	7.1%
Negativicutes	H.pylori (-) Oral	5.8%
Negativicutes	H.pylori (+) Lung	4.1%
Negativicutes	H.pylori (-) Lung	2.4%
Spirochaetia	H.pylori (-) Lung	0.7%

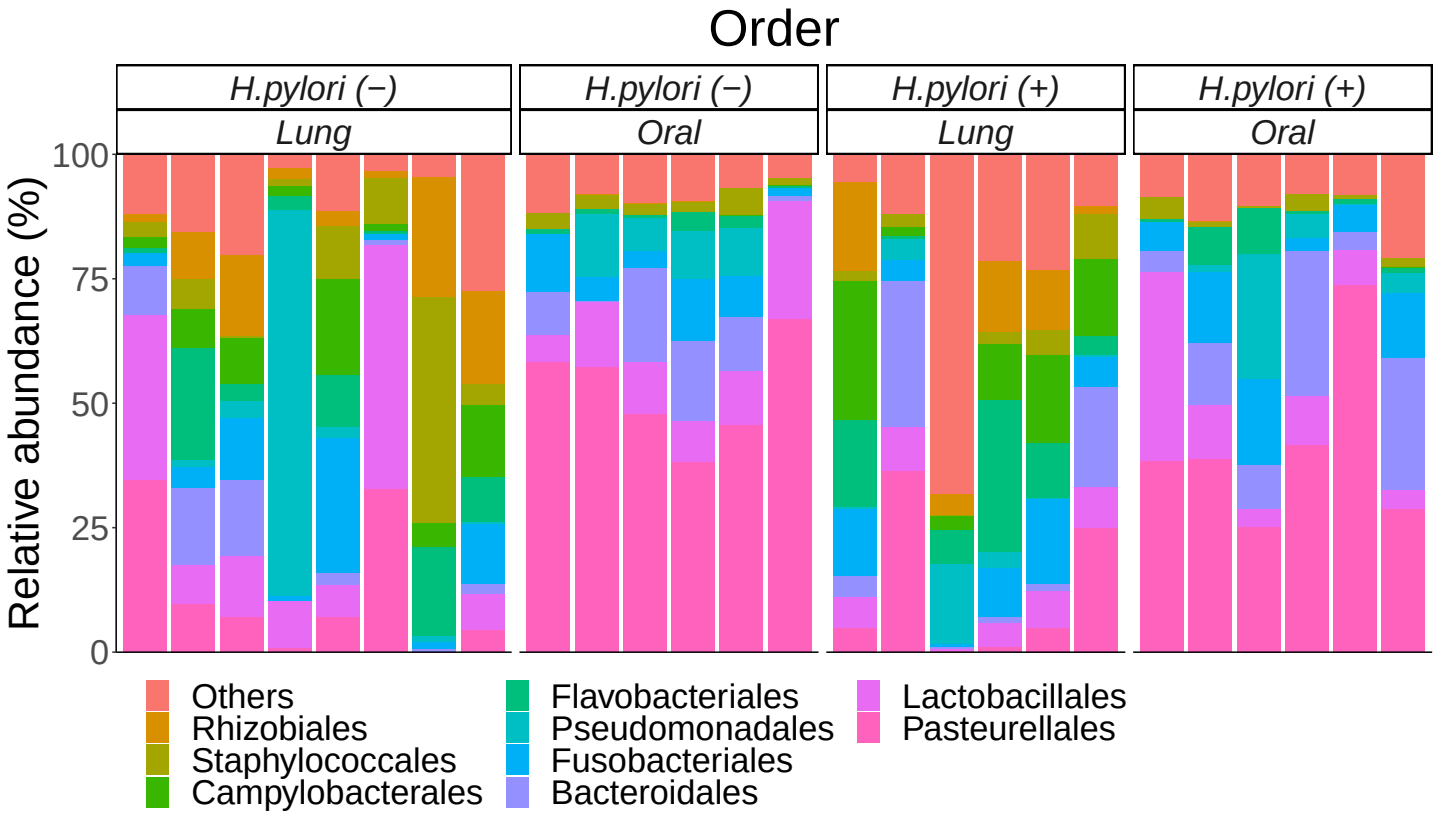


Figure 7: Microbiota Composition at Order level.

