

Comparison of Results from Zymo D6300; D6331 and D6323 FR : V1-V9 EMU on EMU database

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Contents

Notes	2
Import Exp data	2
Filter Exp data	2
Filter samples based on total read count	2
Fix sample names	2
Add lineage and metadata to Gold Standard Data	2
Fix sample names from '-'	2
Merge exp data with GS	2
Filter Taxa for Gold Standard	2
Add Gram Stain Info	3
Omit Eukaryotes	3
 <i>Zymo ONT V1-V9 comparison: Relative abundance of taxa at each taxonomic level</i>	3
Gram Stain level	3
Phylum level	4
Class level	8
Order level	15
Family level	24
Genus level	38
Species level	47
 B-diversity Analysis using sample-wise <i>Bray-Curtis</i> distances	53
Non-metric Multi-Dimensional Scaling (<i>NMDS</i>)	53

Notes

- Unclassified reads *were* excluded
- Taxa with total reads number of 10 or lower were excluded
- Eukaryotes *were* excluded from the analysis

Import Exp data

MCM D6300

MCM D6331

FR D6323

Canis lupus

Homo sapiens

Merge

Filter Exp data

Filter samples based on total read count

Fix sample names

Add lineage and metadata to Gold Standard Data

Limosilactobacillus fermentum in the theoretical composition was changed to *Lactobacillus fermentum*

```
## Error in validObject(.Object) : invalid class "otu_table" object:  
## OTU abundance data must have non-zero dimensions.
```

Fix sample names from ‘-’

Merge exp data with GS

Filter Taxa for Gold Standard

These are the taxa that were found in the experimental data

Add Gram Stain Info

Omit Eukaryotes

Zymo ONT V1-V9 comparison: Relative abundance of taxa at each taxonomic level

Gram Stain level

Barplot of abundances



Heatmap of VST-normalized abundance values

Phylum level

Barplot of abundances



Number of Significantly Different Taxa Among *FR*, *H. sapiens* and *C. lupus*

taxon_level	comparison	FALSE	TRUE
phylum	FR_VS_Canis_lupus	2	10
phylum	FR_VS_Homo_sapiens	3	9
phylum	Homo_sapiens_VS_Canis_lupus	4	8

L2FC of Taxa in *FR* vs *H. sapiens* and in *FR* vs *C. lupus*



FR Taxa that are more similar to *H. sapiens* than to *C. lupus*

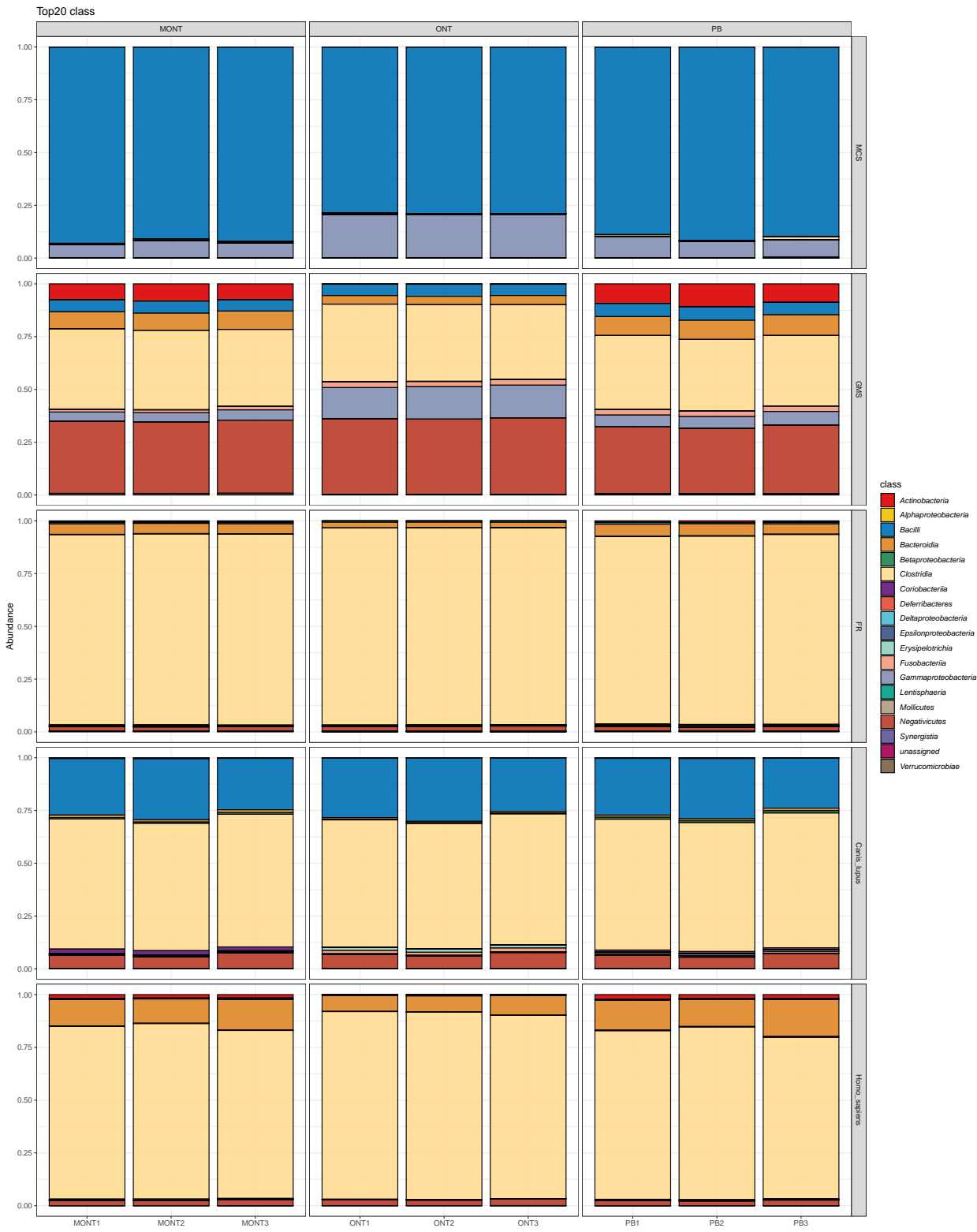
```
## Key: <taxon>
##
##          taxon      baseMean log2FoldChange      lfcSE
##          <char>      <num>      <num>      <num>
## 1:      Bacteria;Actinobacteria 2.335736e+04      -4.2933237 0.7185858
## 2:      Bacteria;Bacteroidetes 1.586446e+05      -5.2651236 0.3270339
## 3: Bacteria;Candidatus Melainabacteria 5.457154e+02      -0.8289476 0.4264736
## 4:      Bacteria;Cyanobacteria 7.095594e-01      0.3829166 4.6133686
## 5:      Bacteria;Deferribacteres 2.572985e+01      0.0000000 1.1590216
## 6:      Bacteria;Firmicutes 8.447504e+06      -3.9304596 0.3839893
## 7:      Bacteria;Fusobacteria 7.453527e+03      -4.2924878 0.6392065
## 8:      Bacteria;Lentisphaerae 2.230893e+01      5.3566018 1.1879978
## 9:      Bacteria;Proteobacteria 1.022620e+06      -4.3698578 0.4900400
## 10:     Bacteria;Synergistetes 1.416184e+01      4.7009578 1.2676185
## 11:     Bacteria;Tenericutes 8.978645e+01      5.5128515 0.8597260
## 12:     Bacteria;Verrucomicrobia 8.656985e+02      2.8799707 1.3347028
##
##          stat      pvalue      padj      comparison superkingdom
##          <num>      <num>      <num>      <char>      <char>
## 1: -5.97468458 2.305358e-09 4.610716e-09 FR_VS_Homo_sapiens Bacteria
## 2: -16.09962667 2.566484e-58 3.079781e-57 FR_VS_Homo_sapiens Bacteria
## 3: -1.94372529 5.192859e-02 6.231430e-02 FR_VS_Homo_sapiens Bacteria
## 4: 0.08300152 9.338503e-01 1.000000e+00 FR_VS_Homo_sapiens Bacteria
## 5: 0.00000000 1.000000e+00 1.000000e+00 FR_VS_Homo_sapiens Bacteria
## 6: -10.23585602 1.369784e-24 8.218703e-24 FR_VS_Homo_sapiens Bacteria
## 7: -6.71533817 1.876306e-11 5.628917e-11 FR_VS_Homo_sapiens Bacteria
## 8: 4.50893260 6.515460e-06 1.116936e-05 FR_VS_Homo_sapiens Bacteria
## 9: -8.91734863 4.775844e-19 1.910338e-18 FR_VS_Homo_sapiens Bacteria
## 10: 3.70849584 2.084941e-04 3.127411e-04 FR_VS_Homo_sapiens Bacteria
## 11: 6.41233570 1.433068e-10 3.439364e-10 FR_VS_Homo_sapiens Bacteria
## 12: 2.15776178 3.094636e-02 4.126181e-02 FR_VS_Homo_sapiens Bacteria
##
##          phylum is.significant taxon_level
##          <char>      <lgcl>      <char>
## 1:      Actinobacteria      TRUE      phylum
## 2:      Bacteroidetes      TRUE      phylum
## 3: Candidatus Melainabacteria      FALSE      phylum
## 4:      Cyanobacteria      FALSE      phylum
## 5:      Deferribacteres      FALSE      phylum
## 6:      Firmicutes      TRUE      phylum
## 7:      Fusobacteria      TRUE      phylum
## 8:      Lentisphaerae      TRUE      phylum
## 9:      Proteobacteria      TRUE      phylum
## 10:     Synergistetes      TRUE      phylum
## 11:     Tenericutes      TRUE      phylum
## 12:     Verrucomicrobia      TRUE      phylum
```

FR Taxa that are more similar to *C. lupus* than to *H. sapiens*

```
## Key: <taxon>
##
##          taxon l2fc_Hsap l2fc_Clup      similarity
##          <char>      <num>      <num>      <char>
## 1: Bacteria;Actinobacteria -4.293324 -2.0459453 Closer to C. lupus
## 2: Bacteria;Bacteroidetes -5.265124 0.3506643 Closer to C. lupus
```


Class level

Barplot of abundances



Number of Significantly Different Taxa Among *FR*, *H. sapiens* and *C. lupus*

taxon_level	comparison	NA	FALSE	TRUE
class	FR_VS_Canis_lupus	1	3	19
class	FR_VS_Homo_sapiens	1	8	14
class	Homo_sapiens_VS_Canis_lupus	1	8	14

L2FC of Taxa in *FR* vs *H. sapiens* and in *FR* vs *C. lupus*



FR Taxa that are more similar to *H. sapiens* than to *C. lupus*

Key: <taxon>

##		taxon	baseMean	log2FoldChange
##		<char>	<num>	<num>
## 1:	Bacteria;Actinobacteria;Actinobacteria		1.856154e+04	-3.501455
## 2:	Bacteria;Actinobacteria;Coriobacteriia		3.619131e+03	-2.196830
## 3:	Bacteria;Bacteroidetes;Bacteroidia		6.397744e+04	-3.538740
## 4:	Bacteria;Candidate;Melainabacteria;unassigned		2.748924e+02	1.157327
## 5:	Bacteria;Cyanobacteria;Gloeobacteria		7.405288e-01	2.230656
## 6:	Bacteria;Cyanobacteria;unassigned		0.000000e+00	0.000000
## 7:	Bacteria;Deferribacteres;Deferribacteres		1.863456e+01	0.000000
## 8:	Bacteria;Firmicutes;Bacilli		1.758777e+07	-1.339274
## 9:	Bacteria;Firmicutes;Clostridia		6.608079e+05	-1.958588
## 10:	Bacteria;Firmicutes;Erysipelotrichia		2.415838e+03	1.207011
## 11:	Bacteria;Firmicutes;Negativicutes		1.320402e+05	-2.425224
## 12:	Bacteria;Firmicutes;Tissierellia		4.077513e+00	2.200690
## 13:	Bacteria;Firmicutes;unassigned		4.066474e+00	4.687583
## 14:	Bacteria;Fusobacteria;Fusobacteriia		8.648709e+03	-2.767781
## 15:	Bacteria;Lentisphaerae;Lentisphaeria		1.914270e+01	6.922587
## 16:	Bacteria;Proteobacteria;Alphaproteobacteria		4.904781e+02	-3.969654
## 17:	Bacteria;Proteobacteria;Betaproteobacteria		3.157761e+03	-2.687432
## 18:	Bacteria;Proteobacteria;Deltaproteobacteria		1.118057e+02	-2.098749
## 19:	Bacteria;Proteobacteria;Epsilonproteobacteria		3.826912e+01	0.000000
## 20:	Bacteria;Proteobacteria;Gammaproteobacteria		2.698810e+06	-1.764729
## 21:	Bacteria;Synergistetes;Synergistia		1.249814e+01	6.307887
## 22:	Bacteria;Tenericutes;Mollicutes		6.355334e+01	7.361589
## 23:	Bacteria;Verrucomicrobia;Verrucomicrobiae		1.418239e+03	4.543811

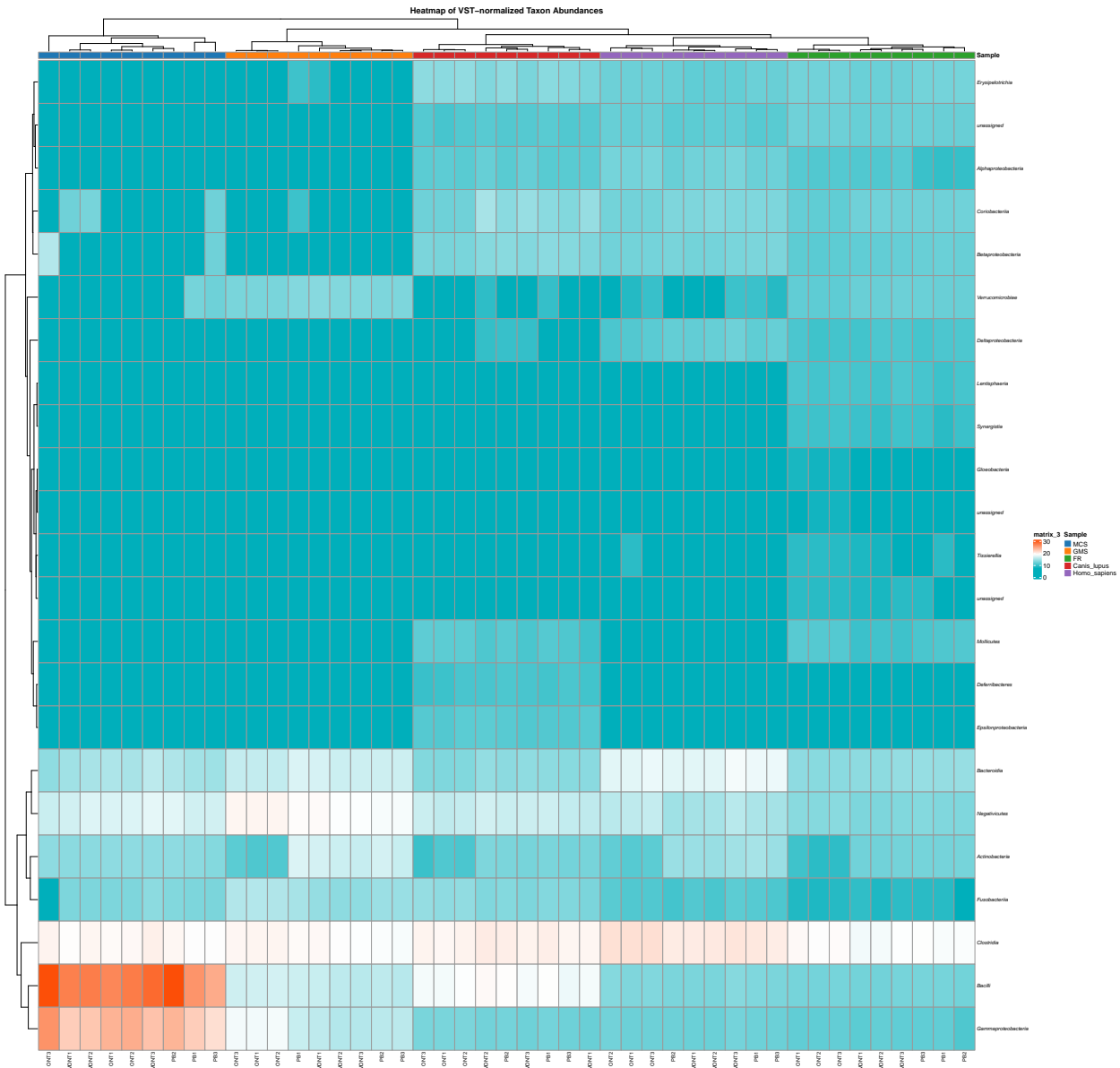
##		lfcSE	stat	pvalue	padj	taxon	baseMean	log2FoldChange
##		<num>	<num>	<num>	<num>	<char>		
## 1:	0.8501665	-4.1185518	3.812608e-05	6.989782e-05	FR_VS_Homo_sapiens			
## 2:	1.2087827	-1.8173902	6.915739e-02	9.509141e-02	FR_VS_Homo_sapiens			
## 3:	0.1866261	-18.9616575	3.538163e-80	7.783959e-79	FR_VS_Homo_sapiens			
## 4:	0.2312937	5.0037124	5.623664e-07	1.237206e-06	FR_VS_Homo_sapiens			
## 5:	4.6132298	0.4835346	6.287162e-01	6.915878e-01	FR_VS_Homo_sapiens			
## 6:	0.0000000	0.0000000	1.000000e+00		NA	FR_VS_Homo_sapiens		
## 7:	0.9819060	0.0000000	1.000000e+00	1.000000e+00	FR_VS_Homo_sapiens			
## 8:	0.2481492	-5.3970526	6.774451e-08	1.655977e-07	FR_VS_Homo_sapiens			
## 9:	0.1762004	-11.1156822	1.052432e-28	7.717834e-28	FR_VS_Homo_sapiens			
## 10:	0.9074095	1.3301728	1.834613e-01	2.242305e-01	FR_VS_Homo_sapiens			
## 11:	0.1902976	-12.7443749	3.350655e-37	3.685721e-36	FR_VS_Homo_sapiens			
## 12:	3.2607328	0.6749066	4.997351e-01	5.786406e-01	FR_VS_Homo_sapiens			
## 13:	2.8628705	1.6373716	1.015528e-01	1.314213e-01	FR_VS_Homo_sapiens			
## 14:	0.4782995	-5.7867102	7.177825e-09	1.973902e-08	FR_VS_Homo_sapiens			
## 15:	0.6984313	9.9116223	3.705793e-23	1.630549e-22	FR_VS_Homo_sapiens			
## 16:	0.3627879	-10.9420794	7.251726e-28	3.988449e-27	FR_VS_Homo_sapiens			
## 17:	1.1411767	-2.3549658	1.852441e-02	2.910979e-02	FR_VS_Homo_sapiens			
## 18:	1.0691947	-1.9629252	4.965486e-02	7.282713e-02	FR_VS_Homo_sapiens			
## 19:	0.9762162	0.0000000	1.000000e+00	1.000000e+00	FR_VS_Homo_sapiens			
## 20:	0.4228639	-4.1732780	3.002482e-05	6.004965e-05	FR_VS_Homo_sapiens			
## 21:	0.7161174	8.8084539	1.268838e-18	3.987776e-18	FR_VS_Homo_sapiens			
## 22:	0.7497007	9.8193698	9.292258e-23	3.407161e-22	FR_VS_Homo_sapiens			
## 23:	1.3862029	3.2778829	1.045888e-03	1.769964e-03	FR_VS_Homo_sapiens			

