

| species_name                                    | diff         | d_std        | pval        | mann_whitneyse | se_std      | median_zero | median_one | qval        | qval_mann_whitney |
|-------------------------------------------------|--------------|--------------|-------------|----------------|-------------|-------------|------------|-------------|-------------------|
| s_Ruminococcus_callidus t_SGB4422               | -4.844067192 | -1.476500172 | 6.72E-08    | 0.293237963    | 0.897277016 | 0.275688062 | 0          | 0           | 1.39E-05          |
| s_Lachnospiraceae_bacterium t_SGB4747           | 4.737781187  | 1.406559069  | 2.71E-07    | 0.398686438    | 0.921227535 | 0.27294402  | 0          | 0           | 4.19E-05          |
| s_Faecalimonas_umbilicata t_SGB4583             | 3.930509966  | 1.256771411  | 4.32E-06    | 0.016744879    | 0.855347314 | 0.267432254 | 0          | 0           | 0.000536041       |
| s_GGB9512_SGB14909 t_SGB14909                   | -3.926750089 | -1.607066545 | 4.20E-09    | 0.189041005    | 0.668265882 | 0.281086784 | 0          | 0           | 2.61E-06          |
| s_Faecalibacterium_prausnitzii t_SGB15322       | -3.70758566  | -0.786137883 | 0.004047821 | 1              | 1.289859348 | 0.253656802 | 0          | 0           | 0.067828347       |
| s_Clostridia_bacterium_UC5_1_E11 t_SGB14895     | -3.549201282 | -1.535849738 | 1.96E-08    | 0.064729041    | 0.632021407 | 0.278098336 | 0          | 0           | 6.07E-06          |
| s_Bifidobacterium_animalis t_SGB17278           | -3.411131649 | -0.822753081 | 0.002627202 | 0.101610098    | 1.133910692 | 0.254522282 | 0          | 0           | 0.049360026       |
| s_Blauitia_hansenii t_SGB4798                   | 3.370112006  | 1.081047373  | 7.73E-05    | 0.014431113    | 0.852608182 | 0.261835072 | 0          | 0           | 0.004790827       |
| s_Pseudoflavonifactor_SGB15156 t_SGB15156_group | -3.194910851 | -1.052263428 | 0.000119347 | 0.093391865    | 0.830393908 | 0.260757479 | 0          | 0           | 0.006166246       |
| s_Flavobacteriales_bacterium t_SGB2275          | 3.180839933  | 1.015624864  | 0.000204412 | 0.590909969    | 0.856551159 | 0.259670576 | 0          | 0           | 0.000852549       |
| s_Clostridium_sp_AF15_49 t_SGB5111              | -3.135224891 | -1.061657159 | 0.000103681 | 0.407453083    | 0.807670634 | 0.261041604 | 0          | 0           | 0.005843859       |
| s_Enterococcus_faecium t_SGB1967                | 3.025884879  | 0.918305788  | 0.000786037 | 0.543026022    | 0.9011871   | 0.256950679 | 0          | 0           | 0.020305945       |
| s_GGB1681_SGB2313 t_SGB2313                     | 2.919679725  | 0.647534974  | 0.017902559 | 0.085855217    | 1.233166932 | 0.250715381 | 0          | 0           | 0.158565521       |
| s_Clostridia_bacterium t_SGB14029               | 2.865691377  | 0.782496269  | 0.004221796 | 0.16983894     | 1.001606255 | 0.253572721 | 0          | 0           | 0.068881928       |
| s_Slackia_isoflavoniconvertens t_SGB14773_group | -2.768082557 | -1.032628442 | 0.000159577 | 0.118392777    | 0.733136501 | 0.260170777 | 0          | 0           | 0.007610606       |
| s_GGB9694_SGB1520 t_SGB15201                    | -2.751786897 | -1.13539702  | 3.30E-05    | 0.369760953    | 0.662852556 | 0.263348216 | 0          | 0           | 0.002408592       |
| s_Parabacteroides_gordonii t_SGB1942            | 2.738821767  | 0.828952098  | 0.002437812 | 0.02241241     | 0.903616646 | 0.254672408 | 0          | 0           | 0.047232615       |
| s_GGB5980_SGB8599 t_SGB8599                     | -2.69337459  | -0.990756666 | 0.000291687 | 0.304475579    | 0.743497722 | 0.258952299 | 0          | 0           | 0.012056412       |
| s_Lachnospira_sp_NSJ_43 t_SGB5087               | 2.656097681  | 1.217232765  | 8.56E-06    | 0.200890027    | 0.596788293 | 0.266063337 | 0          | 0           | 0.000884632       |