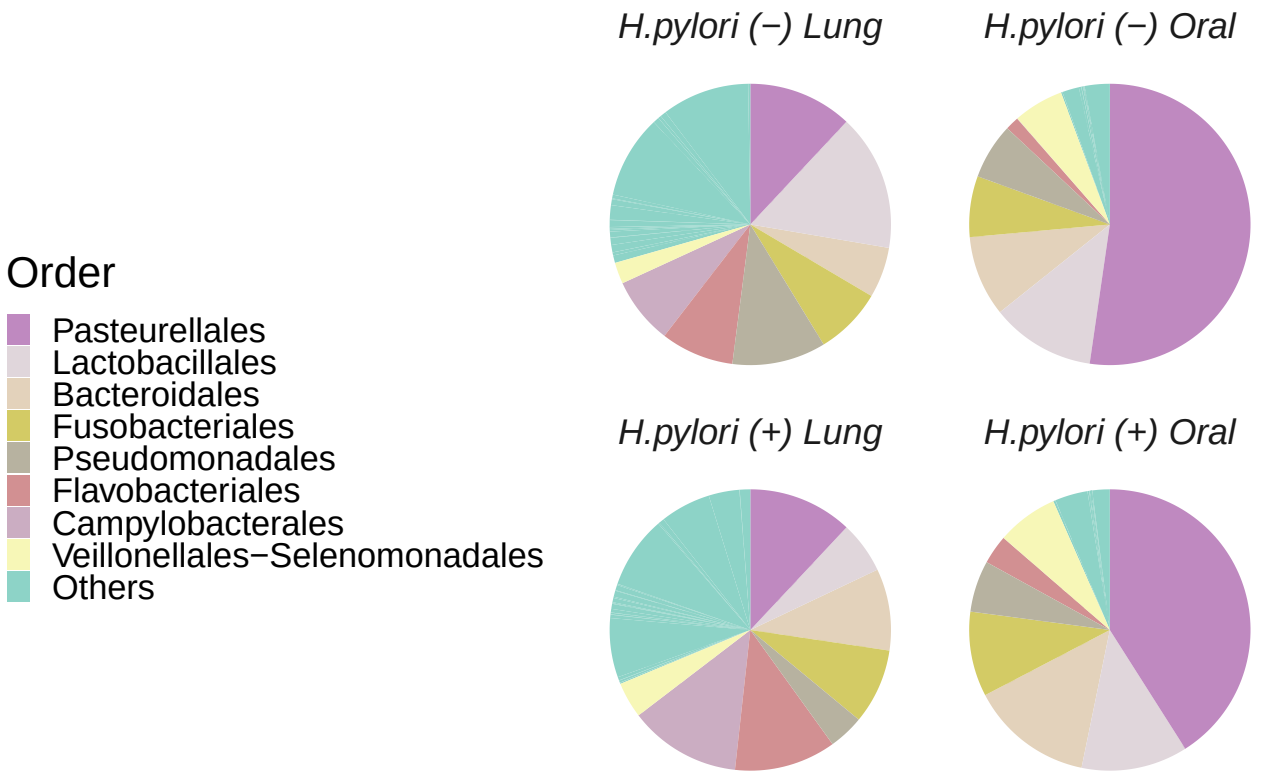


Figure 8: Microbiota Composition at Order level.

Table 5: Order Average Relative Abundance

Taxonomy	Sample	Average Percent Abundance
Bacteroidales	H.pylori (+) Oral	14.1%
Bacteroidales	H.pylori (+) Lung	9.4%
Bacteroidales	H.pylori (-) Oral	9.3%
Bacteroidales	H.pylori (-) Lung	5.8%
Burkholderiales	H.pylori (+) Lung	6.8%
Campylobacterales	H.pylori (+) Lung	12.9%
Campylobacterales	H.pylori (-) Lung	7.7%
Flavobacteriales	H.pylori (+) Lung	11.7%
Flavobacteriales	H.pylori (-) Lung	8.4%
Fusobacteriales	H.pylori (+) Oral	9.8%
Fusobacteriales	H.pylori (+) Lung	8.6%
Fusobacteriales	H.pylori (-) Lung	7.8%
Fusobacteriales	H.pylori (-) Oral	7%
Lactobacillales	H.pylori (-) Lung	15.7%
Lactobacillales	H.pylori (+) Oral	12.2%
Lactobacillales	H.pylori (-) Oral	12%
Lactobacillales	H.pylori (+) Lung	6%
Pasteurellales	H.pylori (-) Oral	52.3%
Pasteurellales	H.pylori (+) Oral	41%
Pasteurellales	H.pylori (+) Lung	12%
Pasteurellales	H.pylori (-) Lung	12%
Pseudomonadales	H.pylori (-) Lung	10.8%
Pseudomonadales	H.pylori (-) Oral	6.4%
Pseudomonadales	H.pylori (+) Oral	5.9%
Pseudomonadales	H.pylori (+) Lung	4.1%
Rhizobiales	H.pylori (-) Lung	9.6%
Rhizobiales	H.pylori (+) Lung	8.3%
Sphingomonadales	H.pylori (+) Lung	5.8%
Staphylococcales	H.pylori (-) Lung	10.1%
Veillonellales-Selenomonadales	H.pylori (+) Oral	7.1%
Veillonellales-Selenomonadales	H.pylori (-) Oral	5.8%
Veillonellales-Selenomonadales	H.pylori (+) Lung	4.1%

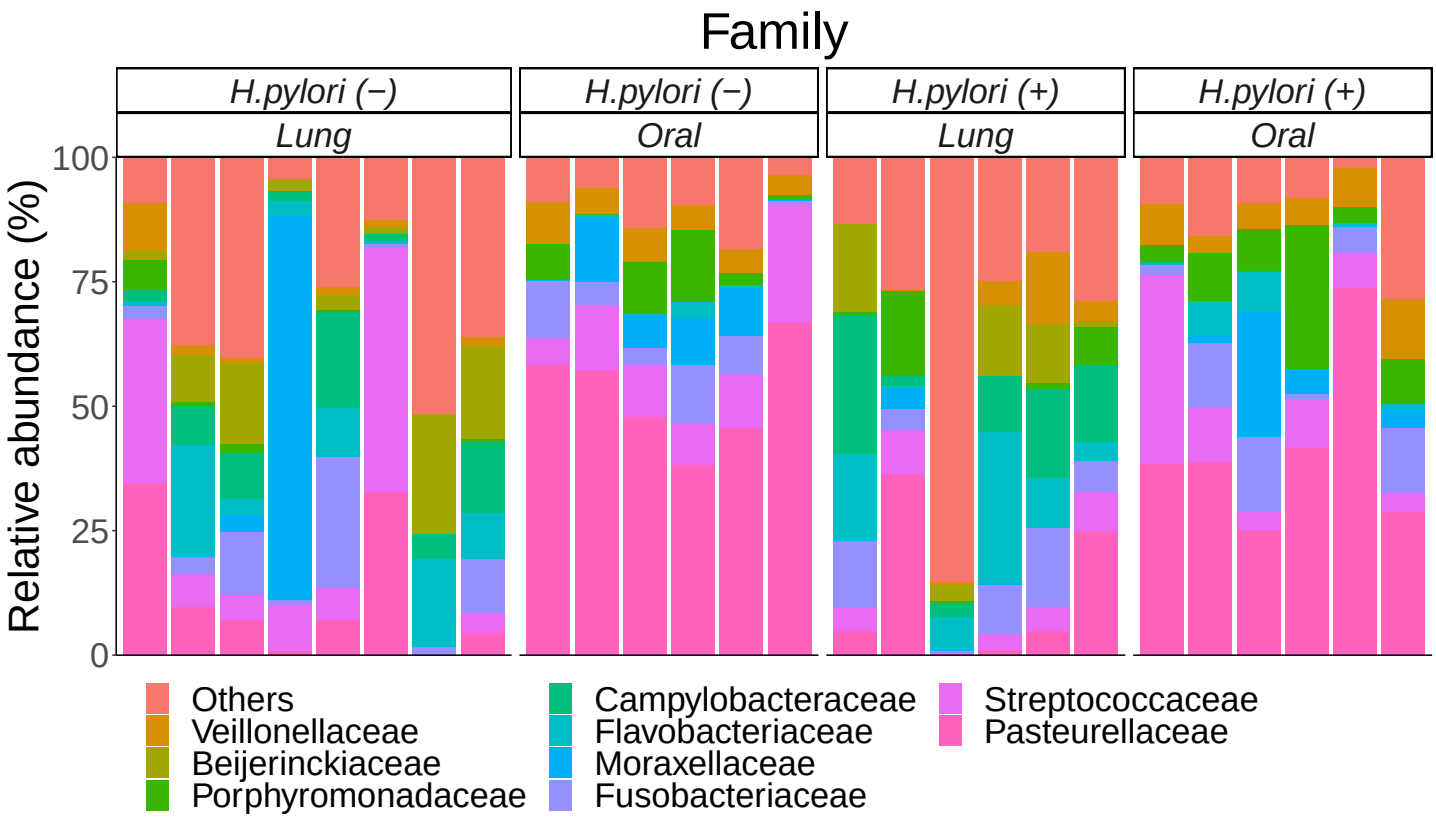


Figure 9: Microbiota Composition at Family level.