##	lfcSE	stat	pvalue	padj	comparison
##	superkingdom		phylum		class
##	<char>		<char>		<char>
## 1:	Bacteria		Actinobacteria		Actinobacteria
## 2:	Bacteria		Actinobacteria		Coriobacteriia
## 3:	Bacteria		Bacteroidetes		Bacteroidia
## 4:	Bacteria Candidatus		Melainabacteria		unassigned
## 5:	Bacteria		Cyanobacteria		Gloeobacteria
## 6:	Bacteria		Cyanobacteria		unassigned
## 7:	Bacteria		Deferribacteres		Deferribacteres
## 8:	Bacteria		Firmicutes		Bacilli
## 9:	Bacteria		Firmicutes		Clostridia
## 10:	Bacteria		Firmicutes		Erysipelotrichia
## 11:	Bacteria		Firmicutes		Negativicutes
## 12:	Bacteria		Firmicutes		Tissierellia
## 13:	Bacteria		Firmicutes		unassigned
## 14:	Bacteria		Fusobacteria		Fusobacteriia
## 15:	Bacteria		Lentisphaerae		Lentisphaeria
## 16:	Bacteria		Proteobacteria		Alphaproteobacteria
## 17:	Bacteria		Proteobacteria		Betaproteobacteria
## 18:	Bacteria		Proteobacteria		Deltaproteobacteria
## 19:	Bacteria		Proteobacteria		Epsilonproteobacteria
## 20:	Bacteria		Proteobacteria		Gammaproteobacteria
## 21:	Bacteria		Synergistetes		Synergistia
## 22:	Bacteria		Tenericutes		Mollicutes
## 23:	Bacteria		Verrucomicrobia		Verrucomicrobiae
##	superkingdom		phylum		class
##	is.significant	taxon_level			
##	<lgcl>	<char>			
## 1:	TRUE	class			
## 2:	FALSE	class			
## 3:	TRUE	class			
## 4:	TRUE	class			
## 5:	FALSE	class			
## 6:	NA	class			
## 7:	FALSE	class			
## 8:	TRUE	class			
## 9:	TRUE	class			
## 10:	FALSE	class			
## 11:	TRUE	class			
## 12:	FALSE	class			
## 13:	FALSE	class			
## 14:	TRUE	class			
## 15:	TRUE	class			
## 16:	TRUE	class			
## 17:	TRUE	class			
## 18:	FALSE	class			
## 19:	FALSE	class			
## 20:	TRUE	class			
## 21:	TRUE	class			
## 22:	TRUE	class			
## 23:	TRUE	class			
##	is.significant	taxon_level			

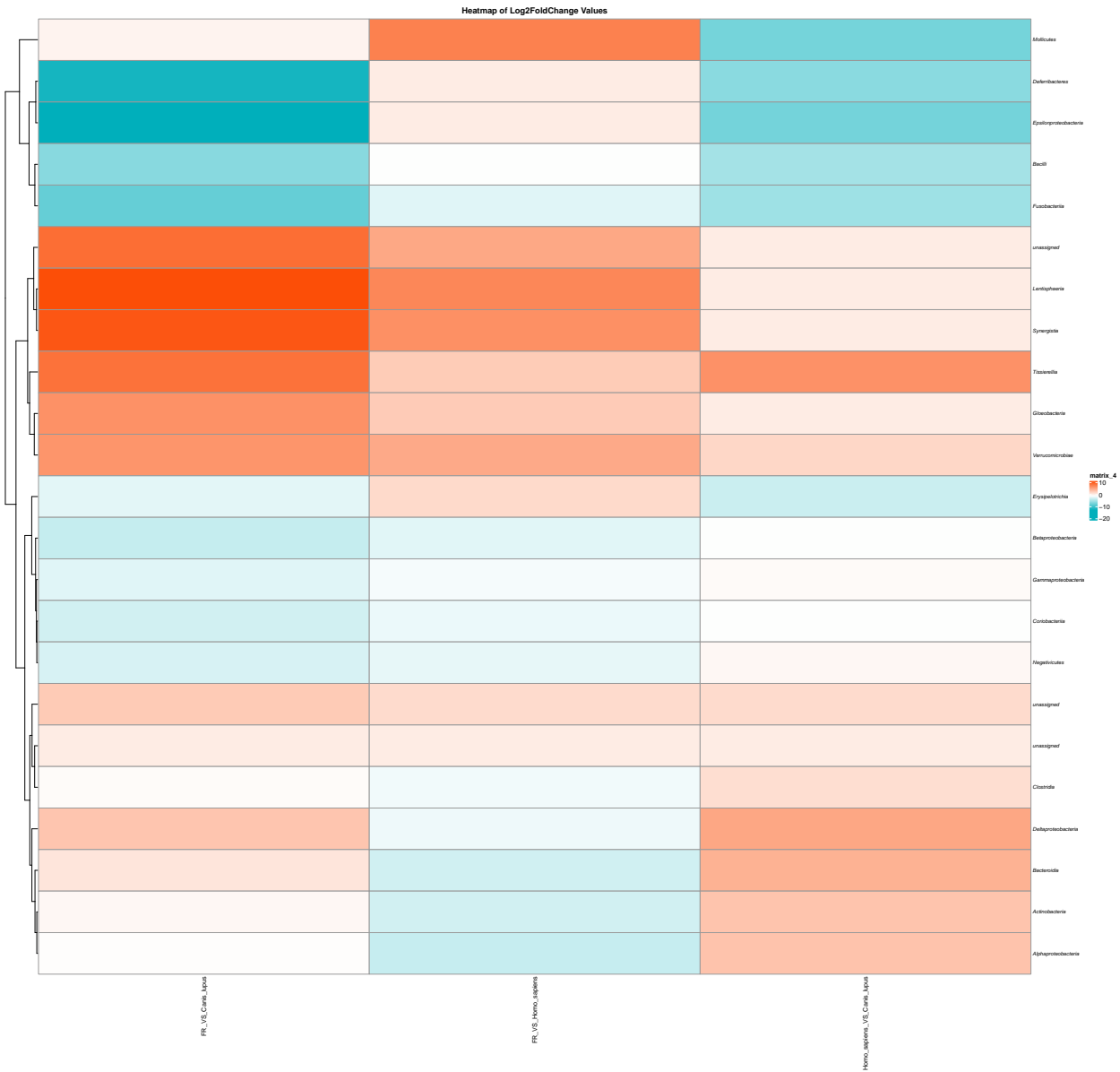
FR Taxa that are more similar to *C. lupus* than to *H. sapiens*

```
## Key: <taxon>
##
##          taxon  l2fc_Hsap  l2fc_Clup
##          <char>    <num>    <num>
## 1:      Bacteria;Actinobacteria;Actinobacteria -3.501455 -0.7919817
## 2:      Bacteria;Bacteroidetes;Bacteroidia -3.538740  0.4520178
## 3:      Bacteria;Firmicutes;Clostridia -1.958588 -1.0384828
## 4: Bacteria;Proteobacteria;Alphaproteobacteria -3.969654 -1.2189722
## 5:      Bacteria;Tenericutes;Mollicutes  7.361589 -0.5345939
##
##          similarity
##          <char>
## 1: Closer to C. lupus
## 2: Closer to C. lupus
## 3: Closer to C. lupus
## 4: Closer to C. lupus
## 5: Closer to C. lupus
```

Heatmap of VST-normalized abundance values

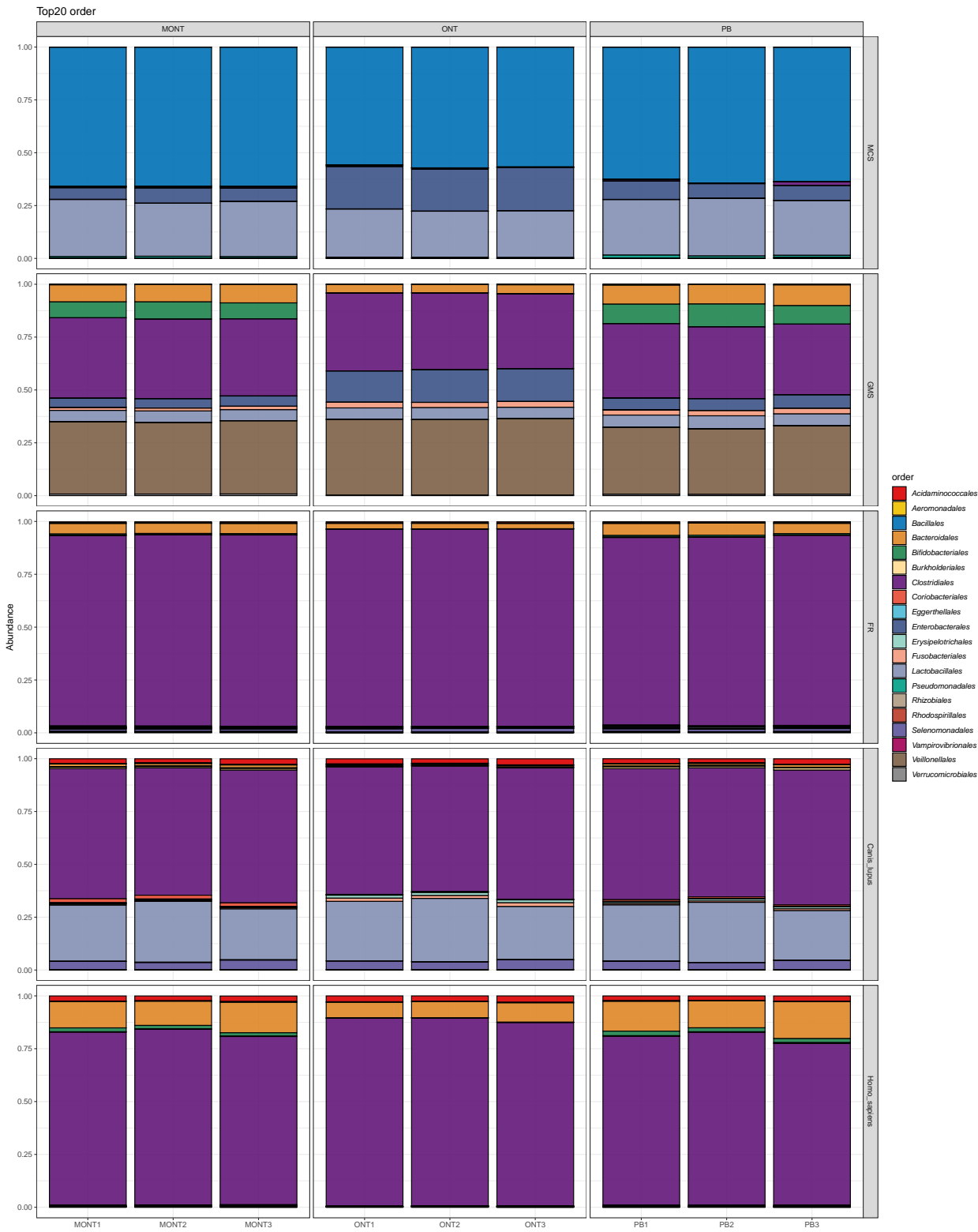


Heatmap of Log2 FC values



Order level

Barplot of abundances



Number of Significantly Different Taxa Among *FR*, *H. sapiens* and *C. lupus*

taxon_level	comparison	NA	FALSE	TRUE
order	FR_VS_Canis_lupus	4	15	25
order	FR_VS_Homo_sapiens	10	14	20
order	Homo_sapiens_VS_Canis_lupus	4	22	18

L2FC of Taxa in *FR* vs *H. sapiens* and in *FR* vs *C. lupus*



FR Taxa that are more similar to *H. sapiens* than to *C. lupus*

```
## Key: <taxon>
##
##
## 1:      Bacteria;Actinobacteria;Actinobacteria;Bifidobacteriales
## 2:      Bacteria;Actinobacteria;Actinobacteria;Corynebacteriales
## 3:      Bacteria;Actinobacteria;Actinobacteria;Micrococcales
## 4:      Bacteria;Actinobacteria;Actinobacteria;Propionibacteriales
## 5:      Bacteria;Actinobacteria;Actinobacteria;Streptomycetales
## 6:      Bacteria;Actinobacteria;Coriobacteriia;Coriobacteriales
## 7:      Bacteria;Actinobacteria;Coriobacteriia;Eggerthellales
## 8:      Bacteria;Bacteroidetes;Bacteroidia;Bacteroidales
## 9: Bacteria;Candidatus Melainabacteria;unassigned;Vampirovibrionales
## 10:     Bacteria;Cyanobacteria;Gloeobacteria;Gloeobacterales
## 11:     Bacteria;Cyanobacteria;unassigned;Oscillatoriales
## 12:     Bacteria;Deferribacteres;Deferribacteres;Deferribacterales
## 13:     Bacteria;Firmicutes;Bacilli;Bacillales
## 14:     Bacteria;Firmicutes;Bacilli;Lactobacillales
## 15:     Bacteria;Firmicutes;Clostridia;Clostridiales
## 16:     Bacteria;Firmicutes;Clostridia;Thermoanaerobacteriales
## 17:     Bacteria;Firmicutes;Erysipelotrichia;Erysipelotrichales
## 18:     Bacteria;Firmicutes;Negativicutes;Acidaminococcales
## 19:     Bacteria;Firmicutes;Negativicutes;Selenomonadales
## 20:     Bacteria;Firmicutes;Negativicutes;Veillonellales
## 21:     Bacteria;Firmicutes;Tissierellia;Tissierellales
## 22:     Bacteria;Firmicutes;unassigned;unassigned
## 23:     Bacteria;Fusobacteria;Fusobacteriia;Fusobacteriales
## 24:     Bacteria;Lentisphaerae;Lentisphaeria;Victivallales
## 25:     Bacteria;Proteobacteria;Alphaproteobacteria;Caulobacteriales
## 26:     Bacteria;Proteobacteria;Alphaproteobacteria;Kiloniellales
## 27:     Bacteria;Proteobacteria;Alphaproteobacteria;Rhizobiales
## 28:     Bacteria;Proteobacteria;Alphaproteobacteria;Rhodobacteriales
## 29:     Bacteria;Proteobacteria;Alphaproteobacteria;Rhodospirillales
## 30:     Bacteria;Proteobacteria;Alphaproteobacteria;Sneathiellales
## 31:     Bacteria;Proteobacteria;Betaproteobacteria;Burkholderiales
## 32:     Bacteria;Proteobacteria;Deltaproteobacteria;Bradymonadales
## 33:     Bacteria;Proteobacteria;Deltaproteobacteria;Desulfobacteriales
## 34:     Bacteria;Proteobacteria;Deltaproteobacteria;Desulfovibrionales
## 35:     Bacteria;Proteobacteria;Epsilonproteobacteria;Campylobacteriales
## 36:     Bacteria;Proteobacteria;Gammaproteobacteria;Aeromonadales
## 37:     Bacteria;Proteobacteria;Gammaproteobacteria;Enterobacteriales
## 38:     Bacteria;Proteobacteria;Gammaproteobacteria;Pasteurellales
## 39:     Bacteria;Proteobacteria;Gammaproteobacteria;Pseudomonadales
## 40:     Bacteria;Synergistetes;Synergistia;Synergistales
## 41:     Bacteria;Tenericutes;Mollicutes;Acholeplasmatales
## 42:     Bacteria;Tenericutes;Mollicutes;Anaeroplasmatales
## 43:     Bacteria;Tenericutes;Mollicutes;Mycoplasmatales
## 44:     Bacteria;Verrucomicrobia;Verrucomicrobiae;Verrucomicrobiales
##
##
##      baseMean log2FoldChange      lfcSE      stat      pvalue      padj
##      <num>      <num>      <num>      <num>      <num>      <num>
## 1: 3.229678e+04      -3.0753851 0.8614593  -3.5699713 3.570203e-04 7.586681e-04
## 2: 1.061474e+00      -8.2524100 4.6318215  -1.7816770 7.480191e-02      NA
```

##	3:	0.000000e+00	0.0000000	0.0000000	0.0000000	1.000000e+00	NA
##	4:	4.058017e+00	0.0000000	3.3873014	0.0000000	1.000000e+00	1.000000e+00
##	5:	0.000000e+00	0.0000000	0.0000000	0.0000000	1.000000e+00	NA
##	6:	2.113872e+03	-1.9466811	1.2813488	-1.5192437	1.287012e-01	1.823266e-01
##	7:	4.708945e+02	-1.6374036	0.4082659	-4.0106299	6.055697e-05	1.470669e-04
##	8:	8.367499e+04	-3.2655565	0.2227803	-14.6581910	1.194121e-48	4.060012e-47
##	9:	2.660920e+02	1.3335669	0.2377526	5.6090527	2.034371e-08	6.916861e-08
##	10:	6.800764e-01	2.2635116	4.6133642	0.4906423	6.236795e-01	NA
##	11:	0.000000e+00	0.0000000	0.0000000	0.0000000	1.000000e+00	NA
##	12:	1.269946e+01	0.0000000	0.9762251	0.0000000	1.000000e+00	1.000000e+00
##	13:	8.035336e+06	-1.9374308	0.3427880	-5.6519790	1.586110e-08	5.991971e-08
##	14:	3.312404e+06	-0.4338793	0.3012768	-1.4401351	1.498292e-01	2.037677e-01
##	15:	7.214142e+05	-1.7733735	0.2518596	-7.0411183	1.907031e-12	8.104880e-12
##	16:	3.291378e+00	4.5381204	3.3710993	1.3461841	1.782431e-01	2.244543e-01
##	17:	1.889327e+03	1.3859004	0.9794821	1.4149318	1.570885e-01	2.054234e-01
##	18:	1.299959e+04	-4.1581061	0.5261566	-7.9027915	2.727256e-15	1.324667e-14
##	19:	9.231209e+03	4.2508246	0.4268487	9.9586217	2.312462e-23	2.620790e-22
##	20:	2.485695e+05	-0.9250917	0.2688195	-3.4413115	5.789017e-04	1.093481e-03
##	21:	4.208268e+00	1.9614082	3.0777492	0.6372866	5.239382e-01	6.142724e-01
##	22:	4.180389e+00	4.8829928	2.6679583	1.8302358	6.721469e-02	9.936084e-02
##	23:	1.830138e+04	-2.5051784	0.5279229	-4.7453488	2.081474e-06	5.443855e-06
##	24:	2.027561e+01	7.1598468	0.6987526	10.2466114	1.225653e-24	2.083611e-23
##	25:	2.085800e+00	3.8800583	4.3427398	0.8934586	3.716116e-01	NA
##	26:	2.838024e+01	2.2708297	1.0259373	2.2134196	2.686873e-02	4.567685e-02
##	27:	2.051158e+02	-6.1051753	1.6252898	-3.7563610	1.724019e-04	3.907777e-04
##	28:	0.000000e+00	0.0000000	0.0000000	0.0000000	1.000000e+00	NA
##	29:	1.772808e+02	-4.1677348	0.8397741	-4.9629235	6.943995e-07	2.146326e-06
##	30:	1.230922e+01	-11.7900613	2.4306170	-4.8506454	1.230604e-06	3.486710e-06
##	31:	2.300296e+03	-2.4087233	1.1518549	-2.0911691	3.651291e-02	5.911613e-02
##	32:	1.741031e+00	3.6193251	4.6128778	0.7846133	4.326804e-01	NA
##	33:	3.345800e+00	4.5617105	4.3015724	1.0604751	2.889285e-01	3.508418e-01
##	34:	9.250853e+01	-2.1222956	1.1332524	-1.8727475	6.110326e-02	9.443232e-02
##	35:	2.645713e+01	0.0000000	0.9810859	0.0000000	1.000000e+00	1.000000e+00
##	36:	1.211252e+02	0.0000000	1.6150042	0.0000000	1.000000e+00	1.000000e+00
##	37:	1.788397e+06	-1.4884837	0.4924389	-3.0226767	2.505498e-03	4.483522e-03
##	38:	1.845087e+00	3.7031527	4.6128602	0.8027888	4.220968e-01	NA
##	39:	9.602877e+04	-11.5093694	1.3572807	-8.4797268	2.257234e-17	1.279099e-16
##	40:	1.315439e+01	6.5362501	0.7096586	9.2104153	3.248657e-20	2.209087e-19
##	41:	2.421184e+01	7.4165345	0.7522429	9.8592280	6.252831e-23	5.314907e-22
##	42:	2.736861e+01	0.0000000	1.2339370	0.0000000	1.000000e+00	1.000000e+00
##	43:	2.787564e+00	4.2984102	4.6127607	0.9318520	3.514130e-01	NA
##	44:	3.188192e+03	4.8703503	1.3959243	3.4889788	4.848696e-04	9.697392e-04
##		baseMean	log2FoldChange	lfcSE	stat	pvalue	padj
##		comparison	superkingdom			phylum	
##		<char>	<char>			<char>	
##	1:	FR_VS_Homo_sapiens	Bacteria			Actinobacteria	
##	2:	FR_VS_Homo_sapiens	Bacteria			Actinobacteria	
##	3:	FR_VS_Homo_sapiens	Bacteria			Actinobacteria	
##	4:	FR_VS_Homo_sapiens	Bacteria			Actinobacteria	
##	5:	FR_VS_Homo_sapiens	Bacteria			Actinobacteria	
##	6:	FR_VS_Homo_sapiens	Bacteria			Actinobacteria	
##	7:	FR_VS_Homo_sapiens	Bacteria			Actinobacteria	
##	8:	FR_VS_Homo_sapiens	Bacteria			Bacteroidetes	
##	9:	FR_VS_Homo_sapiens	Bacteria	Candidatus		Melainabacteria	