| s_Clostridia_unclassified_SGB6317 t_SGB6317     | 2.565061538  | 0.859205677  | 0.001680425 | 0.137289689    | 0.816489375 | 0.255419935 | 0          | 0           | 0.037209414       |
| s_Clostridia_bacterium t_SGB14250               | 2.4795018    | 0.813097568  | 0.002491815 | 0.750382497    | 0.834010758 | 0.254290517 | 0          | 0           | 0.053779254       |
| s_Haemophilus_para-influenzae t_SGB9712_group   | -2.467512296 | -1.181848434 | 1.55E-05    | 0.537563839    | 0.571014883 | 0.264869618 | 0          | 0           | 0.001374011       |
| s_Peptococcaceae_bacterium t_SGB4059            | -2.441973335 | -0.849737621 | 0.001890252 | 0.376439096    | 0.785969978 | 0.255183348 | 0          | 0           | 0.039989888       |
| s_Blauitia_stercoris t_SGB4788_group            | -2.440226105 | -0.893889175 | 0.001081614 | 0.83452829     | 0.746614255 | 0.256307042 | 0          | 0           | 0.026824039       |
| s_GGB3523_SGB4703 t_SGB4703                     | -2.424659362 | -0.759116547 | 0.005509812 | 0.081418909    | 0.873558838 | 0.253041564 | 0          | 0           | 0.080411037       |
| s_GGB9524_SGB14924 t_SGB14924                   | 2.408709882  | 0.935004599  | 0.000629158 | 0.107581663    | 0.7045643   | 0.2573999   | 0          | 0           | 0.019050926       |
| s_GGB3486_SGB4658 t_SGB4658                     | -2.406671556 | -0.669369015 | 0.014386683 | 0.818450366    | 0.983334116 | 0.251143133 | 0          | 0           | 0.141583233       |
| s_Bacteroides_congonensis t_SGB1878             | 2.385013353  | 0.835712337  | 0.002245558 | 0.423127612    | 0.780519734 | 0.254837309 | 0          | 0           | 0.04491115        |
| s_Lachnospiraceae_bacterium t_SGB4718           | 2.371477229  | 0.868720631  | 0.001491338 | 0.349401717    | 0.746601265 | 0.255660111 | 0          | 0           | 0.035562666       |
| s_Lachnospiraceae_bacterium t_SGB4746           | -2.366829587 | -0.567379199 | 0.03802843  | 0.177585026    | 1.140889195 | 0.249261206 | 0          | 0           | 0.245600279       |
| s_Bifidobacterium_bifidum t_SGB17256            | -2.347095372 | -0.7544964   | 0.005802861 | 0.815085072    | 0.850792107 | 0.252938377 | 0          | 0           | 0.081767591       |
| s_Coprobacillus_cateniformis t_SGB6771          | -2.303789243 | -0.935362083 | 0.000626143 | 0.696131798    | 0.673616742 | 0.257409597 | 0          | 0           | 0.019050926       |
| s_Clostridia_bacterium t_SGB4394                | 2.284400436  | 0.73439219   | 0.007248437 | 0.503809607    | 0.850734552 | 0.252496226 | 0          | 0           | 0.095617682       |
| s_Clostridia_bacterium t_SGB14307               | -2.275131405 | -0.925901628 | 0.000710646 | 0.376439096    | 0.672034431 | 0.257154111 | 0          | 0           | 0.019156535       |
| s_Acidaminococcus_intestinalis t_SGB5736        | -2.247118218 | -0.676172095 | 0.013423358 | 0.07803529     | 0.906720979 | 0.251279159 | 0          | 0           | 0.136434128       |
| s_Clostridia_unclassified_SGB6376 t_SGB6376     | 2.240703221  | 0.732120967  | 0.007403057 | 0.434256646    | 0.837049961 | 0.252446978 | 0          | 0           | 0.095978198       |
| s_Faecalicatena_orotidis t_SGB4616              | 2.200845638  | 0.684322968  | 0.012340737 | 0.068654022    | 0.879547494 | 0.251444456 | 0          | 0           | 0.128127651       |
| s_Lachnospiraceae_bacterium t_SGB4953           | 2.185511473  | 0.704192573  | 0.010030141 | 0.473565123    | 0.848812052 | 0.251853107 | 0          | 0           | 0.12457375        |
| s_GGB32463_SGB47515 t_SGB47515                  | -2.124750146 | -0.642250316 | 0.01885908  | 0.31599549     | 0.904801741 | 0.250613873 | 0          | 0           | 0.158877429       |
| s_Neglectia_timonensis t_SGB14851               | 2.116672248  | 0.770771082  | 0.004829009 | 0.743714478    | 0.751065979 | 0.253304465 | 0          | 0           | 0.073024041       |