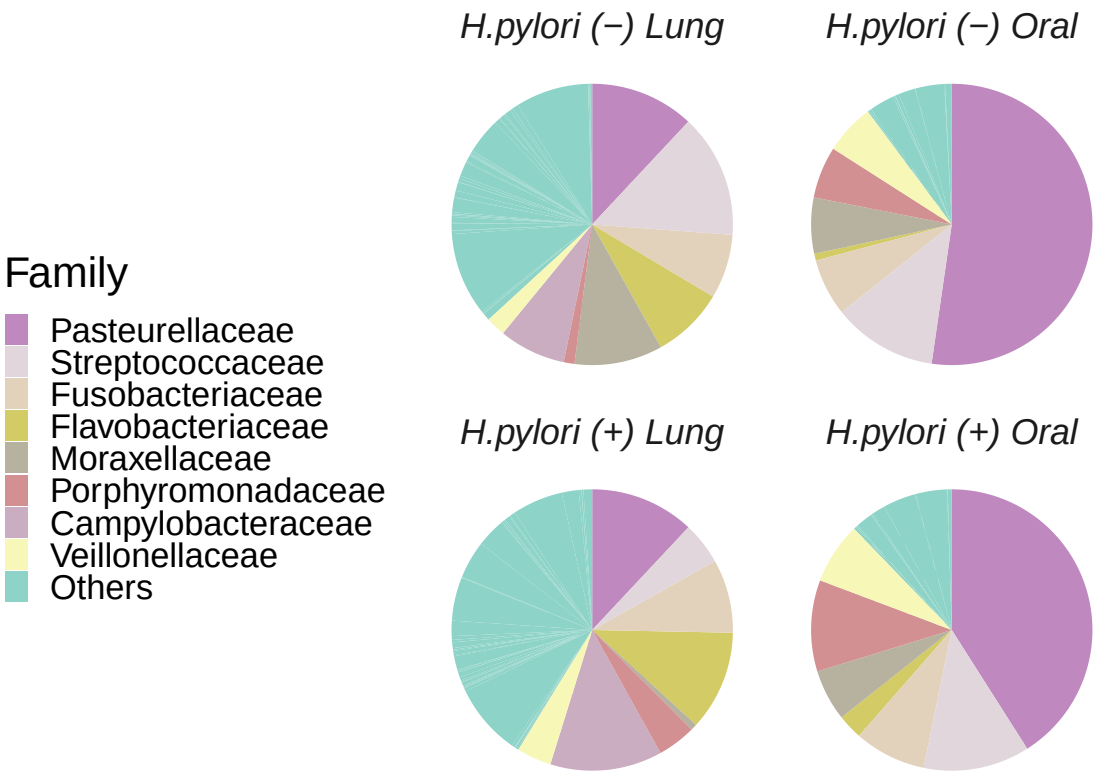


Figure 10: Microbiota Composition at Family level.

Table 6: Family Average Relative Abundance

Taxonomy	Sample	Average Percent Abundance
Beijerinckiaceae	H.pylori (-) Lung	9.5%
Beijerinckiaceae	H.pylori (+) Lung	8.1%
Campylobacteraceae	H.pylori (+) Lung	12.9%
Campylobacteraceae	H.pylori (-) Lung	7.7%
Flavobacteriaceae	H.pylori (+) Lung	11.5%
Flavobacteriaceae	H.pylori (-) Lung	8.3%
Fusobacteriaceae	H.pylori (+) Lung	8.5%
Fusobacteriaceae	H.pylori (+) Oral	8.2%
Fusobacteriaceae	H.pylori (-) Lung	7.4%
Fusobacteriaceae	H.pylori (-) Oral	6.6%
Moraxellaceae	H.pylori (-) Lung	10.1%
Moraxellaceae	H.pylori (-) Oral	6.4%
Moraxellaceae	H.pylori (+) Oral	5.9%
Oxalobacteraceae	H.pylori (+) Lung	5%
Pasteurellaceae	H.pylori (-) Oral	52.3%
Pasteurellaceae	H.pylori (+) Oral	41%
Pasteurellaceae	H.pylori (+) Lung	12%
Pasteurellaceae	H.pylori (-) Lung	12%
Porphyromonadaceae	H.pylori (+) Oral	10.5%
Porphyromonadaceae	H.pylori (-) Oral	5.9%
Porphyromonadaceae	H.pylori (+) Lung	4.4%
Prevotellaceae	H.pylori (+) Lung	4.3%
Prevotellaceae	H.pylori (-) Lung	4.1%
Sphingomonadaceae	H.pylori (+) Lung	5.8%
Staphylococcaceae	H.pylori (-) Lung	8.4%
Streptococcaceae	H.pylori (-) Lung	14.2%
Streptococcaceae	H.pylori (+) Oral	12.2%
Streptococcaceae	H.pylori (-) Oral	12%
Streptococcaceae	H.pylori (+) Lung	4.9%
Veillonellaceae	H.pylori (+) Oral	7%
Veillonellaceae	H.pylori (-) Oral	5.8%
Veillonellaceae	H.pylori (+) Lung	4%