## 10:	FR_VS_Homo_sapiens	Bacteria	Cyanobacteria	
## 11:	FR_VS_Homo_sapiens	Bacteria	Cyanobacteria	
## 12:	FR_VS_Homo_sapiens	Bacteria	Deferribacteres	
## 13:	FR_VS_Homo_sapiens	Bacteria	Firmicutes	
## 14:	FR_VS_Homo_sapiens	Bacteria	Firmicutes	
## 15:	FR_VS_Homo_sapiens	Bacteria	Firmicutes	
## 16:	FR_VS_Homo_sapiens	Bacteria	Firmicutes	
## 17:	FR_VS_Homo_sapiens	Bacteria	Firmicutes	
## 18:	FR_VS_Homo_sapiens	Bacteria	Firmicutes	
## 19:	FR_VS_Homo_sapiens	Bacteria	Firmicutes	
## 20:	FR_VS_Homo_sapiens	Bacteria	Firmicutes	
## 21:	FR_VS_Homo_sapiens	Bacteria	Firmicutes	
## 22:	FR_VS_Homo_sapiens	Bacteria	Firmicutes	
## 23:	FR_VS_Homo_sapiens	Bacteria	Fusobacteria	
## 24:	FR_VS_Homo_sapiens	Bacteria	Lentisphaerae	
## 25:	FR_VS_Homo_sapiens	Bacteria	Proteobacteria	
## 26:	FR_VS_Homo_sapiens	Bacteria	Proteobacteria	
## 27:	FR_VS_Homo_sapiens	Bacteria	Proteobacteria	
## 28:	FR_VS_Homo_sapiens	Bacteria	Proteobacteria	
## 29:	FR_VS_Homo_sapiens	Bacteria	Proteobacteria	
## 30:	FR_VS_Homo_sapiens	Bacteria	Proteobacteria	
## 31:	FR_VS_Homo_sapiens	Bacteria	Proteobacteria	
## 32:	FR_VS_Homo_sapiens	Bacteria	Proteobacteria	
## 33:	FR_VS_Homo_sapiens	Bacteria	Proteobacteria	
## 34:	FR_VS_Homo_sapiens	Bacteria	Proteobacteria	
## 35:	FR_VS_Homo_sapiens	Bacteria	Proteobacteria	
## 36:	FR_VS_Homo_sapiens	Bacteria	Proteobacteria	
## 37:	FR_VS_Homo_sapiens	Bacteria	Proteobacteria	
## 38:	FR_VS_Homo_sapiens	Bacteria	Proteobacteria	
## 39:	FR_VS_Homo_sapiens	Bacteria	Proteobacteria	
## 40:	FR_VS_Homo_sapiens	Bacteria	Synergistetes	
## 41:	FR_VS_Homo_sapiens	Bacteria	Tenericutes	
## 42:	FR_VS_Homo_sapiens	Bacteria	Tenericutes	
## 43:	FR_VS_Homo_sapiens	Bacteria	Tenericutes	
## 44:	FR_VS_Homo_sapiens	Bacteria	Verrucomicrobia	
##	comparison superkingdom		phylum	
##	class	order	is.significant	taxon_level
##	<char>	<char>	<lgcl>	<char>
## 1:	Actinobacteria	Bifidobacteriales	TRUE	order
## 2:	Actinobacteria	Corynebacteriales	NA	order
## 3:	Actinobacteria	Micrococcales	NA	order
## 4:	Actinobacteria	Propionibacteriales	FALSE	order
## 5:	Actinobacteria	Streptomycetales	NA	order
## 6:	Coriobacteriia	Coriobacteriales	FALSE	order
## 7:	Coriobacteriia	Eggerthellales	TRUE	order
## 8:	Bacteroidia	Bacteroidales	TRUE	order
## 9:	unassigned	Vampirovibrionales	TRUE	order
## 10:	Gloeobacteria	Gloeobacterales	NA	order
## 11:	unassigned	Oscillatoriales	NA	order
## 12:	Deferribacteres	Deferribacterales	FALSE	order
## 13:	Bacilli	Bacillales	TRUE	order
## 14:	Bacilli	Lactobacillales	FALSE	order
## 15:	Clostridia	Clostridiales	TRUE	order
## 16:	Clostridia	Thermoanaerobacterales	FALSE	order

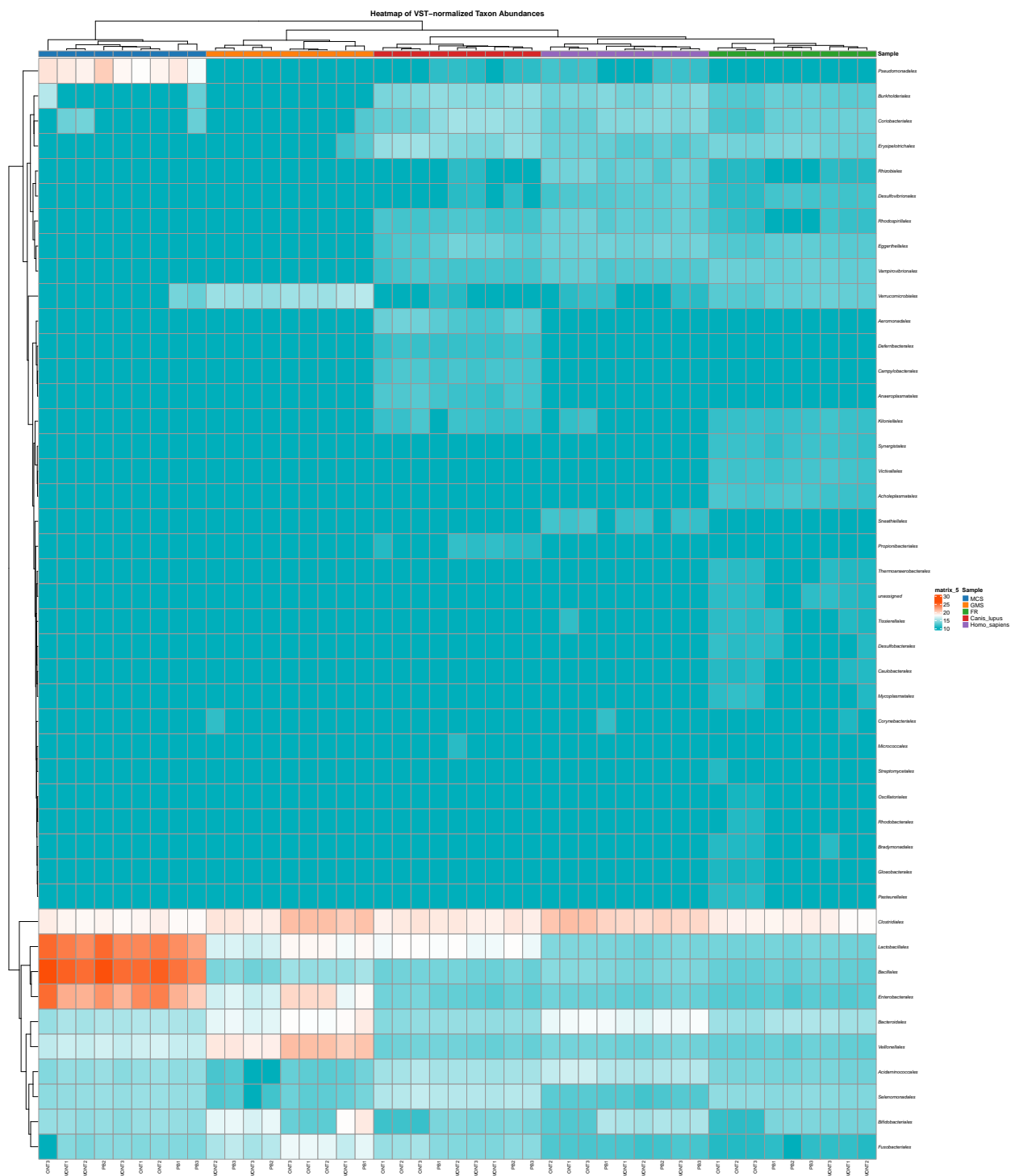
## 17:	Erysipelotrichia	Erysipelotrichales	FALSE	order
## 18:	Negativicutes	Acidaminococcales	TRUE	order
## 19:	Negativicutes	Selenomonadales	TRUE	order
## 20:	Negativicutes	Veillonellales	TRUE	order
## 21:	Tissierellia	Tissierellales	FALSE	order
## 22:	unassigned	unassigned	FALSE	order
## 23:	Fusobacteriia	Fusobacteriales	TRUE	order
## 24:	Lentisphaeria	Victivallales	TRUE	order
## 25:	Alphaproteobacteria	Caulobacterales	NA	order
## 26:	Alphaproteobacteria	Kiloniellales	TRUE	order
## 27:	Alphaproteobacteria	Rhizobiales	TRUE	order
## 28:	Alphaproteobacteria	Rhodobacterales	NA	order
## 29:	Alphaproteobacteria	Rhodospirillales	TRUE	order
## 30:	Alphaproteobacteria	Sneathiellales	TRUE	order
## 31:	Betaproteobacteria	Burkholderiales	FALSE	order
## 32:	Deltaproteobacteria	Bradymonadales	NA	order
## 33:	Deltaproteobacteria	Desulfobacterales	FALSE	order
## 34:	Deltaproteobacteria	Desulfovibrionales	FALSE	order
## 35:	Epsilonproteobacteria	Campylobacterales	FALSE	order
## 36:	Gammaproteobacteria	Aeromonadales	FALSE	order
## 37:	Gammaproteobacteria	Enterobacterales	TRUE	order
## 38:	Gammaproteobacteria	Pasteurellales	NA	order
## 39:	Gammaproteobacteria	Pseudomonadales	TRUE	order
## 40:	Synergistia	Synergistales	TRUE	order
## 41:	Mollicutes	Acholeplasmatales	TRUE	order
## 42:	Mollicutes	Anaeroplasmatales	FALSE	order
## 43:	Mollicutes	Mycoplasmatales	NA	order
## 44:	Verrucomicrobiae	Verrucomicrobiales	TRUE	order
##	class	order	is.significant	taxon_level

FR Taxa that are more similar to *C. lupus* than to *H. sapiens*

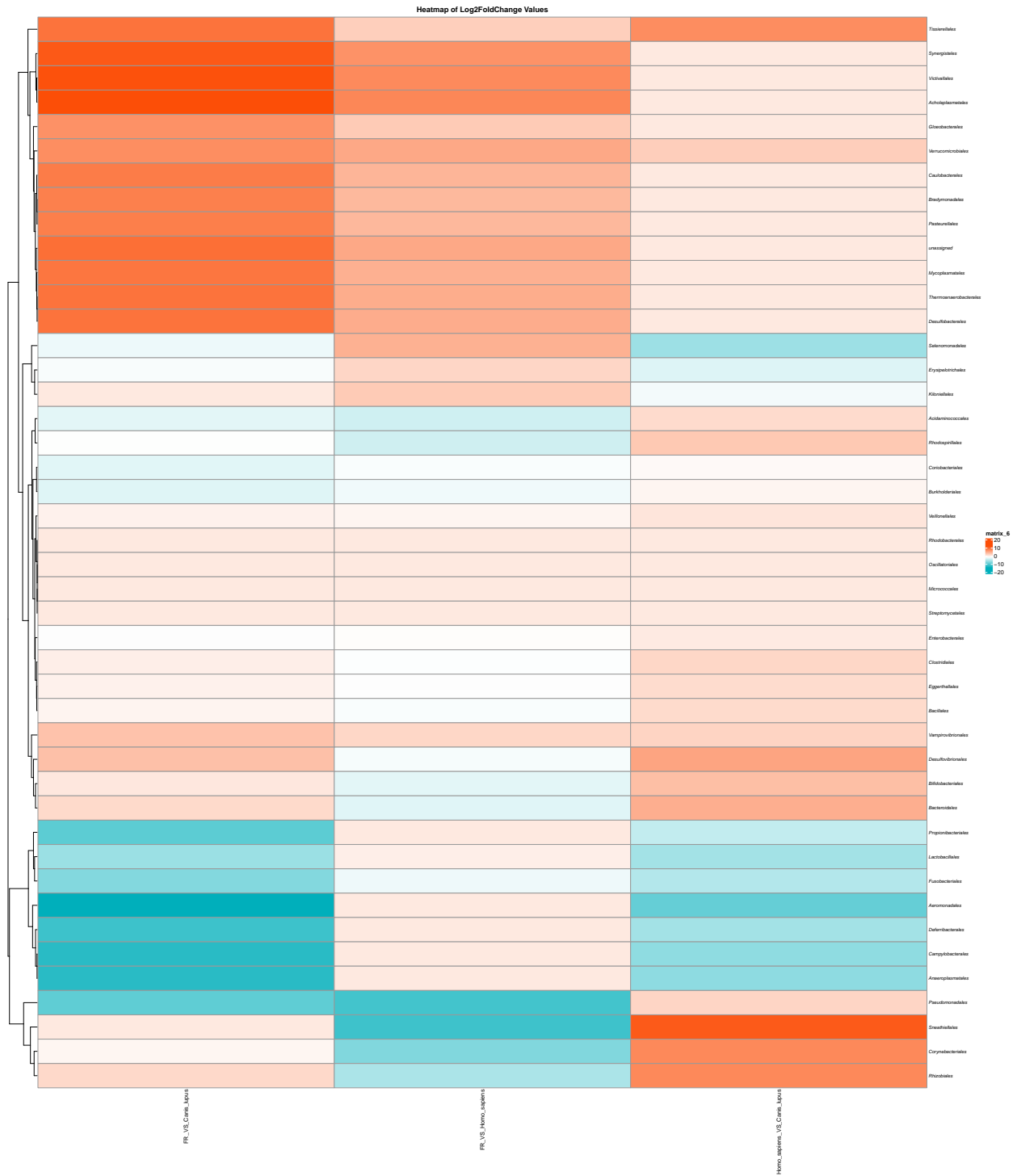
```
## Key: <taxon>
##
##                                     taxon    12fc_Hsap
##                                     <char>    <num>
## 1:  Bacteria;Actinobacteria;Actinobacteria;Bifidobacteriales -3.0753851
## 2:  Bacteria;Actinobacteria;Actinobacteria;Corynebacteriales -8.2524100
## 3:  Bacteria;Actinobacteria;Coriobacteriia;Eggerthellales -1.6374036
## 4:  Bacteria;Bacteroidetes;Bacteroidia;Bacteroidales -3.2655565
## 5:  Bacteria;Firmicutes;Bacilli;Bacillales -1.9374308
## 6:  Bacteria;Firmicutes;Clostridia;Clostridiales -1.7733735
## 7:  Bacteria;Firmicutes;Negativicutes;Acidaminococcales -4.1581061
## 8:  Bacteria;Firmicutes;Negativicutes;Selenomonadales 4.2508246
## 9:  Bacteria;Firmicutes;Negativicutes;Veillonellales -0.9250917
## 10: Bacteria;Proteobacteria;Alphaproteobacteria;Kiloniellales 2.2708297
## 11: Bacteria;Proteobacteria;Alphaproteobacteria;Rhizobiales -6.1051753
## 12: Bacteria;Proteobacteria;Alphaproteobacteria;Rhodospirillales -4.1677348
## 13: Bacteria;Proteobacteria;Alphaproteobacteria;Sneathiellales -11.7900613
## 14: Bacteria;Proteobacteria;Gammaproteobacteria;Pseudomonadales -11.5093694
##
## 12fc_Clup    similarity
## <num>        <char>
## 1:  0.099588903 Closer to C. lupus
## 2: -0.992415346 Closer to C. lupus
```

```
## 3: -0.637767086 Closer to C. lupus
## 4:  1.152068260 Closer to C. lupus
## 5: -0.854769922 Closer to C. lupus
## 6: -0.418452621 Closer to C. lupus
## 7: -3.121647213 Closer to C. lupus
## 8: -2.559101261 Closer to C. lupus
## 9: -0.630304777 Closer to C. lupus
## 10: -0.003713217 Closer to C. lupus
## 11:  1.167712649 Closer to C. lupus
## 12: -1.724042865 Closer to C. lupus
## 13:  0.000000000 Closer to C. lupus
## 14: -10.020532457 Closer to C. lupus
```