| s_Veillonella_parvula t_SGB6939                 | -2.099781975 | -0.617011762 | 0.02406918  | 0.512004707    | 0.930744861 | 0.250140022 | 0          | 0           | 0.18709468        |
| s_Lawsonibacter_sp_NSJ_52 t_SGB15125            | 2.096967645  | 0.68731426   | 0.011968385 | 0.704897572    | 0.834422991 | 0.251504751 | 0          | 0           | 0.128727651       |
| s_GGB9614_SGB15049 t_SGB15049                   | -2.0706691   | -0.946053127 | 0.000541943 | 0.251568088    | 0.598611511 | 0.257701131 | 0          | 0           | 0.019050926       |
| s_Ruminococcaceae_bacterium t_SGB53821          | -2.061283644 | -0.954580595 | 0.000482479 | 0.647258644    | 0.590574978 | 0.257935803 | 0          | 0           | 0.018696069       |
| s_GGB9581_SGB79823 t_SGB79823                   | -2.060131571 | -0.77356427  | 0.004688708 | 0.092906322    | 0.728559701 | 0.25336329  | 0          | 0           | 0.073024041       |
| s_Tyzzerella_nexilis t_SGB4588_group            | 1.99363372   | 0.747602866  | 0.006266274 | 0.790387927    | 0.729330372 | 0.25278551  | 0          | 0           | 0.084458471       |
| s_Parabacteroides_goldsteinii t_SGB1941         | 1.95991031   | 0.687385598  | 0.011959539 | 0.208966033    | 0.779804353 | 0.251506207 | 0          | 0           | 0.128727651       |
| s_Eubacterium_ramulus t_SGB4960                 | 1.952486234  | 0.64049933   | 0.019185731 | 0.406770794    | 0.833710332 | 0.250580415 | 0          | 0           | 0.158877429       |
| s_Lachnospiraceae_bacterium t_SGB4963           | -1.936965426 | -0.697093407 | 0.010808458 | 0.574696714    | 0.759942582 | 0.251705615 | 0          | 0           | 0.128727651       |
| s_Actinomyces_naeslundii t_SGB15888             | 1.89087443   | 0.847844335  | 0.01394995  | 0.565777324    | 0.609953114 | 0.255136327 | 0          | 0           | 0.039989888       |
| s_Clostridia_bacterium t_SGB15395               | -1.885340361 | -0.929646692 | 0.000676001 | 0.224160128    | 0.554653456 | 0.257254968 | 0          | 0           | 0.019050926       |
| s_Clostridium_SGB6179 t_SGB6179                 | -1.797740104 | -0.597902336 | 0.02804483  | 0.240294551    | 0.822330774 | 0.249793312 | 0          | 0           | 0.207660229       |
| s_Clostridia_bacterium t_SGB15411               | 1.772854352  | 0.771585074  | 0.004784431 | 0.257575367    | 0.628404269 | 0.25322966  | 0          | 0           | 0.073024041       |
| s_Ruminococcaceae_bacterium t_SGB14177          | 1.771062421  | 0.750811717  | 0.006046059 | 0.137239878    | 0.645138134 | 0.252856505 | 0          | 0           | 0.083308277       |
| s_GGB51510_SGB71883 t_SGB71883                  | -1.736697944 | -0.672668272 | 0.013912411 | 0.709266484    | 0.706111417 | 0.251208938 | 0          | 0           | 0.139121413       |
| s_Lachnospiraceae_bacterium t_SGB4597           | -1.731606211 | -0.710098976 | 0.009421059 | 0.679256875    | 0.69629819  | 0.251976891 | 0          | 0           | 0.119205233       |
| s_Clostridia_bacterium t_SGB14892               | -1.726375804 | -0.687519462 | 0.011942955 | 0.327797898    | 0.686752471 | 0.251508939 | 0          | 0           | 0.128727651       |
| s_Clostridia_bacterium t_SGB15382               | -1.683484959 | -0.694833412 | 0.01106726  | 0.711221658    | 0.662641198 | 0.251658957 | 0          | 0           | 0.128727651       |
| s_Massiliimicrobiota_sp_An134 t_SGB6768         | -1.663465139 | -0.58413638  | 0.032694201 | 0.398871289    | 0.77884195  | 0.249550021 | 0          | 0           | 0.225226717       |
| s_Lachnospiraceae_bacterium_NSJ_46 t_SGB47656   | 1.654298406  | 0.642877334  | 0.018743308 | 0.755941809    | 0.703777898 | 0.250625876 | 0          | 0           | 0.158877429       |