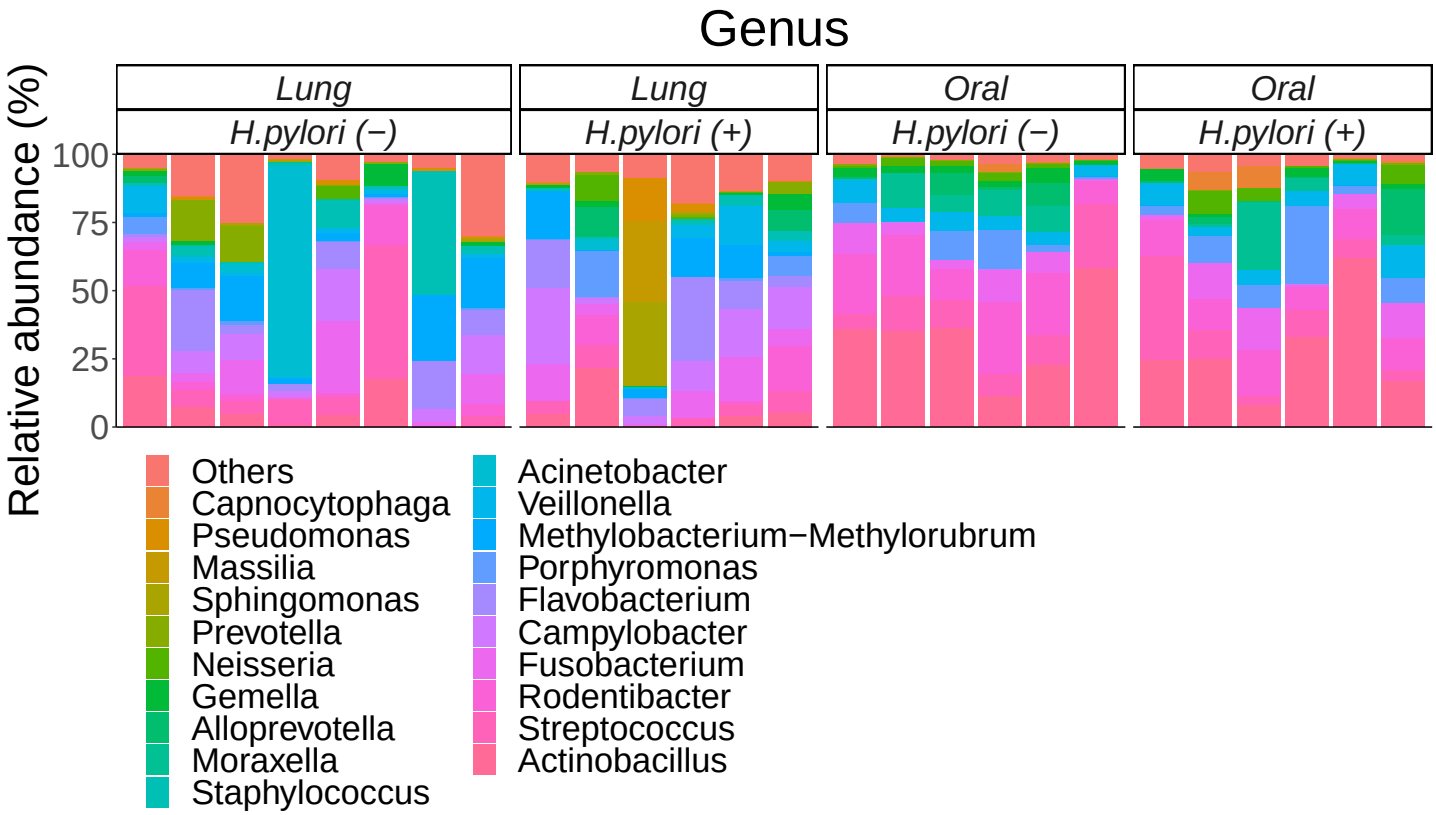


Figure 11: Microbiota Composition at Genus level.

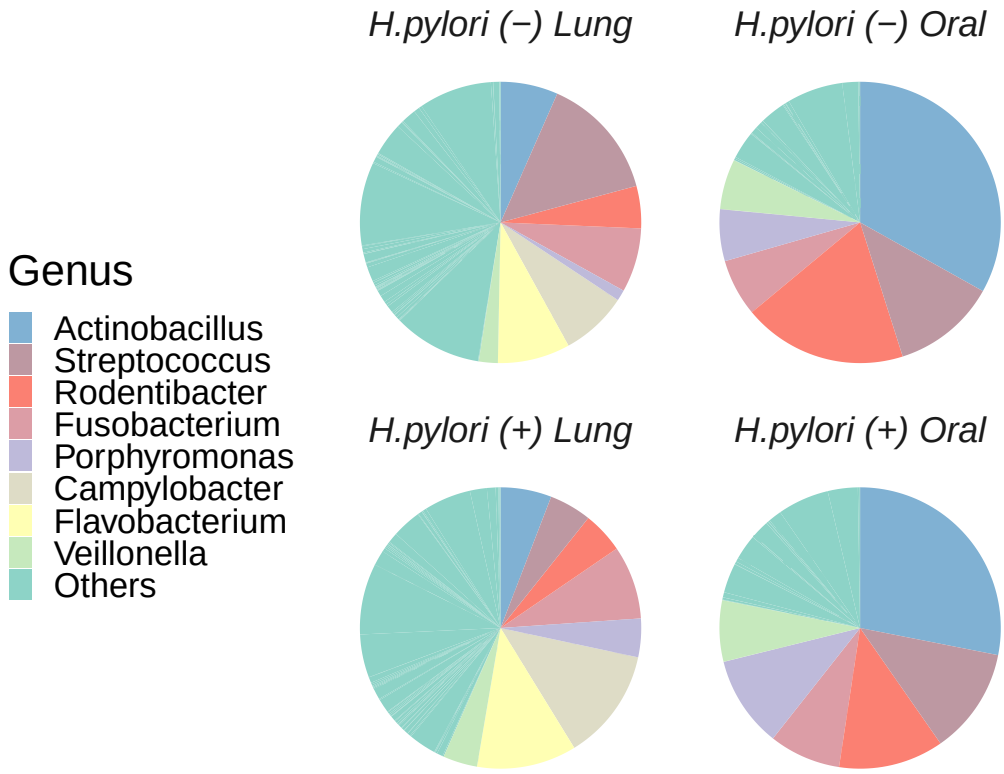


Figure 12: Microbiota Composition at Genus level.