Heatmap of VST-normalized abundance values

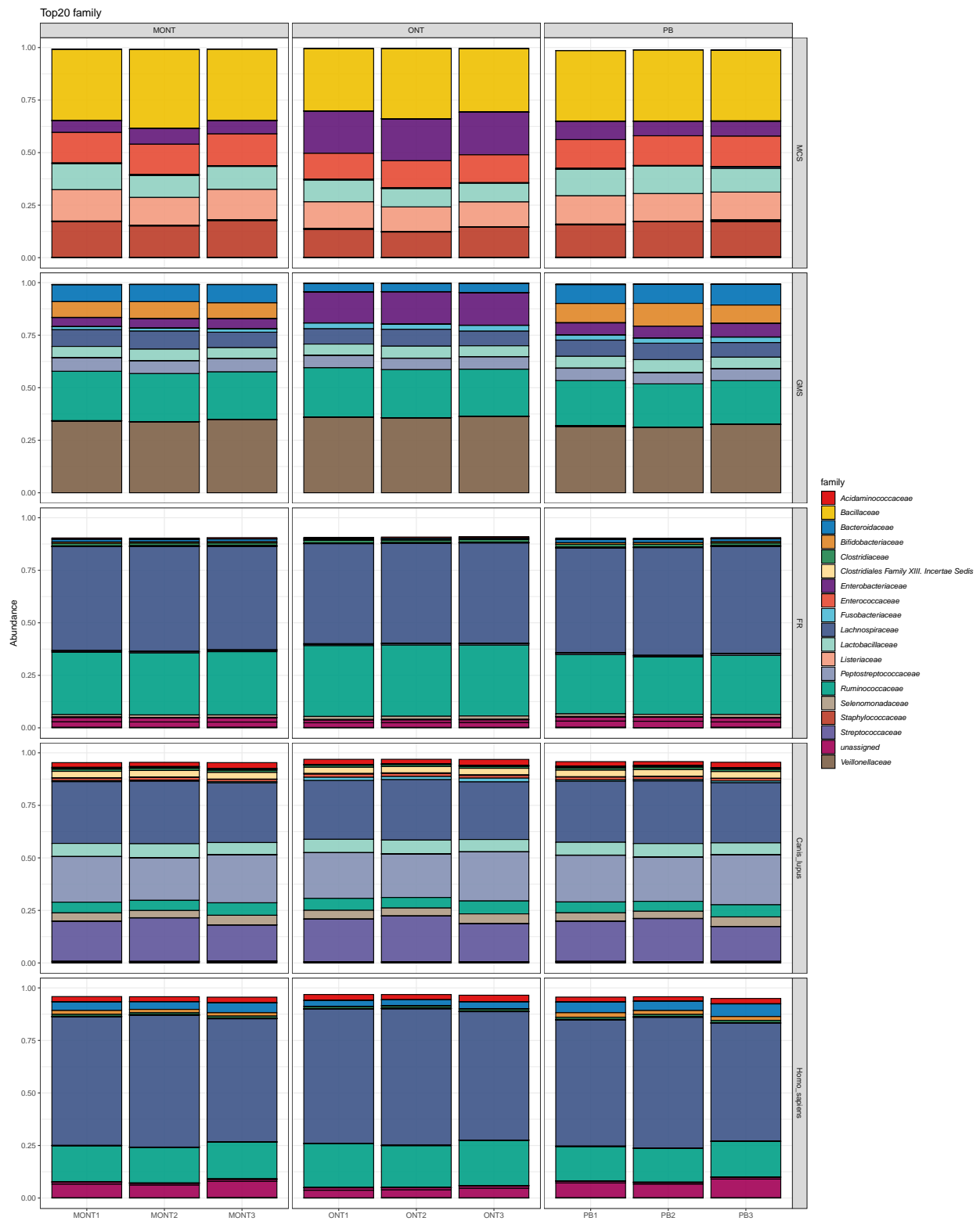


Heatmap of Log2 FC values



Family level

Barplot of abundances



Number of Significantly Different Taxa Among *FR*, *H. sapiens* and *C. lupus*

taxon_level	comparison	NA	FALSE	TRUE
family	FR_VS_Canis_lupus	7	24	53
family	FR_VS_Homo_sapiens	13	32	39
family	Homo_sapiens_VS_Canis_lupus	7	41	36

L2FC of Taxa in *FR* vs *H. sapiens* and in *FR* vs *C. lupus*



FR Taxa that are more similar to *H. sapiens* than to *C. lupus*

Key: <taxon>

##

##

1:

Bacteria;Actinobacteria;Actinobacteria;Bifidobacteriales;Bifidobacter

2:

Bacteria;Actinobacteria;Actinobacteria;Corynebacteriales;Segnilipa

3:

Bacteria;Actinobacteria;Actinobacteria;Micrococcales;Cellulomona

4:

Bacteria;Actinobacteria;Actinobacteria;Propionibacteriales;Propionibacter

5:

Bacteria;Actinobacteria;Actinobacteria;Streptomycetales;Streptomyce

6:

Bacteria;Actinobacteria;Coriobacteriia;Coriobacteriales;Atopob

7:

Bacteria;Actinobacteria;Coriobacteriia;Coriobacteriales;Coriobacter

8:

Bacteria;Actinobacteria;Coriobacteriia;Eggerthellales;Eggerthel

9:

Bacteria;Bacteroidetes;Bacteroidia;Bacteroidales;Bacteroi

10:

Bacteria;Bacteroidetes;Bacteroidia;Bacteroidales;Barnesiell

11:

Bacteria;Bacteroidetes;Bacteroidia;Bacteroidales;Muribacu

12:

Bacteria;Bacteroidetes;Bacteroidia;Bacteroidales;Odoribacter

13:

Bacteria;Bacteroidetes;Bacteroidia;Bacteroidales;Porphyromona

14:

Bacteria;Bacteroidetes;Bacteroidia;Bacteroidales;Prevotell

15:

Bacteria;Bacteroidetes;Bacteroidia;Bacteroidales;Rikenell

16:

Bacteria;Bacteroidetes;Bacteroidia;Bacteroidales;Tannerell

17:

Bacteria;Bacteroidetes;Bacteroidia;Bacteroidales;unass

18:

Bacteria;Candidatus Melainabacteria;unassigned;Vampirovibrionales;unass

19:

Bacteria;Cyanobacteria;Gloeobacteria;Gloeobacterales;Gloeobacte

20:

Bacteria;Cyanobacteria;unassigned;Oscillatoriales;Oscillator

21:

Bacteria;Deferribacteres;Deferribacteres;Deferribacterales;Deferribacte

22:

Bacteria;Firmicutes;Bacilli;Bacillales;Bacil

23:

Bacteria;Firmicutes;Bacilli;Bacillales;Lister

24:

Bacteria;Firmicutes;Bacilli;Bacillales;Paenibacil

25:

Bacteria;Firmicutes;Bacilli;Bacillales;Planococ

26:

Bacteria;Firmicutes;Bacilli;Bacillales;Staphylococ

27:

Bacteria;Firmicutes;Bacilli;Bacillales;Thermoactinomycet

28:

Bacteria;Firmicutes;Bacilli;Lactobacillales;Enterococ

29:

Bacteria;Firmicutes;Bacilli;Lactobacillales;Lactobacil

30:

Bacteria;Firmicutes;Bacilli;Lactobacillales;Streptococ

31:

Bacteria;Firmicutes;Clostridia;Clostrid

32:

Bacteria;Firmicutes;Clostridia;Clostridiales;Caldicoprobacte

33:

Bacteria;Firmicutes;Clostridia;Clostridiales;Catabacter

34:

Bacteria;Firmicutes;Clostridia;Clostridiales;Christensenell

35:

Bacteria;Firmicutes;Clostridia;Clostridiales;Clostrid

36:

Bacteria;Firmicutes;Clostridia;Clostridiales;Clostridiales Family XII. Incertae

37:

Bacteria;Firmicutes;Clostridia;Clostridiales;Clostridiales Family XIII. Incertae

38:

Bacteria;Firmicutes;Clostridia;Clostridiales;Defluviitale

39:

Bacteria;Firmicutes;Clostridia;Clostridiales;Eubacter

40:

Bacteria;Firmicutes;Clostridia;Clostridiales;Gracilibacte

41:

Bacteria;Firmicutes;Clostridia;Clostridiales;Hungateiclostrid

42:

Bacteria;Firmicutes;Clostridia;Clostridiales;Lachnospir

43:

Bacteria;Firmicutes;Clostridia;Clostridiales;Oscillospir

44:

Bacteria;Firmicutes;Clostridia;Clostridiales;Peptococ

45:

Bacteria;Firmicutes;Clostridia;Clostridiales;Peptostreptococ

46:

Bacteria;Firmicutes;Clostridia;Clostridiales;Ruminococ

47:

Bacteria;Firmicutes;Clostridia;Clostridiales;Vallitale

48:

Bacteria;Firmicutes;Clostridia;Clostridiales;unass

49:

Bacteria;Firmicutes;Clostridia;Thermoanaerobacterales;Thermoanaerobacterales Family IV. Incertae

```

## 50: Bacteria;Firmicutes;Erysipelotrichia;Erysipelotrichales;Erysipelotric
## 51: Bacteria;Firmicutes;Negativicutes;Acidaminococcales;Acidaminococ
## 52: Bacteria;Firmicutes;Negativicutes;Selenomonadales;Selenomona
## 53: Bacteria;Firmicutes;Negativicutes;Selenomonadales;Sporomu
## 54: Bacteria;Firmicutes;Negativicutes;Veillonellales;Veillonel
## 55: Bacteria;Firmicutes;Tissierellia;Tissierellales;Gottschalk
## 56: Bacteria;Firmicutes;unassigned;unassigned;unas
## 57: Bacteria;Fusobacteria;Fusobacteriia;Fusobacteriales;Fusobacter
## 58: Bacteria;Lentisphaerae;Lentisphaeria;Victival
## 59: Bacteria;Lentisphaerae;Lentisphaeria;Victivallales;Victival
## 60: Bacteria;Proteobacteria;Alphaproteobacteria;Caulobacterales;Caulobacte
## 61: Bacteria;Proteobacteria;Alphaproteobacteria;Kiloniellales;Kiloniel
## 62: Bacteria;Proteobacteria;Alphaproteobacteria;Rhizobiales;Aurantimona
## 63: Bacteria;Proteobacteria;Alphaproteobacteria;Rhizobiales;Cohaesibacte
## 64: Bacteria;Proteobacteria;Alphaproteobacteria;Rhizobiales;Methylocys
## 65: Bacteria;Proteobacteria;Alphaproteobacteria;Rhizobiales;Rhizob
## 66: Bacteria;Proteobacteria;Alphaproteobacteria;Rhodobacterales;Rhodobacte
## 67: Bacteria;Proteobacteria;Alphaproteobacteria;Rhodospirillales;Acetobacte
## 68: Bacteria;Proteobacteria;Alphaproteobacteria;Rhodospirillales;Rhodospiril
## 69: Bacteria;Proteobacteria;Alphaproteobacteria;Sneathiellales;Sneathiel
## 70: Bacteria;Proteobacteria;Betaproteobacteria;Burkholderiales;Oxalobacte
## 71: Bacteria;Proteobacteria;Betaproteobacteria;Burkholderiales;Sutterel
## 72: Bacteria;Proteobacteria;Deltaproteobacteria;Bradymonadales;unas
## 73: Bacteria;Proteobacteria;Deltaproteobacteria;Desulfobacterales;Desulfobacte
## 74: Bacteria;Proteobacteria;Deltaproteobacteria;Desulfovibrionales;Desulfovibri
## 75: Bacteria;Proteobacteria;Epsilonproteobacteria;Campylobacterales;Campylobacte
## 76: Bacteria;Proteobacteria;Gammaproteobacteria;Aeromonadales;Succinivibri
## 77: Bacteria;Proteobacteria;Gammaproteobacteria;Enterobacterales;Enterobacter
## 78: Bacteria;Proteobacteria;Gammaproteobacteria;Pasteurellales;Pasteurel
## 79: Bacteria;Proteobacteria;Gammaproteobacteria;Pseudomonadales;Pseudomona
## 80: Bacteria;Synergistetes;Synergistia;Synergistales;Synergis
## 81: Bacteria;Tenericutes;Mollicutes;Acholeplasmatales;Acholeplasma
## 82: Bacteria;Tenericutes;Mollicutes;Anaeroplasmatales;Anaeroplasma
## 83: Bacteria;Tenericutes;Mollicutes;Mycoplasmatales;Mycoplasma
## 84: Bacteria;Verrucomicrobia;Verrucomicrobiae;Verrucomicrobiales;Akkermans

```

	baseMean	log2FoldChange	lfcSE	stat	pvalue
	<num>	<num>	<num>	<num>	<num>
## 1:	1.133971e+05	-3.18589264	0.8818827	-3.61260378	3.031377e-04
## 2:	6.141647e-01	-8.25057797	4.6310595	-1.78157459	7.481863e-02
## 3:	0.000000e+00	0.00000000	0.0000000	0.00000000	1.000000e+00
## 4:	3.827969e+00	0.00000000	3.4954475	0.00000000	1.000000e+00
## 5:	0.000000e+00	0.00000000	0.0000000	0.00000000	1.000000e+00
## 6:	5.794307e-01	0.00000000	4.6624318	0.00000000	1.000000e+00
## 7:	1.824839e+03	-1.95993580	1.2624451	-1.55249191	1.205446e-01
## 8:	3.186162e+02	-1.61006024	0.3983907	-4.04141046	5.313067e-05
## 9:	1.862034e+05	-3.54103275	0.2781649	-12.72997652	4.029603e-37
## 10:	1.037944e+03	-5.36391167	1.4966973	-3.58383209	3.385898e-04
## 11:	3.668848e+00	0.00000000	4.6624318	0.00000000	1.000000e+00
## 12:	2.521847e+02	-0.54466597	0.8813209	-0.61801099	5.365681e-01
## 13:	8.976827e-02	0.23068634	4.6159070	0.04997639	9.601412e-01
## 14:	1.040171e+02	0.00000000	0.9987375	0.00000000	1.000000e+00
## 15:	1.420076e+03	-3.70157092	1.0619997	-3.48547274	4.912683e-04
## 16:	2.798970e+02	11.13367112	0.7186069	15.49340891	3.843586e-54

## 17:	1.211658e+04	-3.16099584	0.6546050	-4.82885981	1.373170e-06
## 18:	1.590795e+02	1.51777879	0.1954617	7.76509705	8.158273e-15
## 19:	3.738179e-01	2.28753940	4.6133694	0.49585004	6.200002e-01
## 20:	0.000000e+00	0.00000000	0.0000000	0.00000000	1.000000e+00
## 21:	1.329518e+01	0.00000000	0.9983303	0.00000000	1.000000e+00
## 22:	3.268590e+06	-1.95135708	0.4245426	-4.59637566	4.299033e-06
## 23:	1.294832e+06	-2.02718875	0.5002815	-4.05209621	5.076078e-05
## 24:	3.512657e+02	3.57211555	2.4004736	1.48808780	1.367277e-01
## 25:	0.000000e+00	0.00000000	0.0000000	0.00000000	1.000000e+00
## 26:	1.495687e+06	-1.79277594	0.4931804	-3.63513219	2.778381e-04
## 27:	3.930944e+03	-1.70813050	0.2939665	-5.81062949	6.223837e-09
## 28:	1.366750e+06	-1.87501105	0.4000356	-4.68711019	2.770898e-06
## 29:	1.227250e+06	0.59316034	0.3061796	1.93729556	5.270922e-02
## 30:	4.022596e+04	-0.69137551	0.3619420	-1.91018307	5.610965e-02
## 31:	3.991872e+02	-0.04839687	0.1418006	-0.34130219	7.328761e-01
## 32:	1.279799e+00	4.06268775	3.7696531	1.07773517	2.811520e-01
## 33:	6.527128e+01	1.85146716	0.1691899	10.94313043	7.168128e-28
## 34:	6.316268e+02	2.82264201	0.1483739	19.02384846	1.082392e-80
## 35:	3.818700e+03	-1.38694179	1.1249203	-1.23292453	2.176039e-01
## 36:	0.000000e+00	0.00000000	0.0000000	0.00000000	1.000000e+00
## 37:	6.731752e+03	-1.28348319	0.6297253	-2.03816371	4.153356e-02
## 38:	0.000000e+00	0.00000000	0.0000000	0.00000000	1.000000e+00
## 39:	2.070861e+03	-0.23748994	1.2244882	-0.19395037	8.462147e-01
## 40:	3.328525e+00	5.44153200	1.5619840	3.48373095	4.944763e-04
## 41:	1.132966e+03	0.86323724	1.2192954	0.70798039	4.789574e-01
## 42:	4.058596e+05	-2.05932277	0.2770389	-7.43333524	1.058931e-13
## 43:	2.132248e+03	0.70106525	1.1829572	0.59263789	5.534235e-01
## 44:	1.070051e+03	4.89700930	1.3515454	3.62326646	2.909059e-04
## 45:	2.114059e+05	1.01198424	0.3007127	3.36528623	7.646429e-04
## 46:	7.078477e+05	-0.99711842	0.3021619	-3.29994793	9.670277e-04
## 47:	1.347459e+01	7.45978416	0.6938455	10.75136246	5.839264e-27
## 48:	2.865718e+03	-0.59605752	0.8566735	-0.69578147	4.865657e-01
## 49:	1.919775e+00	4.64769041	3.6713100	1.26594877	2.055314e-01
## 50:	1.809611e+03	1.50217601	0.9557124	1.57178671	1.160000e-01
## 51:	9.401138e+03	-3.98096809	0.5382226	-7.39650796	1.398124e-13
## 52:	9.190223e+03	4.44212768	0.4523229	9.82069987	9.170464e-23
## 53:	1.809659e+00	-1.08663512	4.5719972	-0.23767187	8.121356e-01
## 54:	9.930384e+05	-0.82449154	0.3265954	-2.52450463	1.158615e-02
## 55:	2.354342e+00	2.59021860	3.2547020	0.79583893	4.261257e-01
## 56:	2.427663e+00	4.98628048	2.9200591	1.70759575	8.771138e-02
## 57:	6.817712e+04	-2.33947993	0.5723452	-4.08753313	4.359844e-05
## 58:	1.010990e+01	7.04435439	0.7080606	9.94880143	2.552387e-23
## 59:	1.585450e+00	4.37161008	2.9936586	1.46029011	1.442104e-01
## 60:	1.350434e+00	4.14015814	4.6127883	0.89753915	3.694313e-01
## 61:	2.111025e+01	2.84104840	0.9632044	2.94958002	3.182062e-03
## 62:	3.793431e+00	-10.88119038	3.2599726	-3.33781655	8.443948e-04
## 63:	5.076918e+01	-14.62392457	0.7587217	-19.27442528	8.807322e-83
## 64:	2.217239e+01	-13.42759800	1.9267430	-6.96906527	3.190537e-12
## 65:	2.891852e+01	-3.84765416	1.8778623	-2.04895441	4.046657e-02
## 66:	0.000000e+00	0.00000000	0.0000000	0.00000000	1.000000e+00
## 67:	2.049476e+00	0.00000000	4.6624318	0.00000000	1.000000e+00
## 68:	1.034317e+02	-3.94447406	0.8424186	-4.68232096	2.836449e-06
## 69:	6.186280e+00	-11.58654324	2.5647476	-4.51761542	6.253994e-06
## 70:	5.825388e+00	6.24902631	1.3718511	4.55517835	5.234115e-06