| s_GGB9176_SGB14114 t_SGB14114                   | 1.621572057  | 0.611699004  | 0.025312641 | 0.535082178    | 0.727699399 | 0.250042584 | 0          | 0           | 0.193751081       |
| s_Lachnospiraceae_bacterium t_SGB4669           | -1.623026595 | -0.648515841 | 0.017226775 | 0.061469481    | 0.68447813  | 0.250734308 | 0          | 0           | 0.158565521       |
| s_Clostridia_unclassified_SGB14844 t_SGB14844   | -1.601687019 | -0.683700621 | 0.012424159 | 0.381836093    | 0.640710097 | 0.251431205 | 0          | 0           | 0.128727651       |
| s_GGB9758_SGB15368 t_SGB15368                   | 1.580216155  | 0.636044541  | 0.020039149 | 0.791620184    | 0.679483406 | 0.250495684 | 0          | 0           | 0.163477271       |
| s_Clostridia_bacterium t_SGB15401               | -1.546595904 | -0.689862681 | 0.011655938 | 0.772934766    | 0.61314627  | 0.251556838 | 0          | 0           | 0.128727651       |
| s_Erysipelotrichaceae_bacterium t_SGB4027       | 1.545333657  | 0.66012828   | 0.015792624 | 0.782985136    | 0.640241486 | 0.250960455 | 0          | 0           | 0.148354953       |
| s_Clostridium_scindens t_SGB4630_group          | 1.487668311  | 0.609011995  | 0.025962444 | 0.094809264    | 0.668082584 | 0.24999361  | 0.000852   | 0           | 0.1953312         |
| s_Ruminococcus_lactaris t_SGB4457               | -1.46155025  | -0.581556734 | 0.033471093 | 0.326833682    | 0.687339891 | 0.249505035 | 0          | 0           | 0.228044807       |
| s_Anaerofustis_stercorihominis t_SGB49059       | 1.456988729  | 0.931553527  | 0.0005897   | 0.538364587    | 0.427758122 | 0.257306462 | 0          | 0           | 0.019050926       |
| s_Roseburia_sp_AF02_12 t_SGB4938                | 1.440324567  | 0.608043229  | 0.026202334 | 0.805283836    | 0.647851992 | 0.249976004 | 0.003575   | 0           | 0.1953312         |
| s_Bacteroides_nordii t_SGB1858                  | 1.438609205  | 0.590147269  | 0.009406245 | 0.909767835    | 0.666702863 | 0.249655586 | 0          | 0           | 0.215815025       |
| s_Clostridium_fessum t_SGB4705                  | -1.4168653   | -1.131851286 | 3.50E-05    | 0.010238482    | 0.342364781 | 0.263234237 | 0.14384    | 0.02957     | 0.002408592       |
| s_GGB51959_SGB72479 t_SGB72479                  | -1.407644776 | -0.758039076 | 0.005576894 | 0.192356021    | 0.907868182 | 0.253017461 | 0          | 0           | 0.080411037       |
| s_Clostridia_bacterium t_SGB13979               | 1.399808534  | 0.571110789  | 0.036780497 | 0.464990264    | 0.670344668 | 0.249324822 | 0          | 0           | 0.240072229       |
| s_Clostridiales_bacterium_NSJ_40 t_SGB72336     | 1.399032918  | 0.700654932  | 0.01041522  | 0.83452829     | 0.546101836 | 0.251779433 | 0          | 0           | 0.126571439       |
| s_Clostridia_bacterium t_SGB3961                | 1.389472241  | 0.590019861  | 0.030979899 | 0.347114122    | 0.644070089 | 0.249653338 | 0          | 0           | 0.215815025       |
| s_Blauitia_glucerasea t_SGB4816                 | -1.377997798 | -0.645897948 | 0.018194215 | 0.235542597    | 0.583491462 | 0.250683852 | 0          | 0           | 0.158877429       |
| s_Bifidobacterium_adolescentis t_SGB17244       | 1.375782347  | 0.654626869  | 0.016685447 | 0.137145583    | 0.574785485 | 0.250852843 | 0.21167    | 0.152135662 | 0                 |
| s_Paraprevotella_clara t_SGB1798                | -1.300490257 | -0.662554965 | 0.015412176 | 0.192356021    | 0.536827897 | 0.251008195 | 0          | 0           | 0.148354953       |
| s_Dorea_sp_AF24_7LB t_SGB4571                   | -1.238862491 | -0.59425821  | 0.029973282 | 0.094128051    | 0.570161385 | 0.249728379 | 0          | 0           | 0.212319943       |
| s_Anaerotignum_lactatifermentans t_SGB5193      | -1.219285785 | -0.564408018 | 0.03904766  | 0.984291147    | 0.59082957  | 0.24921084  | 0          | 0           | 0.249582985       |