Table 7: Genus Average Relative Abundance

Taxonomy	Sample	Average Percent Abundance
Acinetobacter	H.pylori (-) Lung	10.1%
Actinobacillus	H.pylori (-) Oral	33.1%
Actinobacillus	H.pylori (+) Oral	28.1%
Actinobacillus	H.pylori (-) Lung	6.6%
Actinobacillus	H.pylori (+) Lung	5.9%
Campylobacter	H.pylori (+) Lung	12.9%
Campylobacter	H.pylori (-) Lung	7.7%
Flavobacterium	H.pylori (+) Lung	11.5%
Flavobacterium	H.pylori (-) Lung	8.3%
Fusobacterium	H.pylori (+) Lung	8.5%
Fusobacterium	H.pylori (+) Oral	8.2%
Fusobacterium	H.pylori (-) Lung	7.4%
Fusobacterium	H.pylori (-) Oral	6.6%
Massilia	H.pylori (+) Lung	4.9%
Methylobacterium-Methylorubrum	H.pylori (-) Lung	9.5%
Methylobacterium-Methylorubrum	H.pylori (+) Lung	8.1%
Moraxella	H.pylori (-) Oral	6.4%
Moraxella	H.pylori (+) Oral	5.9%
Porphyromonas	H.pylori (+) Oral	10.5%
Porphyromonas	H.pylori (-) Oral	5.9%
Rodentibacter	H.pylori (-) Oral	18.9%
Rodentibacter	H.pylori (+) Oral	12.1%
Rodentibacter	H.pylori (-) Lung	4.9%
Rodentibacter	H.pylori (+) Lung	4.7%
Sphingomonas	H.pylori (+) Lung	5.4%
Staphylococcus	H.pylori (-) Lung	8.4%
Streptococcus	H.pylori (-) Lung	14.2%
Streptococcus	H.pylori (+) Oral	12.2%
Streptococcus	H.pylori (-) Oral	12%
Streptococcus	H.pylori (+) Lung	4.9%
Veillonella	H.pylori (+) Oral	7%
Veillonella	H.pylori (-) Oral	5.8%

Genera correlation with Il8 concentration (Serum and BAL)

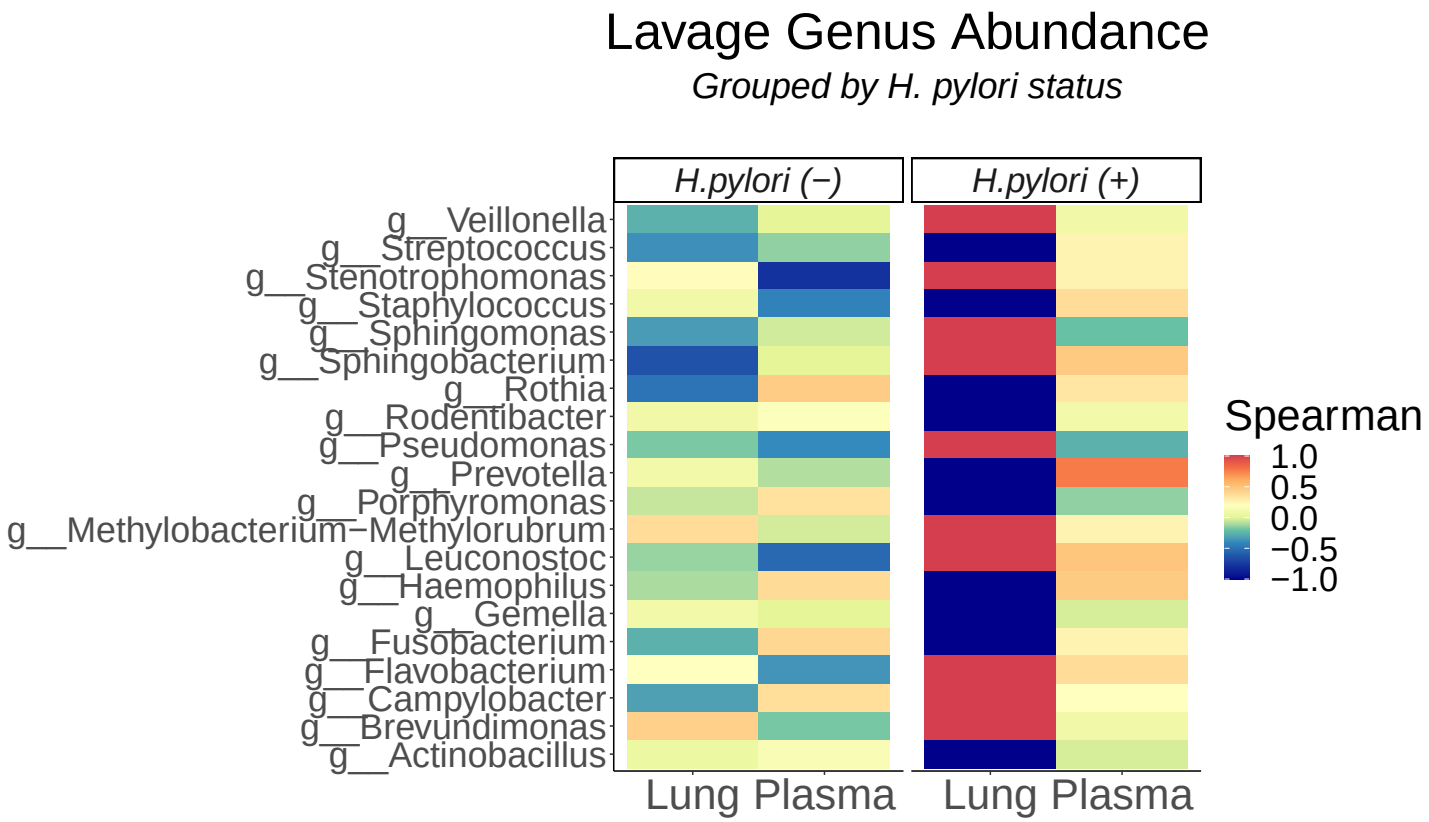


Figure 13: IL8 and lavage genus abundance Spearman correlations separated by H. pylori status