## 71:	1.421475e+03	-2.53583681	0.8470858	-2.99360092	2.757063e-03	
## 72:	9.274368e-01	3.59809883	4.6128898	0.78000971	4.353852e-01	
## 73:	1.962718e+00	4.67954462	4.6117749	1.01469494	3.102513e-01	
## 74:	5.497750e+01	-2.12537696	1.1379531	-1.86771931	6.180120e-02	
## 75:	2.765615e+01	0.00000000	1.0001848	0.00000000	1.000000e+00	
## 76:	1.328249e+02	0.00000000	1.6488569	0.00000000	1.000000e+00	
## 77:	1.539807e+06	-1.34001451	0.5062300	-2.64704673	8.119813e-03	
## 78:	1.044846e+00	3.77010852	4.6128534	0.81730508	4.137541e-01	
## 79:	7.378100e+04	-11.32169890	1.3503993	-8.38396368	5.117459e-17	
## 80:	7.613150e+00	6.63520165	1.3226691	5.01652416	5.261466e-07	
## 81:	1.359747e+01	7.47188117	0.7455434	10.02206083	1.219335e-23	
## 82:	2.946971e+01	0.00000000	1.5402324	0.00000000	1.000000e+00	
## 83:	1.730311e+00	4.49776393	4.6127395	0.97507434	3.295234e-01	
## 84:	1.267289e+04	5.08707677	1.4320622	3.55227351	3.819176e-04	
##	baseMean	log2FoldChange	lfcSE	stat	pvalue	
##	padj	comparison	superkingdom			phylum
##	<num>	<char>	<char>			<char>
## 1:	7.686707e-04	FR_VS_Homo_sapiens	Bacteria			Actinobacteria
## 2:	NA	FR_VS_Homo_sapiens	Bacteria			Actinobacteria
## 3:	NA	FR_VS_Homo_sapiens	Bacteria			Actinobacteria
## 4:	1.000000e+00	FR_VS_Homo_sapiens	Bacteria			Actinobacteria
## 5:	NA	FR_VS_Homo_sapiens	Bacteria			Actinobacteria
## 6:	NA	FR_VS_Homo_sapiens	Bacteria			Actinobacteria
## 7:	1.820992e-01	FR_VS_Homo_sapiens	Bacteria			Actinobacteria
## 8:	1.508911e-04	FR_VS_Homo_sapiens	Bacteria			Actinobacteria
## 9:	7.152546e-36	FR_VS_Homo_sapiens	Bacteria			Bacteroidetes
## 10:	8.289612e-04	FR_VS_Homo_sapiens	Bacteria			Bacteroidetes
## 11:	1.000000e+00	FR_VS_Homo_sapiens	Bacteria			Bacteroidetes
## 12:	6.457006e-01	FR_VS_Homo_sapiens	Bacteria			Bacteroidetes
## 13:	NA	FR_VS_Homo_sapiens	Bacteria			Bacteroidetes
## 14:	1.000000e+00	FR_VS_Homo_sapiens	Bacteria			Bacteroidetes
## 15:	1.097119e-03	FR_VS_Homo_sapiens	Bacteria			Bacteroidetes
## 16:	9.096487e-53	FR_VS_Homo_sapiens	Bacteria			Bacteroidetes
## 17:	5.735006e-06	FR_VS_Homo_sapiens	Bacteria			Bacteroidetes
## 18:	5.265795e-14	FR_VS_Homo_sapiens	Bacteria	Candidatus		Melainabacteria
## 19:	NA	FR_VS_Homo_sapiens	Bacteria			Cyanobacteria
## 20:	NA	FR_VS_Homo_sapiens	Bacteria			Cyanobacteria
## 21:	1.000000e+00	FR_VS_Homo_sapiens	Bacteria			Deferribacteres
## 22:	1.526157e-05	FR_VS_Homo_sapiens	Bacteria			Firmicutes
## 23:	1.501673e-04	FR_VS_Homo_sapiens	Bacteria			Firmicutes
## 24:	2.022431e-01	FR_VS_Homo_sapiens	Bacteria			Firmicutes
## 25:	NA	FR_VS_Homo_sapiens	Bacteria			Firmicutes
## 26:	7.587118e-04	FR_VS_Homo_sapiens	Bacteria			Firmicutes
## 27:	2.945949e-08	FR_VS_Homo_sapiens	Bacteria			Firmicutes
## 28:	1.059936e-05	FR_VS_Homo_sapiens	Bacteria			Firmicutes
## 29:	8.910369e-02	FR_VS_Homo_sapiens	Bacteria			Firmicutes
## 30:	9.264616e-02	FR_VS_Homo_sapiens	Bacteria			Firmicutes
## 31:	8.530197e-01	FR_VS_Homo_sapiens	Bacteria			Firmicutes
## 32:	3.838806e-01	FR_VS_Homo_sapiens	Bacteria			Firmicutes
## 33:	1.017874e-26	FR_VS_Homo_sapiens	Bacteria			Firmicutes
## 34:	3.842491e-79	FR_VS_Homo_sapiens	Bacteria			Firmicutes
## 35:	3.029388e-01	FR_VS_Homo_sapiens	Bacteria			Firmicutes
## 36:	NA	FR_VS_Homo_sapiens	Bacteria			Firmicutes
## 37:	7.192398e-02	FR_VS_Homo_sapiens	Bacteria			Firmicutes

## 38:	NA	FR_VS_Homo_sapiens	Bacteria	Firmicutes
## 39:	9.536706e-01	FR_VS_Homo_sapiens	Bacteria	Firmicutes
## 40:	1.097119e-03	FR_VS_Homo_sapiens	Bacteria	Firmicutes
## 41:	5.956235e-01	FR_VS_Homo_sapiens	Bacteria	Firmicutes
## 42:	6.265340e-13	FR_VS_Homo_sapiens	Bacteria	Firmicutes
## 43:	6.548845e-01	FR_VS_Homo_sapiens	Bacteria	Firmicutes
## 44:	7.649747e-04	FR_VS_Homo_sapiens	Bacteria	Firmicutes
## 45:	1.645141e-03	FR_VS_Homo_sapiens	Bacteria	Firmicutes
## 46:	1.961685e-03	FR_VS_Homo_sapiens	Bacteria	Firmicutes
## 47:	6.909796e-26	FR_VS_Homo_sapiens	Bacteria	Firmicutes
## 48:	5.956235e-01	FR_VS_Homo_sapiens	Bacteria	Firmicutes
## 49:	2.918546e-01	FR_VS_Homo_sapiens	Bacteria	Firmicutes
## 50:	1.790435e-01	FR_VS_Homo_sapiens	Bacteria	Firmicutes
## 51:	7.635910e-13	FR_VS_Homo_sapiens	Bacteria	Firmicutes
## 52:	7.234478e-22	FR_VS_Homo_sapiens	Bacteria	Firmicutes
## 53:	9.300263e-01	FR_VS_Homo_sapiens	Bacteria	Firmicutes
## 54:	2.109273e-02	FR_VS_Homo_sapiens	Bacteria	Firmicutes
## 55:	5.402665e-01	FR_VS_Homo_sapiens	Bacteria	Firmicutes
## 56:	1.383891e-01	FR_VS_Homo_sapiens	Bacteria	Firmicutes
## 57:	1.345865e-04	FR_VS_Homo_sapiens	Bacteria	Fusobacteria
## 58:	2.265243e-22	FR_VS_Homo_sapiens	Bacteria	Lentisphaerae
## 59:	2.089579e-01	FR_VS_Homo_sapiens	Bacteria	Lentisphaerae
## 60:	4.769022e-01	FR_VS_Homo_sapiens	Bacteria	Proteobacteria
## 61:	6.106118e-03	FR_VS_Homo_sapiens	Bacteria	Proteobacteria
## 62:	1.763295e-03	FR_VS_Homo_sapiens	Bacteria	Proteobacteria
## 63:	6.253199e-81	FR_VS_Homo_sapiens	Bacteria	Proteobacteria
## 64:	1.618058e-11	FR_VS_Homo_sapiens	Bacteria	Proteobacteria
## 65:	7.182817e-02	FR_VS_Homo_sapiens	Bacteria	Proteobacteria
## 66:	NA	FR_VS_Homo_sapiens	Bacteria	Proteobacteria
## 67:	1.000000e+00	FR_VS_Homo_sapiens	Bacteria	Proteobacteria
## 68:	1.059936e-05	FR_VS_Homo_sapiens	Bacteria	Proteobacteria
## 69:	2.018334e-05	FR_VS_Homo_sapiens	Bacteria	Proteobacteria
## 70:	1.769629e-05	FR_VS_Homo_sapiens	Bacteria	Proteobacteria
## 71:	5.437541e-03	FR_VS_Homo_sapiens	Bacteria	Proteobacteria
## 72:	NA	FR_VS_Homo_sapiens	Bacteria	Proteobacteria
## 73:	4.156196e-01	FR_VS_Homo_sapiens	Bacteria	Proteobacteria
## 74:	9.972467e-02	FR_VS_Homo_sapiens	Bacteria	Proteobacteria
## 75:	1.000000e+00	FR_VS_Homo_sapiens	Bacteria	Proteobacteria
## 76:	1.000000e+00	FR_VS_Homo_sapiens	Bacteria	Proteobacteria
## 77:	1.517123e-02	FR_VS_Homo_sapiens	Bacteria	Proteobacteria
## 78:	NA	FR_VS_Homo_sapiens	Bacteria	Proteobacteria
## 79:	3.633396e-16	FR_VS_Homo_sapiens	Bacteria	Proteobacteria
## 80:	2.334776e-06	FR_VS_Homo_sapiens	Bacteria	Synergistetes
## 81:	1.236754e-22	FR_VS_Homo_sapiens	Bacteria	Tenericutes
## 82:	1.000000e+00	FR_VS_Homo_sapiens	Bacteria	Tenericutes
## 83:	4.332622e-01	FR_VS_Homo_sapiens	Bacteria	Tenericutes
## 84:	9.038718e-04	FR_VS_Homo_sapiens	Bacteria	Verrucomicrobia
##	padj	comparison	superkingdom	phylum
##		class		order
##		<char>		<char>
## 1:		Actinobacteria	Bifidobacteriales	
## 2:		Actinobacteria	Corynebacteriales	
## 3:		Actinobacteria	Micrococcales	
## 4:		Actinobacteria	Propionibacteriales	

## 5:	Actinobacteria	Streptomycetales
## 6:	Coriobacteriia	Coriobacteriales
## 7:	Coriobacteriia	Coriobacteriales
## 8:	Coriobacteriia	Eggerthellales
## 9:	Bacteroidia	Bacteroidales
## 10:	Bacteroidia	Bacteroidales
## 11:	Bacteroidia	Bacteroidales
## 12:	Bacteroidia	Bacteroidales
## 13:	Bacteroidia	Bacteroidales
## 14:	Bacteroidia	Bacteroidales
## 15:	Bacteroidia	Bacteroidales
## 16:	Bacteroidia	Bacteroidales
## 17:	Bacteroidia	Bacteroidales
## 18:	unassigned	Vampirovibrionales
## 19:	Gloeobacteria	Gloeobacterales
## 20:	unassigned	Oscillatoriales
## 21:	Deferribacteres	Deferribacterales
## 22:	Bacilli	Bacillales
## 23:	Bacilli	Bacillales
## 24:	Bacilli	Bacillales
## 25:	Bacilli	Bacillales
## 26:	Bacilli	Bacillales
## 27:	Bacilli	Bacillales
## 28:	Bacilli	Lactobacillales
## 29:	Bacilli	Lactobacillales
## 30:	Bacilli	Lactobacillales
## 31:	Clostridia	Clostridiales
## 32:	Clostridia	Clostridiales
## 33:	Clostridia	Clostridiales
## 34:	Clostridia	Clostridiales
## 35:	Clostridia	Clostridiales
## 36:	Clostridia	Clostridiales
## 37:	Clostridia	Clostridiales
## 38:	Clostridia	Clostridiales
## 39:	Clostridia	Clostridiales
## 40:	Clostridia	Clostridiales
## 41:	Clostridia	Clostridiales
## 42:	Clostridia	Clostridiales
## 43:	Clostridia	Clostridiales
## 44:	Clostridia	Clostridiales
## 45:	Clostridia	Clostridiales
## 46:	Clostridia	Clostridiales
## 47:	Clostridia	Clostridiales
## 48:	Clostridia	Clostridiales
## 49:	Clostridia	Thermoanaerobacterales
## 50:	Erysipelotrichia	Erysipelotrichales
## 51:	Negativicutes	Acidaminococcales
## 52:	Negativicutes	Selenomonadales
## 53:	Negativicutes	Selenomonadales
## 54:	Negativicutes	Veillonellales
## 55:	Tissierellia	Tissierellales
## 56:	unassigned	unassigned
## 57:	Fusobacteriia	Fusobacteriales
## 58:	Lentisphaeria	Victivallales

## 59:	Lentisphaeria	Victivallales
## 60:	Alphaproteobacteria	Caulobacterales
## 61:	Alphaproteobacteria	Kiloniellales
## 62:	Alphaproteobacteria	Rhizobiales
## 63:	Alphaproteobacteria	Rhizobiales
## 64:	Alphaproteobacteria	Rhizobiales
## 65:	Alphaproteobacteria	Rhizobiales
## 66:	Alphaproteobacteria	Rhodobacterales
## 67:	Alphaproteobacteria	Rhodospirillales
## 68:	Alphaproteobacteria	Rhodospirillales
## 69:	Alphaproteobacteria	Sneathiellales
## 70:	Betaproteobacteria	Burkholderiales
## 71:	Betaproteobacteria	Burkholderiales
## 72:	Deltaproteobacteria	Bradymonadales
## 73:	Deltaproteobacteria	Desulfobacterales
## 74:	Deltaproteobacteria	Desulfovibrionales
## 75:	Epsilonproteobacteria	Campylobacterales
## 76:	Gammaproteobacteria	Aeromonadales
## 77:	Gammaproteobacteria	Enterobacterales
## 78:	Gammaproteobacteria	Pasteurellales
## 79:	Gammaproteobacteria	Pseudomonadales
## 80:	Synergistia	Synergistales
## 81:	Mollicutes	Acholeplasmatales
## 82:	Mollicutes	Anaeroplasmatales
## 83:	Mollicutes	Mycoplasmatales
## 84:	Verrucomicrobiae	Verrucomicrobiales
##	class	order
##		family is.significant taxon_level
##		<char> <lgcl> <char>
## 1:	Bifidobacteriaceae	TRUE family
## 2:	Segniliparaceae	NA family
## 3:	Cellulomonadaceae	NA family
## 4:	Propionibacteriaceae	FALSE family
## 5:	Streptomycetaceae	NA family
## 6:	Atopobiaceae	NA family
## 7:	Coriobacteriaceae	FALSE family
## 8:	Eggerthellaceae	TRUE family
## 9:	Bacteroidaceae	TRUE family
## 10:	Barnesiellaceae	TRUE family
## 11:	Muribaculaceae	FALSE family
## 12:	Odoribacteraceae	FALSE family
## 13:	Porphyromonadaceae	NA family
## 14:	Prevotellaceae	FALSE family
## 15:	Rikenellaceae	TRUE family
## 16:	Tannerellaceae	TRUE family
## 17:	unassigned	TRUE family
## 18:	unassigned	TRUE family
## 19:	Gloeobacteraceae	NA family
## 20:	Oscillatoriaceae	NA family
## 21:	Deferribacteraceae	FALSE family
## 22:	Bacillaceae	TRUE family
## 23:	Listeriaceae	TRUE family
## 24:	Paenibacillaceae	FALSE family
## 25:	Planococcaceae	NA family

## 26:	Staphylococcaceae	TRUE	family
## 27:	Thermoactinomycetaceae	TRUE	family
## 28:	Enterococcaceae	TRUE	family
## 29:	Lactobacillaceae	FALSE	family
## 30:	Streptococcaceae	FALSE	family
## 31:		FALSE	family
## 32:	Caldicoprobacteraceae	FALSE	family
## 33:	Catabacteriaceae	TRUE	family
## 34:	Christensenellaceae	TRUE	family
## 35:	Clostridiaceae	FALSE	family
## 36:	Clostridiales Family XII. Incertae Sedis	NA	family
## 37:	Clostridiales Family XIII. Incertae Sedis	FALSE	family
## 38:	Defluviitaleaceae	NA	family
## 39:	Eubacteriaceae	FALSE	family
## 40:	Gracilibacteraceae	TRUE	family
## 41:	Hungateiclostridiaceae	FALSE	family
## 42:	Lachnospiraceae	TRUE	family
## 43:	Oscillospiraceae	FALSE	family
## 44:	Peptococcaceae	TRUE	family
## 45:	Peptostreptococcaceae	TRUE	family
## 46:	Ruminococcaceae	TRUE	family
## 47:	Vallitaleaceae	TRUE	family
## 48:	unassigned	FALSE	family
## 49:	Thermoanaerobacterales Family IV. Incertae Sedis	FALSE	family
## 50:	Erysipelotrichaceae	FALSE	family
## 51:	Acidaminococcaceae	TRUE	family
## 52:	Selenomonadaceae	TRUE	family
## 53:	Sporomusaceae	FALSE	family
## 54:	Veillonellaceae	TRUE	family
## 55:	Gottschalkiaceae	FALSE	family
## 56:	unassigned	FALSE	family
## 57:	Fusobacteriaceae	TRUE	family
## 58:		TRUE	family
## 59:	Victivallaceae	FALSE	family
## 60:	Caulobacteraceae	FALSE	family
## 61:	Kiloniellaceae	TRUE	family
## 62:	Aurantimonadaceae	TRUE	family
## 63:	Cohaesibacteraceae	TRUE	family
## 64:	Methylocystaceae	TRUE	family
## 65:	Rhizobiaceae	FALSE	family
## 66:	Rhodobacteraceae	NA	family
## 67:	Acetobacteraceae	FALSE	family
## 68:	Rhodospirillaceae	TRUE	family
## 69:	Sneathiellaceae	TRUE	family
## 70:	Oxalobacteraceae	TRUE	family
## 71:	Sutterellaceae	TRUE	family
## 72:	unassigned	NA	family
## 73:	Desulfobacteraceae	FALSE	family
## 74:	Desulfovibrionaceae	FALSE	family
## 75:	Campylobacteraceae	FALSE	family
## 76:	Succinivibrionaceae	FALSE	family
## 77:	Enterobacteriaceae	TRUE	family
## 78:	Pasteurellaceae	NA	family
## 79:	Pseudomonadaceae	TRUE	family

## 80:	Synergistaceae	TRUE	family
## 81:	Acholeplasmataceae	TRUE	family
## 82:	Anaeroplasmataceae	FALSE	family
## 83:	Mycoplasmataceae	FALSE	family
## 84:	Akkermansiaceae	TRUE	family
##	family is significant	taxon_level	

FR Taxa that are more similar to *C. lupus* than to *H. sapiens*

Key: <taxon>

##	taxon
##	<char>
## 1:	Bacteria;Actinobacteria;Actinobacteria;Bifidobacteriales;Bifidobacteriaceae
## 2:	Bacteria;Actinobacteria;Actinobacteria;Corynebacteriales;Segniliparaceae
## 3:	Bacteria;Actinobacteria;Coriobacteriia;Eggerthellales;Eggerthellaceae
## 4:	Bacteria;Bacteroidetes;Bacteroidia;Bacteroidales;Bacteroidaceae
## 5:	Bacteria;Bacteroidetes;Bacteroidia;Bacteroidales;Tannerellaceae
## 6:	Bacteria;Bacteroidetes;Bacteroidia;Bacteroidales;unassigned
## 7:	Bacteria;Firmicutes;Bacilli;Bacillales;Bacillaceae
## 8:	Bacteria;Firmicutes;Bacilli;Bacillales;Listeriaceae
## 9:	Bacteria;Firmicutes;Bacilli;Bacillales;Staphylococcaceae
## 10:	Bacteria;Firmicutes;Clostridia;Clostridiales;Hungateiclostridiaceae
## 11:	Bacteria;Firmicutes;Clostridia;Clostridiales;Lachnospiraceae
## 12:	Bacteria;Firmicutes;Clostridia;Clostridiales;Ruminococcaceae
## 13:	Bacteria;Firmicutes;Negativicutes;Selenomonadales;Selenomonadaceae
## 14:	Bacteria;Proteobacteria;Alphaproteobacteria;Kiloniellales;Kiloniellaceae
## 15:	Bacteria;Proteobacteria;Alphaproteobacteria;Rhizobiales;Aurantimonadaceae
## 16:	Bacteria;Proteobacteria;Alphaproteobacteria;Rhizobiales;Cohaesibacteraceae
## 17:	Bacteria;Proteobacteria;Alphaproteobacteria;Rhizobiales;Methylocystaceae
## 18:	Bacteria;Proteobacteria;Alphaproteobacteria;Rhizobiales;Rhizobiaceae
## 19:	Bacteria;Proteobacteria;Alphaproteobacteria;Rhodospirillales;Rhodospirillaceae
## 20:	Bacteria;Proteobacteria;Alphaproteobacteria;Sneathiellales;Sneathiellaceae
## 21:	Bacteria;Proteobacteria;Gammaproteobacteria;Pseudomonadales;Pseudomonadaceae
##	taxon