| s_Butyricimonas_virosa t_SGB1784                |              |              |             |                |             |             |            |             |                   |

|                                                         |              |              |             |             |             |               |          |             |             |   |
|---------------------------------------------------------|--------------|--------------|-------------|-------------|-------------|---------------|----------|-------------|-------------|---|
| s_Faecalibacterium_prausnitzii _SGB15323                | -1.477573145 | -0.381276066 | 0.163291548 | 0.575834939 | 1.059886432 | 0.246603021   | 0        | 0           | 0.4825928   | 1 |
| s_GGB3614_SGB4886 _SGB4886                              | 1.465984188  | 0.501647913  | 0.066622786 | 0.701010988 | 0.799245433 | 0.24820662    | 0        | 0           | 0.330187117 | 1 |
| s_Clostridia_bacterium _SGB15385                        | 1.439807295  | 0.537996106  | 0.049170218 | 0.460654484 | 0.731939398 | 0.248774314   | 0        | 0           | 0.285051363 | 1 |
| s_GGB4585_SGB6340 _SGB6340                              | -1.43503359  | -0.397575517 | 0.146034182 | 0.818450366 | 0.987356582 | 0.246795116   | 0        | 0           | 0.468194637 | 1 |
| s_Hydrogenilicostidium_mannosilyticum _SGB14890         | 1.424532762  | 0.470401619  | 0.085439299 | 0.63191833  | 0.828234888 | 0.247749396   | 0        | 0           | 0.371296956 | 1 |
| s_GGB3256_SGB4303 _SGB4303                              | 1.408741815  | 0.47551915   | 0.082092147 | 0.314786121 | 0.810239256 | 0.247822324   | 0        | 0           | 0.368819789 | 1 |
| s_GGB9623_SGB15076 _SGB15076                            | -1.378268636 | -0.497557088 | 0.068872885 | 0.263931363 | 0.757611534 | 0.248145136   | 0        | 0           | 0.333603034 | 1 |
| s_Candidatus_Pseudobutyricoccus_lithianensis _SGB14975  | -1.370984241 | -0.526126874 | 0.054390391 | 0.440107119 | 0.712675557 | 0.248584717   | 0        | 0           | 0.307104186 | 1 |
| s_Phocaeicola_plebeius _SGB1903_group                   | -1.360123293 | -0.503672627 | 0.065531722 | 0.723175945 | 0.738549852 | 0.248237232   | 0        | 0           | 0.327165969 | 1 |
| s_Escherichia_coli _SGB10068                            | 1.349796244  | 0.458464289  | 0.093676512 | 0.634088433 | 0.805216358 | 0.247582267   | 0.034825 | 0.01942     | 0.388657004 | 1 |
| s_GGB38171_SGB72433 _SGB72433_group                     | -1.347927182 | -0.443171062 | 0.105146982 | 0.979546876 | 0.831849814 | 0.247374274   | 0        | 0           | 0.399631915 | 1 |
| s_Eisenbergiella_tayli _SGB4988                         | -1.336409796 | -0.528662553 | 0.053237948 | 0.78985263  | 0.691370728 | 0.248624878   | 0        | 0.00036     | 0.305625255 | 1 |
| s_GGB712_SGB15244 _SGB15244                             | 1.334413121  | 0.515775827  | 0.059312858 | 0.363770756 | 0.707586568 | 0.24842271    | 0        | 0           | 0.322578701 | 1 |
| s_Bacteroides_salysieriae _SGB1857                      | 1.330554708  | 0.503762471  | 0.065483651 | 0.485250508 | 0.722365194 | 0.248238593   | 0        | 0           | 0.327586809 | 1 |
| s_Akkermansia_muciniphila _SGB9228                      | 1.330257616  | 0.420854983  | 0.123852775 | 0.652871142 | 0.86447645  | 0.247083135   | 0        | 0           | 0.426604004 | 1 |
| s_Prevotella_buccalis _SGB1517                          | -1.322264181 | -0.436875069 | 0.110181739 | 0.875203334 | 0.827772242 | 0.247290648   | 0        | 0           | 0.406288826 | 1 |
| s_Lachnospiraceae_bacterium _SGB4688                    | 1.300658564  | 0.427278038  | 0.118220508 | 1           | 0.832535231 | 0.247165424   | 0        | 0           | 0.441779296 | 1 |
| s_GGB6649_SGB9391 _SGB9391                              | -1.236374888 | -0.434826197 | 0.11860645  | 0.399136042 | 0.777650332 | 0.247263686   | 0        | 0           | 0.406288826 | 1 |