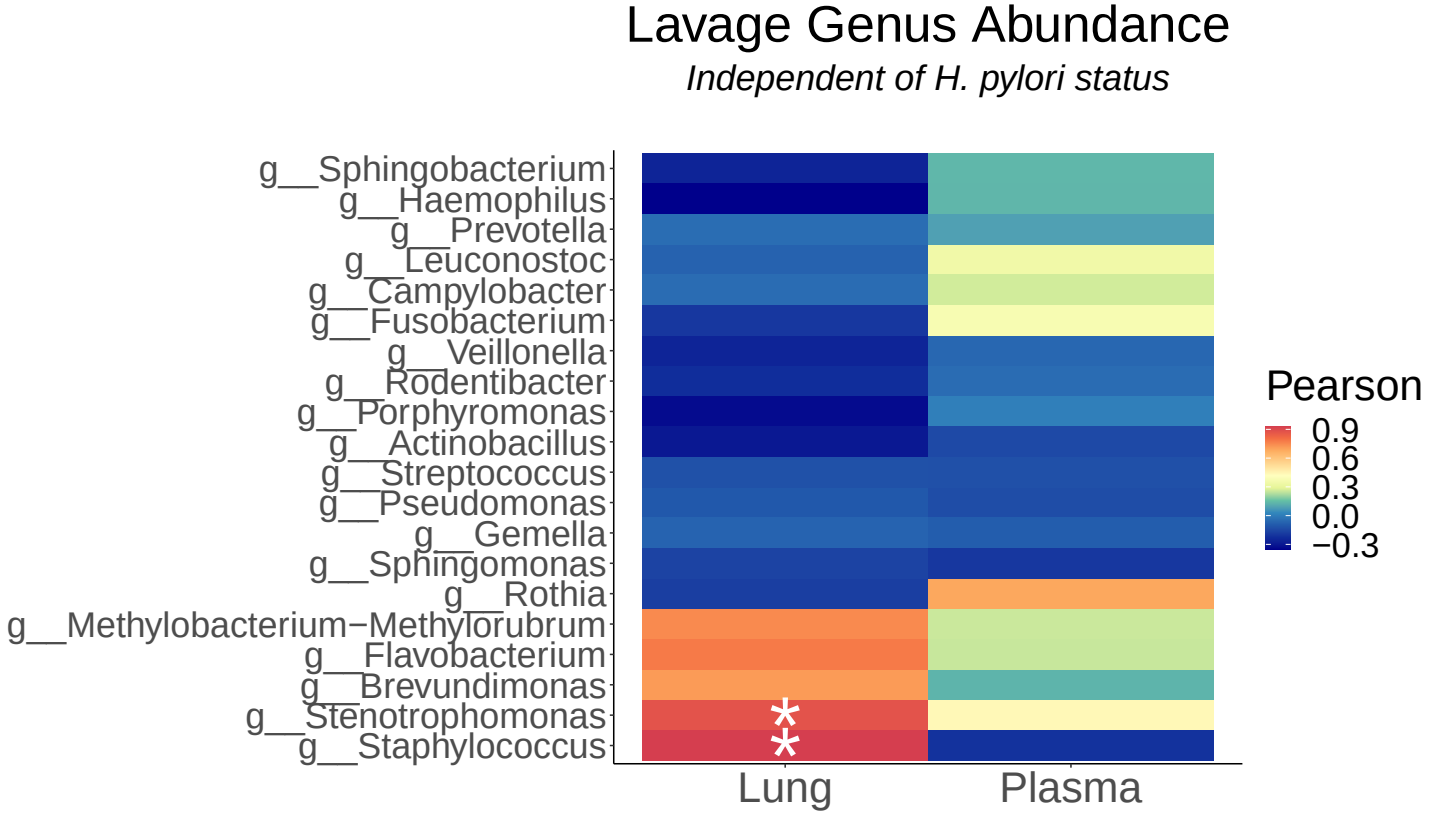


Figure 14: IL8 and lavage genus abundance Spearman correlations independent of H. pylori status

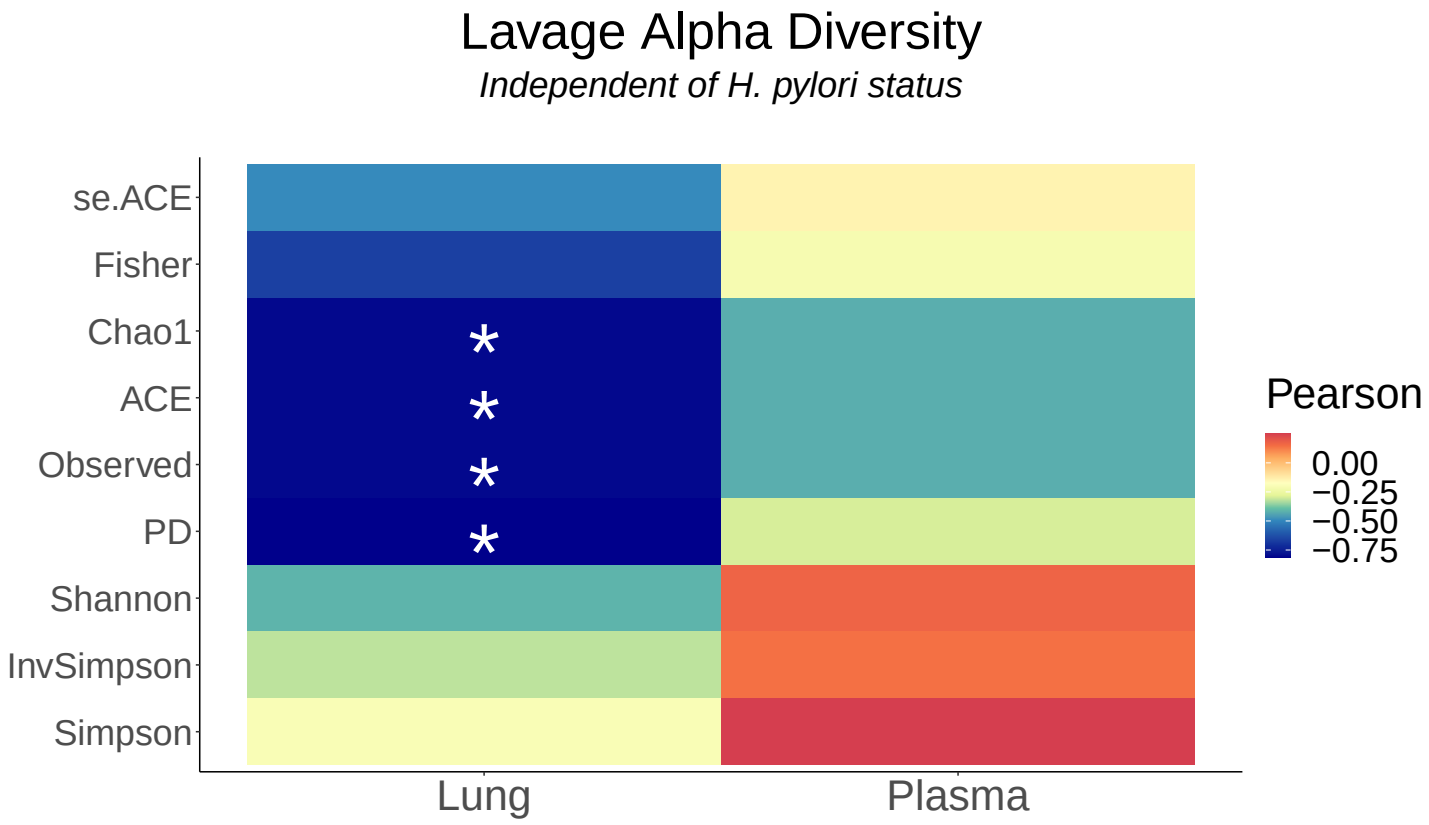


Figure 15: IL8 and lavage alpha diversity Spearman correlations inpendent of H. pylori status.