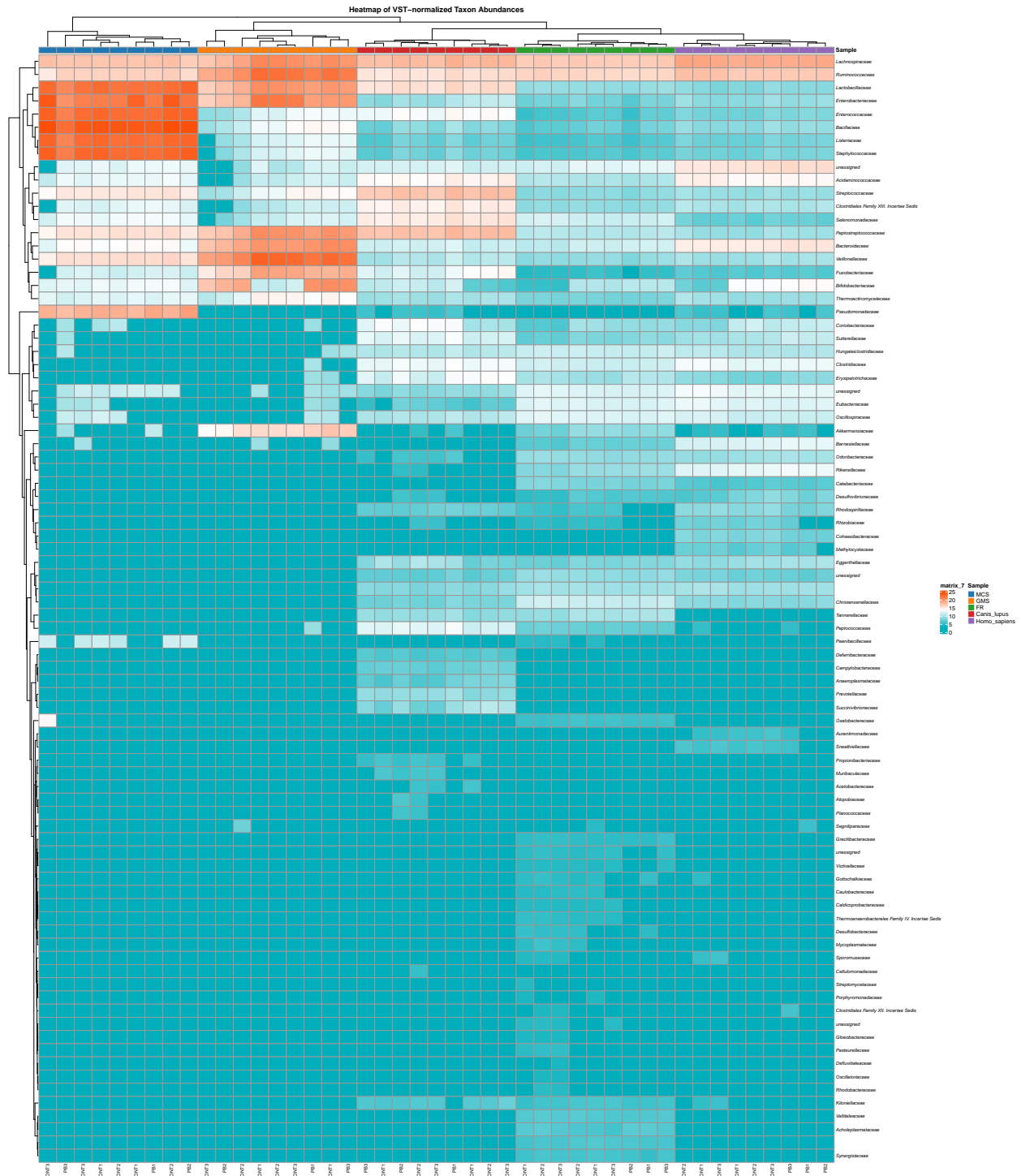
##	l2fc_Hsap	l2fc_Clup	similarity
##	<num>	<num>	<char>
## 1:	-3.1858926	-0.7536792	Closer to <i>C. lupus</i>
## 2:	-8.2505780	-1.8362190	Closer to <i>C. lupus</i>
## 3:	-1.6100602	-1.4107171	Closer to <i>C. lupus</i>
## 4:	-3.5410328	-0.2647654	Closer to <i>C. lupus</i>
## 5:	11.1336711	0.6748707	Closer to <i>C. lupus</i>
## 6:	-3.1609958	0.4687544	Closer to <i>C. lupus</i>
## 7:	-1.9513571	-1.6159604	Closer to <i>C. lupus</i>
## 8:	-2.0271888	-1.7090345	Closer to <i>C. lupus</i>
## 9:	-1.7927759	-1.5679379	Closer to <i>C. lupus</i>
## 10:	0.8632372	0.8319908	Closer to <i>C. lupus</i>
## 11:	-2.0593228	-1.0936753	Closer to <i>C. lupus</i>
## 12:	-0.9971184	0.6495755	Closer to <i>C. lupus</i>
## 13:	4.4421277	-3.4438479	Closer to <i>C. lupus</i>
## 14:	2.8410484	-0.7553305	Closer to <i>C. lupus</i>
## 15:	-10.8811904	0.0000000	Closer to <i>C. lupus</i>
## 16:	-14.6239246	0.0000000	Closer to <i>C. lupus</i>
## 17:	-13.4275980	0.0000000	Closer to <i>C. lupus</i>

```

## 18:  -3.8476542    0.6722608 Closer to C. lupus
## 19:  -3.9444741   -2.4221157 Closer to C. lupus
## 20: -11.5865432    0.0000000 Closer to C. lupus
## 21: -11.3216989 -10.8834971 Closer to C. lupus
##      12fc_Hsap    12fc_Clup          similarity

```

Heatmap of VST-normalized abundance values

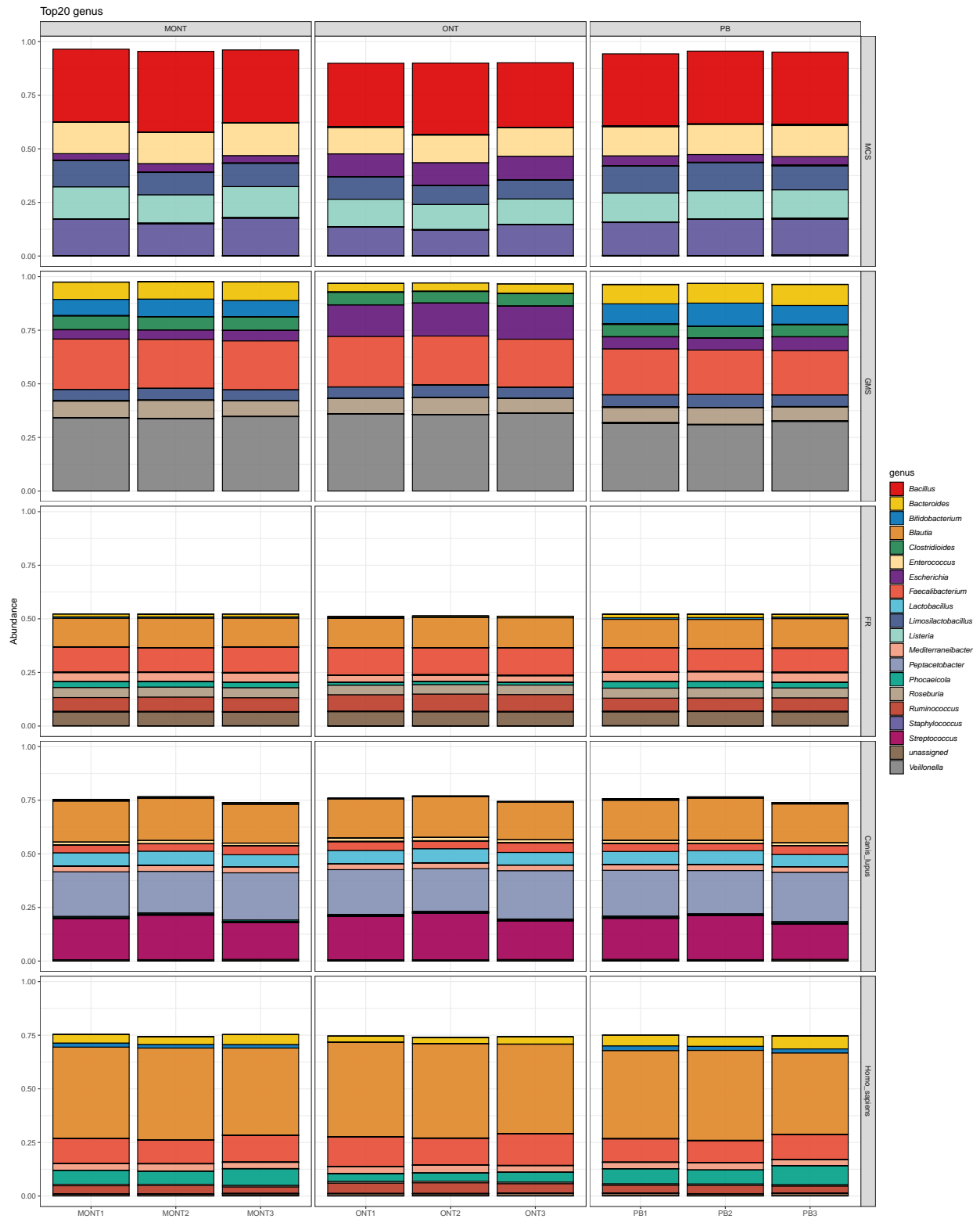


Heatmap of Log2 FC values



Genus level

Barplot of abundances



Number of Significantly Different Taxa Among *FR*, *H. sapiens* and *C. lupus*

taxon_level	comparison	NA	FALSE	TRUE
genus	FR_VS_Canis_lupus	26	97	149
genus	FR_VS_Homo_sapiens	36	103	133
genus	Homo_sapiens_VS_Canis_lupus	26	120	126

L2FC of Taxa in *FR* vs *H. sapiens* and in *FR* vs *C. lupus*



FR Taxa that are more similar to *H. sapiens* than to *C. lupus*

Key: <taxon>

##	taxon
##	<char>
## 1:	Bacteria;Actinobacteria;Actinobacteria;Bifidobacteriales;Bifidobacteriaceae;Bifidobacterium
## 2:	Bacteria;Actinobacteria;Actinobacteria;Corynebacteriales;Segniliparaceae;Segniliparus
## 3:	Bacteria;Actinobacteria;Actinobacteria;Micrococcales;Cellulomonadaceae;Oerskovia
## 4:	Bacteria;Actinobacteria;Actinobacteria;Propionibacteriales;Propionibacteriaceae;Raineyella
## 5:	Bacteria;Actinobacteria;Actinobacteria;Streptomycetales;Streptomycetaceae;Streptomyces
## ---	
## 268:	Bacteria;Synergistetes;Synergistia;Synergistales;Synergistaceae;Pyramidobacter
## 269:	Bacteria;Tenericutes;Mollicutes;Acholeplasmatales;Acholeplasmataceae;Acholeplasma
## 270:	Bacteria;Tenericutes;Mollicutes;Anaeroplasmatales;Anaeroplasmataceae;Anaeroplasma
## 271:	Bacteria;Tenericutes;Mollicutes;Mycoplasmatales;Mycoplasmataceae;Mycoplasma
## 272:	Bacteria;Verrucomicrobia;Verrucomicrobiae;Verrucomicrobiales;Akkermansiaceae;Akkermansia
##	baseMean log2FoldChange lfcSE stat pvalue padj
##	<num> <num> <num> <num> <num> <num>
## 1:	2.158054e+05 -2.931823 0.8883186 -3.300418 9.654103e-04 2.149404e-03
## 2:	5.317547e-01 -8.058796 4.6285100 -1.741121 8.166238e-02 NA
## 3:	0.000000e+00 0.000000 0.0000000 0.000000 1.000000e+00 NA
## 4:	3.126877e+00 0.000000 3.4804384 0.000000 1.000000e+00 1.000000e+00
## 5:	0.000000e+00 0.000000 0.0000000 0.000000 1.000000e+00 NA
## ---	
## 268:	1.320382e+00 4.510684 2.9781999 1.514567 1.298820e-01 2.016589e-01
## 269:	1.350284e+01 7.864941 0.7594990 10.355434 3.953887e-25 3.455990e-24
## 270:	1.985745e+01 0.000000 1.4028595 0.000000 1.000000e+00 1.000000e+00
## 271:	1.783534e+00 4.944462 4.6127280 1.071917 2.837573e-01 3.893414e-01
## 272:	2.634982e+04 5.358131 1.4255146 3.758735 1.707749e-04 4.528413e-04
##	comparison superkingdom phylum class
##	<char> <char> <char> <char>
## 1:	FR_VS_Homo_sapiens Bacteria Actinobacteria Actinobacteria
## 2:	FR_VS_Homo_sapiens Bacteria Actinobacteria Actinobacteria
## 3:	FR_VS_Homo_sapiens Bacteria Actinobacteria Actinobacteria
## 4:	FR_VS_Homo_sapiens Bacteria Actinobacteria Actinobacteria
## 5:	FR_VS_Homo_sapiens Bacteria Actinobacteria Actinobacteria
## ---	
## 268:	FR_VS_Homo_sapiens Bacteria Synergistetes Synergistia
## 269:	FR_VS_Homo_sapiens Bacteria Tenericutes Mollicutes
## 270:	FR_VS_Homo_sapiens Bacteria Tenericutes Mollicutes
## 271:	FR_VS_Homo_sapiens Bacteria Tenericutes Mollicutes
## 272:	FR_VS_Homo_sapiens Bacteria Verrucomicrobia Verrucomicrobiae
##	order family genus is.significant
##	<char> <char> <char> <lgcl>
## 1:	Bifidobacteriales Bifidobacteriaceae Bifidobacterium TRUE
## 2:	Corynebacteriales Segniliparaceae Segniliparus NA
## 3:	Micrococcales Cellulomonadaceae Oerskovia NA
## 4:	Propionibacteriales Propionibacteriaceae Raineyella FALSE
## 5:	Streptomycetales Streptomycetaceae Streptomyces NA
## ---	
## 268:	Synergistales Synergistaceae Pyramidobacter FALSE
## 269:	Acholeplasmatales Acholeplasmataceae Acholeplasma TRUE
## 270:	Anaeroplasmatales Anaeroplasmataceae Anaeroplasma FALSE
## 271:	Mycoplasmatales Mycoplasmataceae Mycoplasma FALSE


```

## 272:  Verrucomicrobiales      Akkermansiaceae      Akkermansia      TRUE
##      taxon_level
##      <char>
##  1:      genus
##  2:      genus
##  3:      genus
##  4:      genus
##  5:      genus
##  ---
## 268:      genus
## 269:      genus
## 270:      genus
## 271:      genus
## 272:      genus

```

FR Taxa that are more similar to *C. lupus* than to *H. sapiens*

```

## Key: <taxon>
##
##
## 1:      Bacteria;Actinobacteria;Actinobacteria;Bifidobacteriales;Bifidobacteriaceae;Bifidobacterium
## 2:      Bacteria;Actinobacteria;Actinobacteria;Corynebacteriales;Segniliparaceae;Segniliparus
## 3:      Bacteria;Actinobacteria;Coriobacteriia;Coriobacteriales;Coriobacteriaceae;Enorma
## 4:      Bacteria;Actinobacteria;Coriobacteriia;Eggerthellales;Eggerthellaceae;Gordonibacte
## 5:      Bacteria;Bacteroidetes;Bacteroidia;Bacteroidales;Bacteroidaceae;Bacteroides
## 6:      Bacteria;Bacteroidetes;Bacteroidia;Bacteroidales;Tannerellaceae;Parabacteroides
## 7:      Bacteria;Bacteroidetes;Bacteroidia;Bacteroidales;unassigned;Phocaeicola
## 8:      Bacteria;Firmicutes;Bacilli;Bacillales;Bacillaceae;Bacillus
## 9:      Bacteria;Firmicutes;Bacilli;Bacillales;Listeriaceae;Listeria
## 10:     Bacteria;Firmicutes;Bacilli;Bacillales;Staphylococcaceae;Staphylococcus
## 11:     Bacteria;Firmicutes;Bacilli;Lactobacillales;Lactobacillaceae;Limosilactobacillus
## 12:     Bacteria;Firmicutes;Clostridia;Clostridiales;
## 13:     Bacteria;Firmicutes;Clostridia;Clostridiales;;Intestinimonas
## 14:     Bacteria;Firmicutes;Clostridia;Clostridiales;Clostridiaceae;Alkaliphilus
## 15:     Bacteria;Firmicutes;Clostridia;Clostridiales;Clostridiaceae;Falcatimonas
## 16:     Bacteria;Firmicutes;Clostridia;Clostridiales;Clostridiaceae;Hungatella
## 17:     Bacteria;Firmicutes;Clostridia;Clostridiales;Clostridiaceae;Lactonifactor
## 18:     Bacteria;Firmicutes;Clostridia;Clostridiales;Clostridiaceae;Youngiibacter
## 19:     Bacteria;Firmicutes;Clostridia;Clostridiales;Clostridiales Family XIII. Incertae Sedis;Casaltella
## 20:     Bacteria;Firmicutes;Clostridia;Clostridiales;Eubacteriaceae;Anaerofustis
## 21:     Bacteria;Firmicutes;Clostridia;Clostridiales;Eubacteriaceae;Intestinibacillus
## 22:     Bacteria;Firmicutes;Clostridia;Clostridiales;Hungateiclostridiaceae;Anaerobacterium
## 23:     Bacteria;Firmicutes;Clostridia;Clostridiales;Hungateiclostridiaceae;Ercella
## 24:     Bacteria;Firmicutes;Clostridia;Clostridiales;Hungateiclostridiaceae;Pseudoclostridium
## 25:     Bacteria;Firmicutes;Clostridia;Clostridiales;Hungateiclostridiaceae;Ruminiclostridium
## 26:     Bacteria;Firmicutes;Clostridia;Clostridiales;Lachnospiraceae;Agathobacter
## 27:     Bacteria;Firmicutes;Clostridia;Clostridiales;Lachnospiraceae;Anaerobium
## 28:     Bacteria;Firmicutes;Clostridia;Clostridiales;Lachnospiraceae;Anaerobutyricum
## 29:     Bacteria;Firmicutes;Clostridia;Clostridiales;Lachnospiraceae;Anaerocolumna
## 30:     Bacteria;Firmicutes;Clostridia;Clostridiales;Lachnospiraceae;Anaerotaenia
## 31:     Bacteria;Firmicutes;Clostridia;Clostridiales;Lachnospiraceae;Anaerotignum
## 32:     Bacteria;Firmicutes;Clostridia;Clostridiales;Lachnospiraceae;Bariatricum
## 33:     Bacteria;Firmicutes;Clostridia;Clostridiales;Lachnospiraceae;Blautia