| s_Bacilli_unclassified_SGB6571 _SGB6571                 | -1.232659571 | -0.389110263 | 0.154814147 | 0.473565123 | 0.86640381  | 0.246694365   | 0        | 0           | 0.47308325  | 1 |
| s_Clostridia_bacterium _SGB15390                        | -1.23252908  | -0.547881851 | 0.045149533 | 0.611980995 | 0.615262077 | 0.248935341   | 0        | 0           | 0.277155548 | 1 |
| s_Clostridia_bacterium _SGB14150                        | -1.225403699 | -0.381807241 | 0.162705924 | 0.255892602 | 0.877778447 | 0.246609156   | 0        | 0           | 0.4825928   | 1 |
| s_Bifidobacterium_pseudocatenulatum _SGB17237           | 1.216776454  | 0.479642682  | 0.079473179 | 0.908091126 | 0.693813683 | 0.247881645   | 0        | 0           | 0.364550277 | 1 |
| s_Gemmiger_SGB15299 _SGB15299                           | -1.215145347 | -0.415022784 | 0.129146353 | 0.644238216 | 0.800767015 | 0.247009471   | 0        | 0           | 0.432814804 | 1 |
| s_Ruminococcaceae_unclassified_SGB15233 _SGB15233       | 1.208265706  | 0.360864815  | 0.187016974 | 0.796313546 | 0.915730748 | 0.246373609   | 0        | 0           | 0.501950321 | 1 |
| s_GGB3677_SGB4990 _SGB4990                              | -1.199402276 | -0.510092892 | 0.062169036 | 0.270198126 | 0.643080711 | 0.248335089   | 0        | 0           | 0.323905901 | 1 |
| s_Alistipes_inops _SGB2286                              | 1.193657215  | 0.348439017  | 0.202655655 | 0.0299198   | 0.936920485 | 0.246240031   | 0        | 0           | 0.522681763 | 1 |
| s_Intestinimonas_massiliensis _SGB15127                 | -1.193400161 | -0.378832144 | 0.166006481 | 0.423238498 | 0.861567201 | 0.246574899   | 0.004395 | 0.00409     | 0.483545099 | 1 |
| s_Lachnospiraceae_bacterium _SGB4808                    | -1.179954173 | -0.361262538 | 0.186531564 | 0.163555656 | 0.893289232 | 0.246377961   | 0        | 0           | 0.501950321 | 1 |
| s_Lachnospira_SGB5076 _SGB5076                          | 1.168805947  | 0.341518816  | 0.211767337 | 0.506399985 | 0.93600391  | 0.246167637   | 0        | 0           | 0.538098603 | 1 |
| s_Longicatena_caecimuris _SGB4041                       | 1.166954516  | 0.34665089   | 0.240498237 | 0.41872534  | 0.920685909 | 0.246221188   | 0        | 0           | 0.5230002   | 1 |
| s_Candidatus_Geddesella_stercoravicola _SGB14262        | 1.164512927  | 0.451034806  | 0.099116899 | 0.609095368 | 0.706129154 | 0.247480365   | 0        | 0           | 0.39492174  | 1 |
| s_Clostridia_bacterium _SGB13983                        | 1.162528321  | 0.362634579  | 0.18486461  | 0.513016068 | 0.876767038 | 0.246933009   | 0        | 0           | 0.500505609 | 1 |
| s_GGB9501_SGB14898 _SGB14898                            | -1.162078355 | -0.455991359 | 0.095460126 | 0.799726951 | 0.696993433 | 0.247548169   | 0        | 0           | 0.391955486 | 1 |
| s_Raoultibacter_massiliensis _SGB33551                  | 1.161525157  | 0.44378611   | 0.104666075 | 0.737836462 | 0.715821604 | 0.247382506   | 0        | 0           | 0.399631915 | 1 |
| s_Enterococcus_asparagiformis _SGB4724                  | -1.161334596 | -0.507066996 | 0.063373562 | 0.061366611 | 0.626385803 | 0.248288619   | 0        | 0           | 0.324977569 | 1 |
| s_Flavonifractor_sp_A10 _SGB15134                       | -1.153534504 | -0.407398328 | 0.13632979  | 0.327797898 | 0.762174617 | 0.249184688   | 0        | 0           | 0.447271918 | 1 |
| s_GGB9707_SGB15289 _SGB15289                            | -1.134989646 | -0.522690759 | 0.05585216  | 0.312217848 | 0.593876214 | 0.248530592   | 0        | 0           | 0.312710217 | 1 |
| s_GGB6632_SGB15089 _SGB15089                            | 1.133428922  | 0.365346483  | 0.181600971 | 0.386313033 | 0.848474861 | 0.246422917   | 0.002775 | 0.02145     | 0.494303283 | 1 |