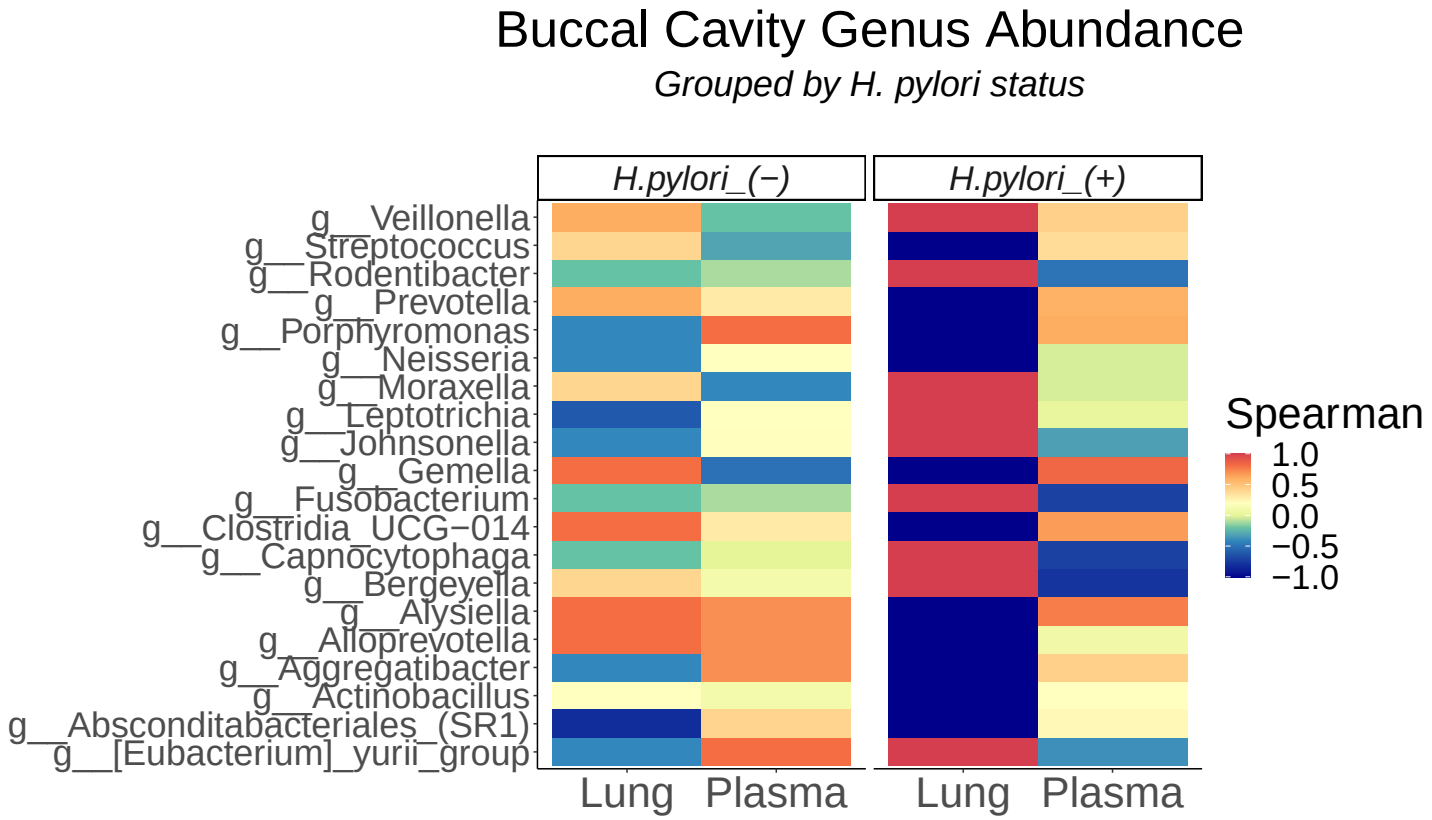


Figure 16: IL8 and Buccal genus abundance Spearman correlations separated by H. pylori status