```

34: Bacteria;Firmicutes;Clostridia;Clostridiales;Lachnospiraceae;Coprococcus
 ## 35: Bacteria;Firmicutes;Clostridia;Clostridiales;Lachnospiraceae;Enterocloster
 ## 36: Bacteria;Firmicutes;Clostridia;Clostridiales;Lachnospiraceae;Kineothrix
 ## 37: Bacteria;Firmicutes;Clostridia;Clostridiales;Lachnospiraceae;Lachnoclostridium
 ## 38: Bacteria;Firmicutes;Clostridia;Clostridiales;Lachnospiraceae;Lachnospira
 ## 39: Bacteria;Firmicutes;Clostridia;Clostridiales;Lachnospiraceae;Lachnotalea
 ## 40: Bacteria;Firmicutes;Clostridia;Clostridiales;Lachnospiraceae;Lacrimisporium
 ## 41: Bacteria;Firmicutes;Clostridia;Clostridiales;Lachnospiraceae;Marvinbryantia
 ## 42: Bacteria;Firmicutes;Clostridia;Clostridiales;Lachnospiraceae;Mediterraneibacter
 ## 43: Bacteria;Firmicutes;Clostridia;Clostridiales;Lachnospiraceae;Sellimonas
 ## 44: Bacteria;Firmicutes;Clostridia;Clostridiales;Lachnospiraceae;Tyzzerella
 ## 45: Bacteria;Firmicutes;Clostridia;Clostridiales;Oscillospiraceae;Oscillibacter
 ## 46: Bacteria;Firmicutes;Clostridia;Clostridiales;Peptococcaceae;Dehalobacterium
 ## 47: Bacteria;Firmicutes;Clostridia;Clostridiales;Peptococcaceae;Desulfitobacterium
 ## 48: Bacteria;Firmicutes;Clostridia;Clostridiales;Peptococcaceae;Peptococcus
 ## 49: Bacteria;Firmicutes;Clostridia;Clostridiales;Peptostreptococcaceae;Clostridioides
 ## 50: Bacteria;Firmicutes;Clostridia;Clostridiales;Peptostreptococcaceae;Intestinibacter
 ## 51: Bacteria;Firmicutes;Clostridia;Clostridiales;Peptostreptococcaceae;Romboutsia
 ## 52: Bacteria;Firmicutes;Clostridia;Clostridiales;Peptostreptococcaceae;Terrisporobacter
 ## 53: Bacteria;Firmicutes;Clostridia;Clostridiales;Ruminococcaceae;Anaerotruncus
 ## 54: Bacteria;Firmicutes;Clostridia;Clostridiales;Ruminococcaceae;Drancourtella
 ## 55: Bacteria;Firmicutes;Clostridia;Clostridiales;Ruminococcaceae;Faecalibacterium
 ## 56: Bacteria;Firmicutes;Clostridia;Clostridiales;Ruminococcaceae;Flavonifractor
 ## 57: Bacteria;Firmicutes;Clostridia;Clostridiales;Ruminococcaceae;Gemmigerella
 ## 58: Bacteria;Firmicutes;Clostridia;Clostridiales;Ruminococcaceae;Negativibacillus
 ## 59: Bacteria;Firmicutes;Clostridia;Clostridiales;Ruminococcaceae;Paludicola
 ## 60: Bacteria;Firmicutes;Clostridia;Clostridiales;Ruminococcaceae;Papillibacter
 ## 61: Bacteria;Firmicutes;Clostridia;Clostridiales;Ruminococcaceae;Phocaeobacter
 ## 62: Bacteria;Firmicutes;Clostridia;Clostridiales;Ruminococcaceae;Sporobacter
 ## 63: Bacteria;Firmicutes;Clostridia;Clostridiales;unassigned;Natranaerovirga
 ## 64: Bacteria;Firmicutes;Erysipelotrichia;Erysipelotrichales;Erysipelotrichaceae;Amedibacillus
 ## 65: Bacteria;Firmicutes;Erysipelotrichia;Erysipelotrichales;Erysipelotrichaceae;Faecalicoccus
 ## 66: Bacteria;Firmicutes;Erysipelotrichia;Erysipelotrichales;Erysipelotrichaceae;Faecalitalea
 ## 67: Bacteria;Firmicutes;Erysipelotrichia;Erysipelotrichales;Erysipelotrichaceae;Longibaculum
 ## 68: Bacteria;Firmicutes;Erysipelotrichia;Erysipelotrichales;Erysipelotrichaceae;Massilimicrobiota
 ## 69: Bacteria;Firmicutes;Erysipelotrichia;Erysipelotrichales;Erysipelotrichaceae;Turcibacter
 ## 70: Bacteria;Firmicutes;Erysipelotrichia;Erysipelotrichales;Erysipelotrichaceae;unassigned
 ## 71: Bacteria;Firmicutes;Negativicutes;Acidaminococcales;Acidaminococcaceae;Phascolarctobacterium
 ## 72: Bacteria;Firmicutes;Negativicutes;Selenomonadales;Selenomonadaceae;Megamonas
 ## 73: Bacteria;Firmicutes;Negativicutes;Veillonellales;Veillonellaceae;Veillonella
 ## 74: Bacteria;Proteobacteria;Alphaproteobacteria;Kiloniellales;Kiloniellaceae;Kiloniella
 ## 75: Bacteria;Proteobacteria;Alphaproteobacteria;Rhizobiales;Aurantimonadaceae;Martellella
 ## 76: Bacteria;Proteobacteria;Alphaproteobacteria;Rhizobiales;Cohaesibacteraceae;Cohaesibacter
 ## 77: Bacteria;Proteobacteria;Alphaproteobacteria;Rhizobiales;Methylocystaceae;Terasakiella
 ## 78: Bacteria;Proteobacteria;Alphaproteobacteria;Rhizobiales;Rhizobiaceae;Gellertiella
 ## 79: Bacteria;Proteobacteria;Alphaproteobacteria;Rhizobiales;Rhizobiaceae;Liberibacter
 ## 80: Bacteria;Proteobacteria;Alphaproteobacteria;Rhodospirillales;Rhodospirillaceae;Pararhodospirillum
 ## 81: Bacteria;Proteobacteria;Alphaproteobacteria;Rhodospirillales;Rhodospirillaceae;Rhodospirillum
 ## 82: Bacteria;Proteobacteria;Alphaproteobacteria;Rhodospirillales;Rhodospirillaceae;Varunaivibrio
 ## 83: Bacteria;Proteobacteria;Alphaproteobacteria;Sneathiellales;Sneathiellaceae;Sneathiella
 ## 84: Bacteria;Proteobacteria;Betaproteobacteria;Burkholderiales;Sutterellaceae;Parasutterella
 ## 85: Bacteria;Proteobacteria;Betaproteobacteria;Burkholderiales;Sutterellaceae;Sutterella
 ## 86: Bacteria;Proteobacteria;Deltaproteobacteria;Desulfovibrionales;Desulfovibrionaceae;Lawsonella
 ## 87: Bacteria;Proteobacteria;Gammaproteobacteria;Enterobacterales;Enterobacteriaceae;Salmonella

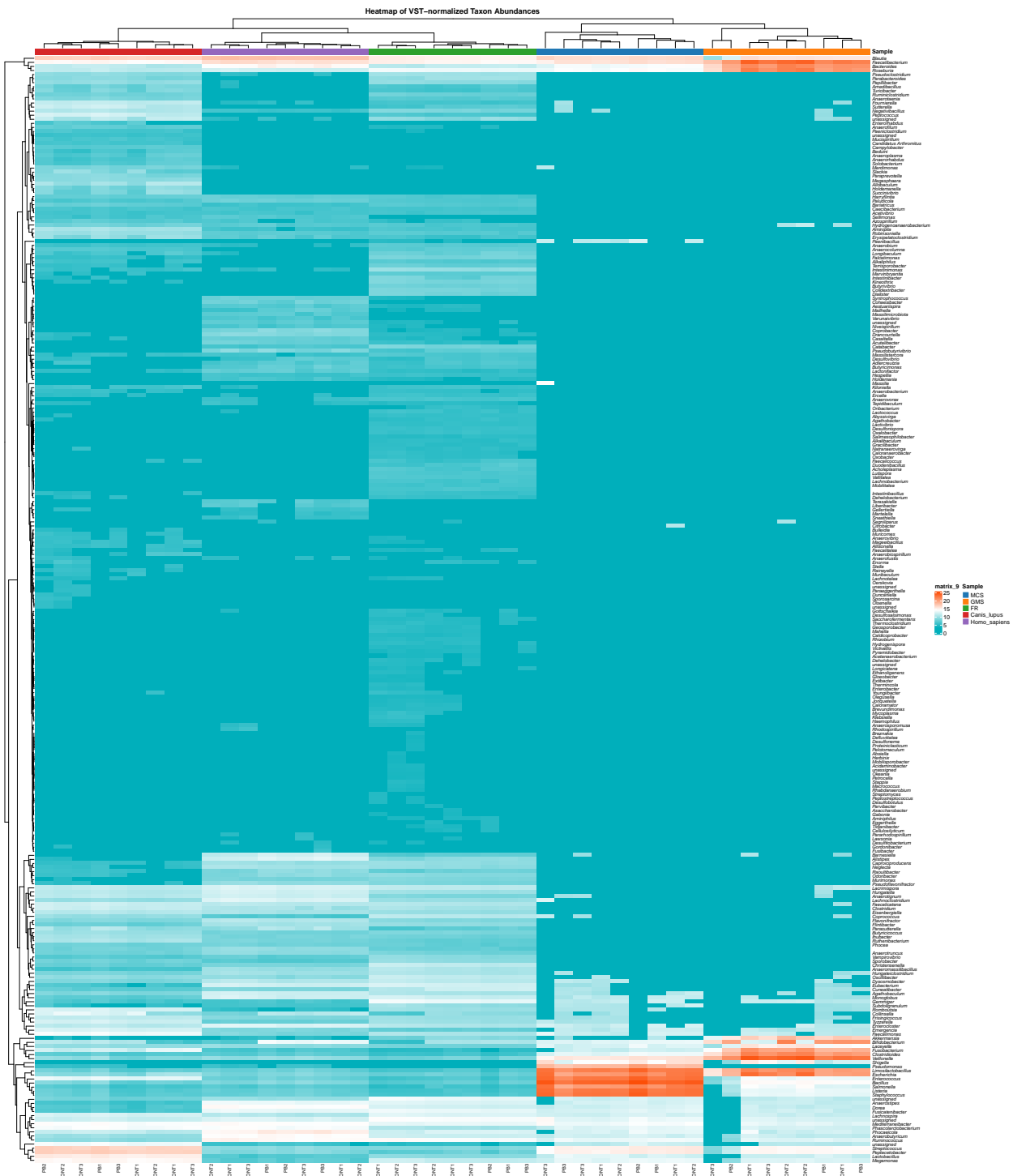
```

## 88:      Bacteria;Proteobacteria;Gammaproteobacteria;Pseudomonadales;Pseudomonadaceae;Pseudomonas
##
##      12fc_Hsap      12fc_Clup      similarity
##      <num>      <num>      <char>
##  1: -2.9318225 -0.454627127 Closer to C. lupus
##  2: -8.0587957 -1.387952409 Closer to C. lupus
##  3:  5.1131190 -0.306312660 Closer to C. lupus
##  4: -7.6836781 -1.387952409 Closer to C. lupus
##  5: -3.2001072  0.190869980 Closer to C. lupus
##  6: 11.4878700  1.070125419 Closer to C. lupus
##  7: -2.8254609  0.889562332 Closer to C. lupus
##  8: -1.6042003 -1.149675468 Closer to C. lupus
##  9: -1.6651080 -1.234861166 Closer to C. lupus
## 10: -1.4716425 -1.128541526 Closer to C. lupus
## 11: -1.5112562 -1.233924602 Closer to C. lupus
## 12: -2.3497004 -0.910541027 Closer to C. lupus
## 13:  5.7046775  4.558261109 Closer to C. lupus
## 14:  8.0428424  1.233221745 Closer to C. lupus
## 15:  9.7953783  3.567283057 Closer to C. lupus
## 16: -2.1930394 -1.002434823 Closer to C. lupus
## 17: -2.7342710  0.378601769 Closer to C. lupus
## 18:  4.9446126  1.503145570 Closer to C. lupus
## 19: -4.5545137  0.002727939 Closer to C. lupus
## 20: -2.6119944 -2.422334977 Closer to C. lupus
## 21:  6.7732397  1.905235939 Closer to C. lupus
## 22:  6.1391986  0.064747555 Closer to C. lupus
## 23:  2.6486837  1.442499070 Closer to C. lupus
## 24:  6.9659189  0.893096574 Closer to C. lupus
## 25:  9.2402641 -0.233642334 Closer to C. lupus
## 26:  6.2164367  3.737310874 Closer to C. lupus
## 27:  3.1238314  1.312422021 Closer to C. lupus
## 28: -2.4601772  2.245055579 Closer to C. lupus
## 29:  8.6403397  0.641521941 Closer to C. lupus
## 30:  8.2458791 -1.761996510 Closer to C. lupus
## 31: -3.5092712 -2.714424871 Closer to C. lupus
## 32:  1.1648572 -0.773255536 Closer to C. lupus
## 33: -2.9600471 -1.833835454 Closer to C. lupus
## 34:  4.8974387  1.615700393 Closer to C. lupus
## 35: -1.9503143 -0.367767612 Closer to C. lupus
## 36:  9.9180862  5.251190876 Closer to C. lupus
## 37: -2.9810517  0.095364387 Closer to C. lupus
## 38:  1.9089504  0.352098306 Closer to C. lupus
## 39:  3.9666492 -0.482129670 Closer to C. lupus
## 40: -1.2247626 -0.072212652 Closer to C. lupus
## 41:  8.4605340  3.700126214 Closer to C. lupus
## 42: -1.0614639 -0.862743931 Closer to C. lupus
## 43: -12.9517270 -12.204893321 Closer to C. lupus
## 44:  2.4372192 -2.212577553 Closer to C. lupus
## 45:  2.3228578  2.223874041 Closer to C. lupus
## 46:  6.4762782  1.902076245 Closer to C. lupus
## 47: -8.3344496 -1.387952409 Closer to C. lupus
## 48:  7.6643577 -5.998065319 Closer to C. lupus
## 49: -1.4921121 -1.403937544 Closer to C. lupus
## 50:  9.6195613  5.121757314 Closer to C. lupus

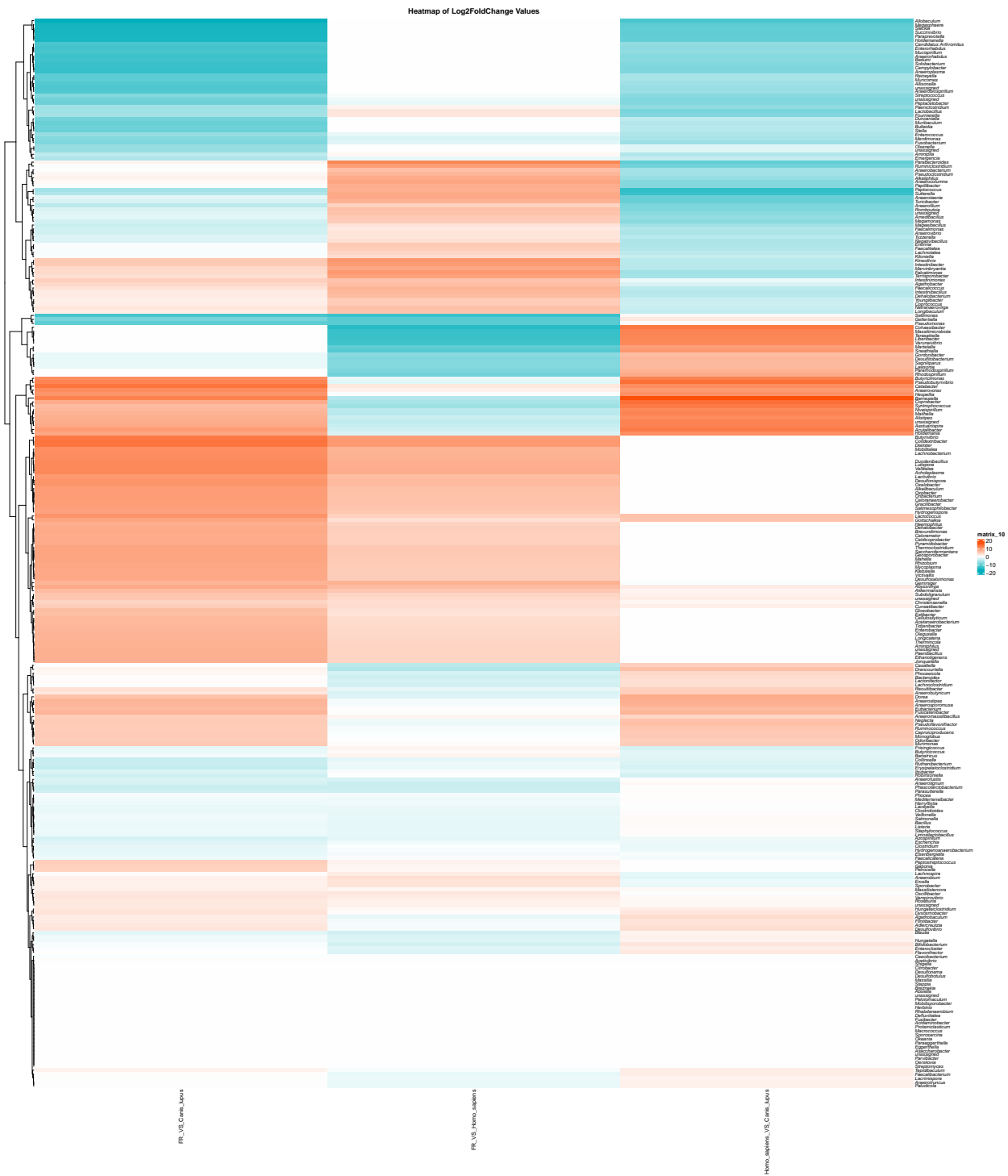
```

## 51:	5.9202719	-2.487767142	Closer to C. lupus
## 52:	8.8914600	3.032950835	Closer to C. lupus
## 53:	-1.2689157	0.063884844	Closer to C. lupus
## 54:	-5.1441017	0.945837117	Closer to C. lupus
## 55:	-1.3981133	0.241852977	Closer to C. lupus
## 56:	-2.1536005	-0.003386395	Closer to C. lupus
## 57:	7.4349985	7.174932304	Closer to C. lupus
## 58:	3.0488049	-2.340381015	Closer to C. lupus
## 59:	-1.3808559	0.068541957	Closer to C. lupus
## 60:	7.7857590	-0.223556802	Closer to C. lupus
## 61:	-0.6441712	-0.585903792	Closer to C. lupus
## 62:	2.7314043	1.388121018	Closer to C. lupus
## 63:	5.8817959	2.343775563	Closer to C. lupus
## 64:	5.0603281	-1.917868113	Closer to C. lupus
## 65:	7.2118748	2.847278080	Closer to C. lupus
## 66:	4.7009823	-0.361417891	Closer to C. lupus
## 67:	5.6508442	1.713216113	Closer to C. lupus
## 68:	-13.1983107	0.000000000	Closer to C. lupus
## 69:	7.4185380	-2.614005950	Closer to C. lupus
## 70:	5.7445616	-2.037839140	Closer to C. lupus
## 71:	-3.5826850	-3.511918815	Closer to C. lupus
## 72:	4.8293080	-2.957137470	Closer to C. lupus
## 73:	-1.4696692	-1.034861158	Closer to C. lupus
## 74:	3.2359571	-0.309745496	Closer to C. lupus
## 75:	-10.5415368	0.000000000	Closer to C. lupus
## 76:	-14.2339028	0.000000000	Closer to C. lupus
## 77:	-13.0510130	0.000000000	Closer to C. lupus
## 78:	-11.1132843	-8.960724067	Closer to C. lupus
## 79:	-12.8911240	0.000000000	Closer to C. lupus
## 80:	-8.6938614	0.000000000	Closer to C. lupus
## 81:	-9.4670085	0.000000000	Closer to C. lupus
## 82:	-12.6891891	0.000000000	Closer to C. lupus
## 83:	-11.1889630	0.000000000	Closer to C. lupus
## 84:	-3.4085531	-3.265754525	Closer to C. lupus
## 85:	8.0597567	-5.183813733	Closer to C. lupus
## 86:	-8.1443252	-1.387952409	Closer to C. lupus
## 87:	-1.3913869	-0.925852460	Closer to C. lupus
## 88:	-10.8656981	-10.509137259	Closer to C. lupus
##	l2fc_Hsap	l2fc_Clup	similarity