| s_Clostridia_bacterium _SGB5184                         | -1.13297932  | -0.525918031 | 0.054486228 | 0.641546927 | 0.589187886 | 0.248581418   | 0        | 0           | 0.307104196 | 1 |
| s_Negativibacillus_massiliensis _SGB14912               | -1.131536066 | -0.333628782 | 0.222514083 | 0.965968224 | 0.927587265 | 0.246086844   | 0        | 0           | 0.545313374 | 1 |
| s_Streptococcus_mitis _SGB8163                          | -1.113127122 | -0.510297058 | 0.062044488 | 0.18112135  | 0.596583979 | 0.248338221   | 0        | 0           | 0.323905901 | 1 |
| s_Faecalitalea_cylindroides _SGB68790                   | 1.110568085  | 0.357528907  | 0.191125138 | 0.898002582 | 0.849540161 | 0.246337295   | 0        | 0           | 0.504245044 | 1 |
| s_GGB9537_SGB14940 _SGB14940                            | 1.106643896  | 0.33846933   | 0.215875901 | 0.48512943  | 0.894207808 | 0.24613619    | 0        | 0           | 0.540295871 | 1 |
| s_Rothia_mucilaginosa _SGB16971                         | 1.106299923  | 0.396134983  | 0.147500746 | 0.937602628 | 0.763799855 | 0.246777821   | 0        | 0           | 0.46897673  | 1 |
| s_Candidatus_Pseudoruminococcus_merdavium _SGB59562     | -1.099621221 | -0.544067815 | 0.046666652 | 0.26402759  | 0.552764271 | 0.24887288    | 0        | 0           | 0.280906059 | 1 |
| s_Alistipes_sp_AF17_16 _SGB2326                         | 1.096505901  | 0.499793609  | 0.067635103 | 0.017794849 | 0.600026127 | 0.24817869    | 0.02891  | 0.330187117 | 1           | 1 |
| s_Clostridia_unclassified_SGB17281 _SGB17281            | 1.093099048  | 0.37458898   | 0.170800608 | 0.589941852 | 0.798094662 | 0.246526495   | 0        | 0           | 0.483545099 | 1 |
| s_Lachnospiraceae_bacterium _SGB4728                    | -1.084212356 | -0.320210141 | 0.241676489 | 0.76808485  | 0.92038745  | 0.245953717   | 0        | 0           | 0.574097406 | 1 |
| s_Clostridiaceae_bacterium_NSJ_33 _SGB25547             | 1.070148482  | 0.412752736  | 0.131253649 | 0.841283702 | 0.708094254 | 0.246981071   | 0        | 0           | 0.37888656  | 1 |
| s_Clostridia_bacterium _SGB5183                         | -1.069205269 | -0.452136147 | 0.098294856 | 0.818450366 | 0.646757909 | 0.247495368   | 0        | 0           | 0.39492174  | 1 |
| s_Clostridium_disporicum _SGB6178                       | -1.062431818 | -0.317748226 | 0.245314675 | 0.351973326 | 0.914466542 | 0.245929878   | 0        | 0           | 0.578404698 | 1 |
| s_Lachnospiraceae_bacterium _SGB4648                    | 1.062262125  | 0.264551475  | 0.333395071 | 0.267712626 | 1.098714604 | 0.245459235   | 0        | 0           | 0.656206172 | 1 |
| s_GGB9186_SGB14125 _SGB14125                            | -1.060298279 | -0.399651918 | 0.143939932 | 0.658010416 | 0.72559794  | 0.246820153   | 0        | 0           | 0.468194637 | 1 |
| s_Blaulia_obuim _SGB4809                                | -1.051615192 | -0.427457725 | 0.118065881 | 0.30773677  | 0.672842736 | 0.247167744   | 0        | 0           | 0.411779296 | 1 |
| s_Eggerthellaceae_unclassified_SGB14322 _SGB14322_group | -1.04874218  | -0.434595931 | 0.112050586 | 0.175962294 | 0.65998333  | 0.247260663   | 0        | 0           | 0.406288826 | 1 |
| s_GGB4277_SGB5832 _SGB5832                              | -1.037039917 | -0.288657816 | 0.291224624 | 0.570166792 | 0.982566692 | 0.245661965   | 0        | 0           | 0.363675498 | 1 |
| s_Eubacteriaceae_bacterium _SGB5043                     | 1.035890791  | 0.485040858  | 0.076147755 | 0.867224369 | 0.584097753 | 0.247960056   | 0        | 0           | 0.35766398  | 1 |
| s_Mediterraneibacter_sp_gm002 _SGB4553                  | -1.034104148 | -0.330352527 | 0.22708919  | 0.615611457 | 0.856123727 | 0.246053842   | 0        | 0           | 0.562044136 | 1 |
| s_Ruminococcaceae_bacterium_DS _SGB14960                | 1.025211789  | 0.320622909  | 0.241070241 | 0.522192618 | 0.874518353 | 0.245957732   | 0        | 0           | 0.574097406 | 1 |