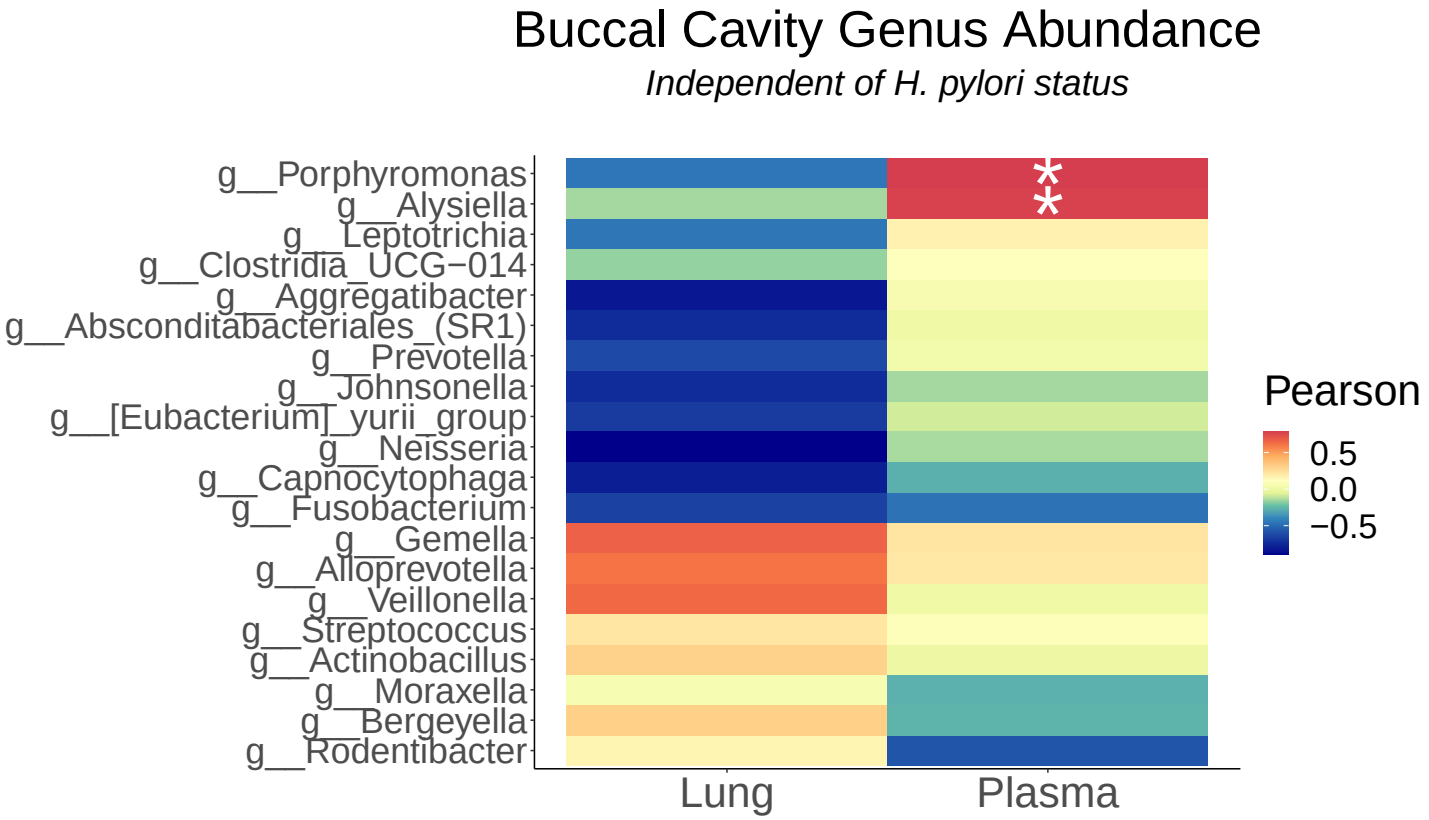


Figure 17: IL8 and Buccal genus abundance Spearman correlations independent of H. pylori status

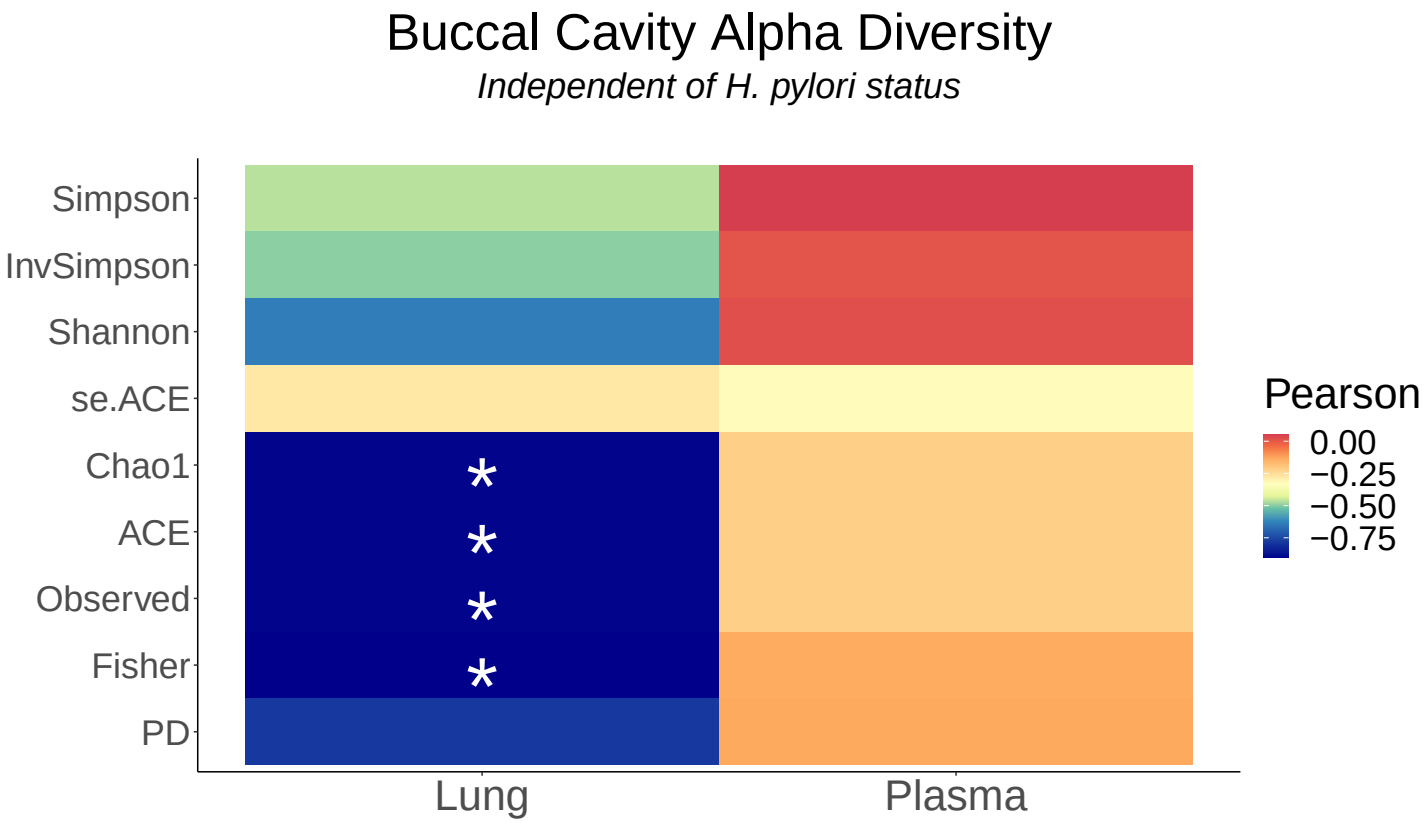


Figure 18: IL8 and Buccal alpha diversity Spearman correlations independent of H. pylori status

Record session information

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## Running under: Ubuntu 18.04.6 LTS
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