Heatmap of VST-normalized abundance values



Heatmap of Log2 FC values



Species level

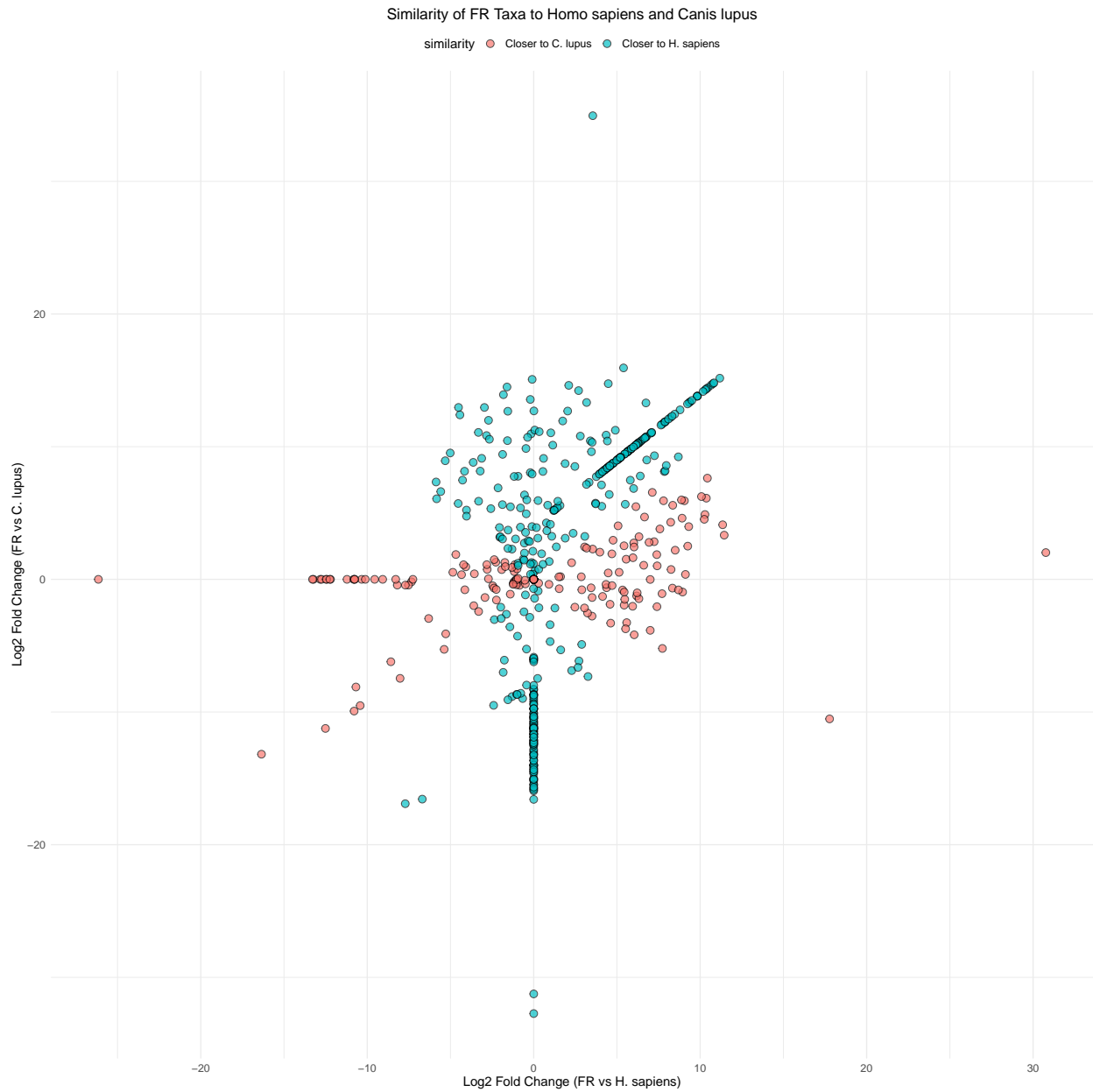
Barplot of abundances



Number of Significantly Different Taxa Among *FR*, *H. sapiens* and *C. lupus*

taxon_level	comparison	NA	FALSE	TRUE
species	FR_VS_Canis_lupus	63	168	353
species	FR_VS_Homo_sapiens	63	271	250
species	Homo_sapiens_VS_Canis_lupus	72	219	293

L2FC of Taxa in *FR* vs *H. sapiens* and in *FR* vs *C. lupus*



FR Taxa that are more similar to *H. sapiens* than to *C. lupus*

Key: <taxon>

##

##

1: Bacteria;Actinobacteria;Actinobacteria;Bifidobacteriales;Bifidobacteriaceae;Bifidobacterium;Bifidobacterium

2: Bacteria;Actinobacteria;Actinobacteria;Bifidobacteriales;Bifidobacteriaceae;Bifidobacterium;Bifidobacterium

3: Bacteria;Actinobacteria;Actinobacteria;Bifidobacteriales;Bifidobacteriaceae;Bifidobacterium;Bifidobacterium

4: Bacteria;Actinobacteria;Actinobacteria;Bifidobacteriales;Bifidobacteriaceae;Bifidobacterium;Bifidobacterium

5: Bacteria;Actinobacteria;Actinobacteria;Bifidobacteriales;Bifidobacteriaceae;Bifidobacterium;Bifidobacterium

580: Bacteria;Tenericutes;Mollicutes;Anaeroplasmatales;Anaeroplasmataceae;Anaeroplasma;Anaeroplasma

581: Bacteria;Tenericutes;Mollicutes;Anaeroplasmatales;Anaeroplasmataceae;Anaeroplasma;Anaeroplasma

582: Bacteria;Tenericutes;Mollicutes;Mycoplasmatales;Mycoplasmataceae;Mycoplasma;Mycoplasma

583: Bacteria;Tenericutes;Mollicutes;Mycoplasmatales;Mycoplasmataceae;Mycoplasma;Mycoplasma

584: Bacteria;Verrucomicrobia;Verrucomicrobiae;Verrucomicrobiales;Akkermansiaceae;Akkermansia;Akkermansia

baseMean log2FoldChange lfcSE stat pvalue padj

<num> <num> <num> <num> <num> <num>

1: 2.862254e+05 -7.344652 0.8264495 -8.886994 6.278451e-19 3.675363e-18

2: 2.442034e+00 0.000000 4.5467745 0.000000 1.000000e+00 1.000000e+00

3: 5.533957e+01 9.845559 3.5013515 2.811931 4.924505e-03 1.204539e-02

4: 8.978688e+00 0.000000 3.4854690 0.000000 1.000000e+00 1.000000e+00

5: 7.308651e+02 -26.153189 2.0879319 -12.525882 5.388871e-36 5.297362e-35

580: 1.082385e+01 0.000000 1.5028570 0.000000 1.000000e+00 1.000000e+00

581: 3.662213e+00 0.000000 2.9256393 0.000000 1.000000e+00 1.000000e+00

582: 2.201197e+00 5.193694 4.6127498 1.125943 2.601896e-01 4.158244e-01

583: 0.000000e+00 0.000000 0.0000000 0.000000 1.000000e+00 NA

584: 3.291821e+04 5.803550 1.4417384 4.025383 5.688261e-05 1.693477e-04

comparison superkingdom phylum class

<char> <char> <char> <char>

1: FR_VS_Homo_sapiens Bacteria Actinobacteria Actinobacteria

2: FR_VS_Homo_sapiens Bacteria Actinobacteria Actinobacteria

3: FR_VS_Homo_sapiens Bacteria Actinobacteria Actinobacteria

4: FR_VS_Homo_sapiens Bacteria Actinobacteria Actinobacteria

5: FR_VS_Homo_sapiens Bacteria Actinobacteria Actinobacteria

580: FR_VS_Homo_sapiens Bacteria Tenericutes Mollicutes

581: FR_VS_Homo_sapiens Bacteria Tenericutes Mollicutes

582: FR_VS_Homo_sapiens Bacteria Tenericutes Mollicutes

583: FR_VS_Homo_sapiens Bacteria Tenericutes Mollicutes

584: FR_VS_Homo_sapiens Bacteria Verrucomicrobia Verrucomicrobiae

order family genus

<char> <char> <char>

1: Bifidobacteriales Bifidobacteriaceae Bifidobacterium

2: Bifidobacteriales Bifidobacteriaceae Bifidobacterium

3: Bifidobacteriales Bifidobacteriaceae Bifidobacterium

4: Bifidobacteriales Bifidobacteriaceae Bifidobacterium

5: Bifidobacteriales Bifidobacteriaceae Bifidobacterium

580: Anaeroplasmatales Anaeroplasmataceae Anaeroplasma

581: Anaeroplasmatales Anaeroplasmataceae Anaeroplasma

582: Mycoplasmatales Mycoplasmataceae Mycoplasma

583: Mycoplasmatales Mycoplasmataceae Mycoplasma

```

## 584: Verrucomicrobiales      Akkermansiaceae      Akkermansia
##                               species is.significant taxon_level
##                               <char>          <lgcl>          <char>
## 1: Bifidobacterium adolescentis      TRUE      species
## 2:      Bifidobacterium animalis      FALSE      species
## 3:      Bifidobacterium bifidum      TRUE      species
## 4:      Bifidobacterium choerinum      FALSE      species
## 5:      Bifidobacterium faecale      TRUE      species
## ---
## 580: Anaeroplasma abactoclasticum      FALSE      species
## 581:      Anaeroplasma varium      FALSE      species
## 582:      Mycoplasma capricolum      FALSE      species
## 583:      Mycoplasma mycoides      NA      species
## 584:      Akkermansia muciniphila      TRUE      species

```

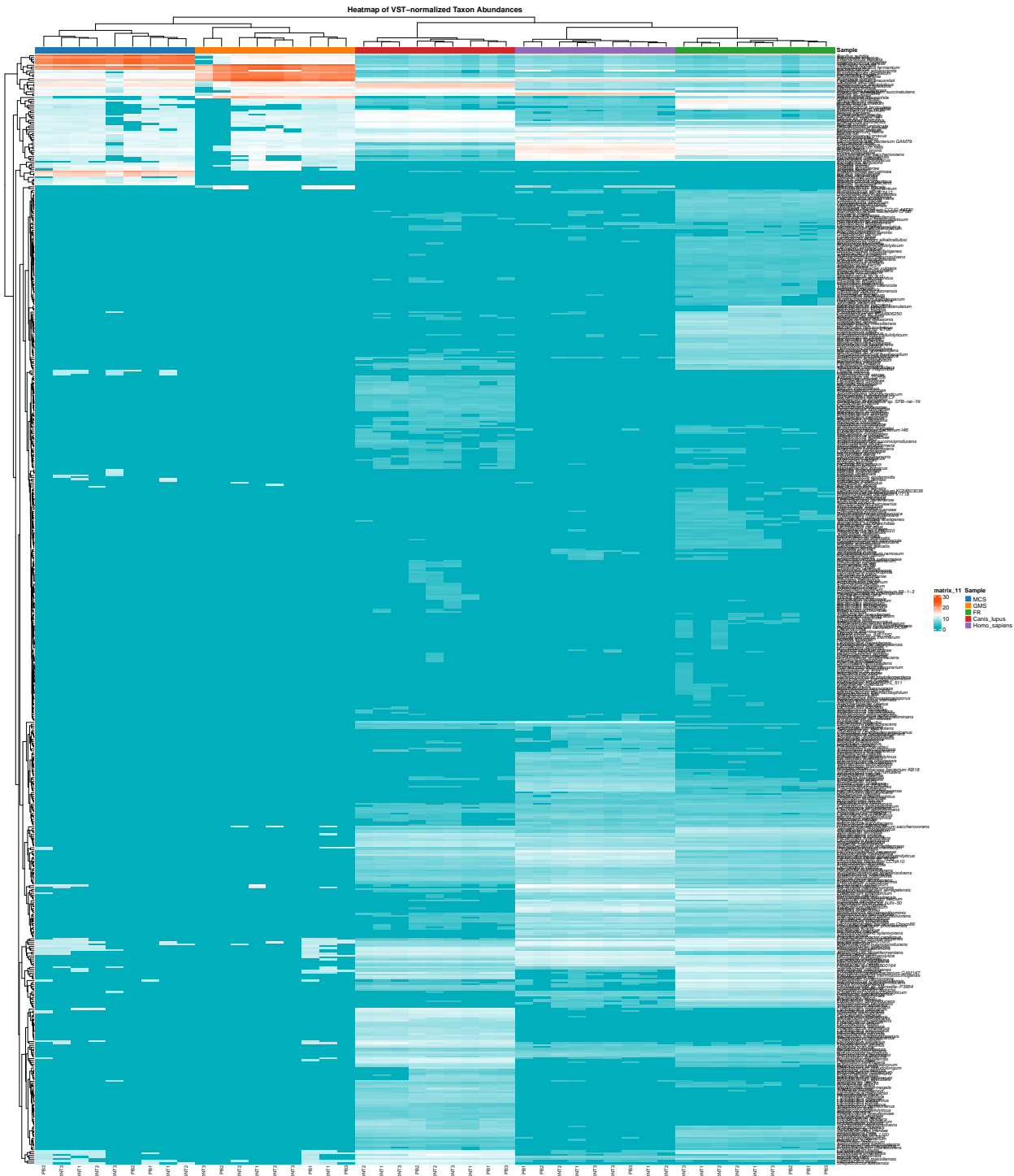
FR Taxa that are more similar to *C. lupus* than to *H. sapiens*

```

## Key: <taxon>
##
##
## 1: Bacteria;Actinobacteria;Actinobacteria;Bifidobacteriales;Bifidobacteriaceae;Bifidobacterium;Bifidobacterium
## 2:      Bacteria;Actinobacteria;Actinobacteria;Bifidobacteriales;Bifidobacteriaceae;Bifidobacterium
## 3:      Bacteria;Actinobacteria;Actinobacteria;Corynebacteriales;Segniliparaceae;Segniliparaceae
## 4:      Bacteria;Actinobacteria;Coriobacteriia;Coriobacteriales;Coriobacteriaceae;Eubacteriaceae
## 5:      Bacteria;Actinobacteria;Coriobacteriia;Eggerthellales;Eggerthellaceae;Gordonibacteriaceae
## ---
## 152: Bacteria;Proteobacteria;Alphaproteobacteria;Rhodospirillales;Rhodospirillaceae;Varunaivibrio;Varunaivibrio
## 153:      Bacteria;Proteobacteria;Alphaproteobacteria;Sneathiellales;Sneathiellaceae;Sneathiella;Sneathiella
## 154:      Bacteria;Proteobacteria;Deltaproteobacteria;Desulfovibrionales;Desulfovibrionaceae;Lawsonia;Lawsonia
## 155:      Bacteria;Proteobacteria;Gammaproteobacteria;Enterobacterales;Enterobacteriaceae;Salmonella;Salmonella
## 156:      Bacteria;Proteobacteria;Gammaproteobacteria;Pseudomonadales;Pseudomonadaceae;Pseudomonas;Pseudomonas
##
##      12fc_Hsap      12fc_Clup      similarity
##      <num>          <num>          <char>
## 1: -7.3446516 -0.18941054 Closer to C. lupus
## 2: -26.1531895 0.00000000 Closer to C. lupus
## 3: -7.5226903 -0.43354985 Closer to C. lupus
## 4:  5.5540638 1.51654823 Closer to C. lupus
## 5: -7.2575665 0.00000000 Closer to C. lupus
## ---
## 152: -12.2491061 0.00000000 Closer to C. lupus
## 153: -10.7631607 0.00000000 Closer to C. lupus
## 154: -7.7108826 -0.43354985 Closer to C. lupus
## 155: -0.9384531 0.06667384 Closer to C. lupus
## 156: -10.4235609 -9.51631037 Closer to C. lupus

```

Heatmap of VST-normalized abundance values



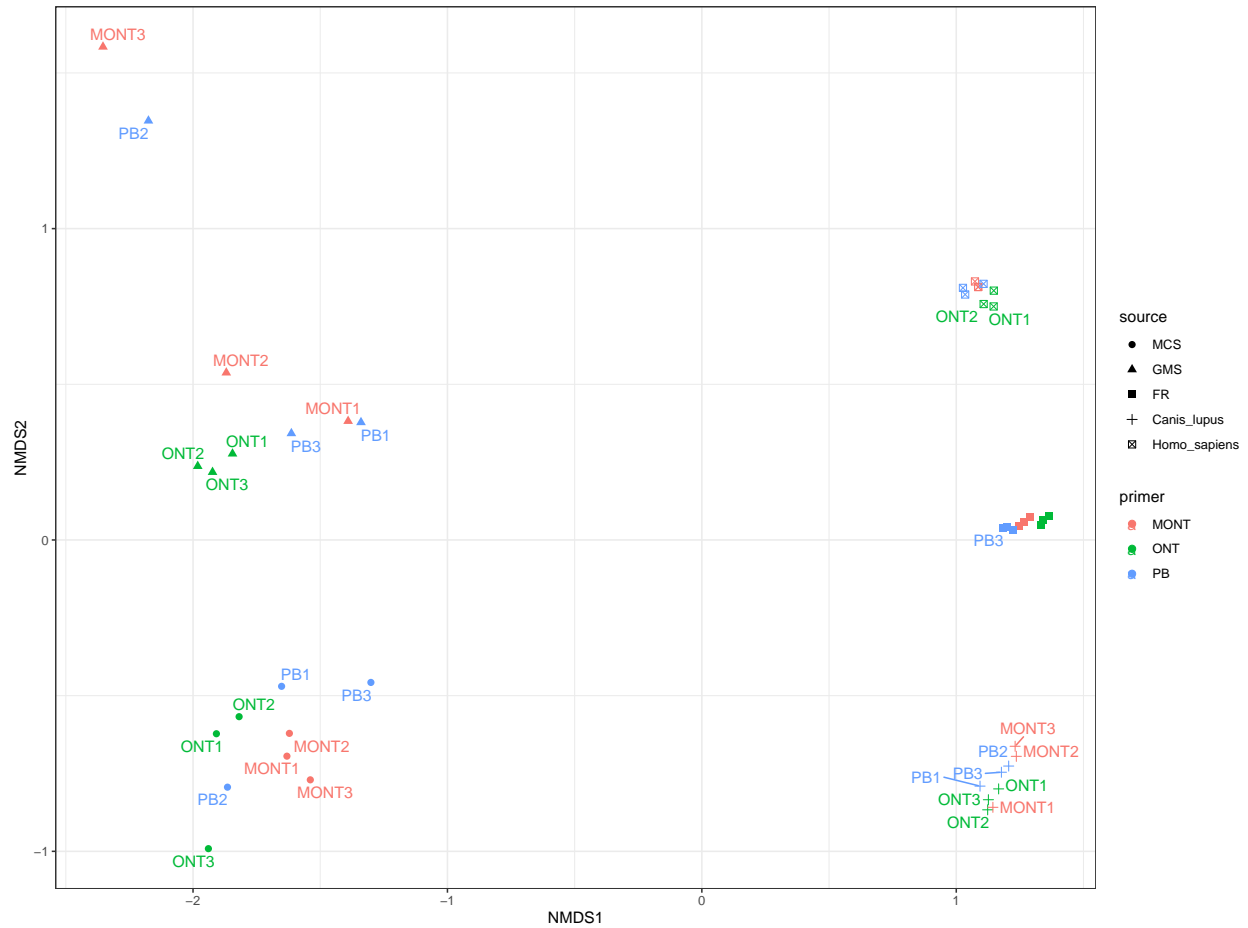
Heatmap of Log2 FC values



B-diversity Analysis using sample-wise *Bray-Curtis* distances

Non-metric Multi-Dimensional Scaling (*NMDS*)

NMDS v1: color = DNA_isolation_method; shape = Vregion



NMDS v2: color = Vregion; shape = DNA_isolation_method