| s_Lactococcus_lactis _SGB7984                           | 1.023930288  | 0.339977851  | 0.213836606 | 0.190417476 | 0.823701113 | 0.246151711   | 0        | 0           | 0.540295871 | 1 |
| s_GGB55957_SGB7276 _SGB7276                             | -1.023231498 | -0.42759789  | 0.117945583 | 0.268443393 | 0.654467725 | 0.247169554   | 0        | 0           | 0.417719287 | 1 |
| s_Ruminococcaceae_unclassified_SGB15260 _SGB15260       | 1.022505504  | 0.381124584  | 0.163458852 | 0.407453083 | 0.73757272  | 0.246801272   | 0        | 0           | 0.4825928   | 1 |
| s_GGB559_SGB14969 _SGB14969                             | 1.019230903  | 0.357798401  | 0.190790811 | 0.708330958 | 0.779083628 | 0.246340217   | 0        | 0           | 0.504245044 | 1 |
| s_GGB3034_SGB4030 _SGB4030                              | -1.010829897 | -0.375907388 | 0.18630003  | 0.78080485  | 0.738349054 | 0.246541478   | 0        | 0           | 0.483545099 | 1 |
| s_Candidatus_Parachristensenella_avicola _SGB58519      | -1.009761351 | -0.435483634 | 0.111319737 | 0.26402759  | 0.634157003 | 0.247272324   | 0        | 0           | 0.406288826 | 1 |
| s_Ruminococcaceae_unclassified_SGB4191 _SGB4191         | -1.008562548 | -0.398815418 | 0.144780836 | 0.349532071 | 0.691641086 | 0.246810051   | 0        | 0           | 0.468194637 | 1 |
| s_Rhodobacteriaceae_unclassified_SGB53807 _SGB53807     | -1.008093487 | -0.290834852 | 0.287600697 | 0.58668653  | 0.947991071 | 0.245681134   | 0        | 0           | 0.634563816 | 1 |
| s_GGB9635_SGB15103 _SGB15103                            | -1.007387308 | -0.311676047 | 0.254451873 | 0.799726951 | 0.883981009 | 0.245871857   | 0        | 0           | 0.593083103 | 1 |
| s_Eggerthellaceae_unclassified_SGB14341 _SGB14341       | 1.007325643  | 0.412038606  | 0.131920262 | 0.666563835 | 0.668623856 | 0.246972168   | 0        | 0           | 0.437388656 | 1 |
| s_Prevotella_timonensis _SGB1507                        | -1.006759935 | -0.352818151 | 0.19703898  | 0.791814824 | 0.780413711 | 0.246286581   | 0        | 0           | 0.513294823 | 1 |
| s_Clostridia_bacterium _SGB13982                        | 1.004841936  | 0.397117154  | 0.14649612  | 0.089060036 | 0.692036485 | 0.246789606   | 0        | 0           | 0.468194637 | 1 |
| s_Alistipes_senegalensis _SGB2296                       | 0.991896328  | 0.389032506  | 0.154896613 | 0.045118762 | 0.697317041 | 0.246693449   | 0        | 0           | 0.47308325  | 1 |
| s_Anaerotruncus_massiliensis _SGB14965                  | -0.988656673 | -0.444484053 | 0.140120362 | 0.544335153 | 0.608329958 | 0.247391861   | 0        | 0           | 0.399631915 | 1 |
| s_Ruminococcaceae_unclassified_SGB15234 _SGB15234       | -0.987561088 | -0.459964552 | 0.092607532 | 0.255248796 | 0.587204659 | 0.247603042   | 0        | 0           | 0.388657004 | 1 |
| s_Lachnospira_pectinioschiza _SGB5075_group             | -0.98048252  | -0.548335591 | 0.04971847  | 0.254957119 | 0.489001746 | 0.2489428     | 0.007415 | 0           | 0.277155548 | 1 |
| s_Cloacibacillus_porcorum _SGB15507                     | -0.979955974 | -0.28009543  | 0.305771921 | 0.626185379 | 0.956864471 | 0.245587953   | 0        | 0           | 0.647027577 | 1 |
| s_Bacteroides_stercoris _SGB1830_group                  | -0.978267698 | -0.481321944 | 0.078426286 | 0.948929059 | 0.555868339 | 0.247905946   | 0.00518  | 0.04029     | 0.364550277 | 1 |
| s_Lachnospiraceae_unclassified_SGB4894 _SGB4894         | 0.96892837   | 0.43379622   | 0.112712227 | 0.509449584 | 0.610879843 | 0.247250178</ |          |             |             |   |

|                                                                      |              |              |             |             |             |             |          |          |             |   |
|----------------------------------------------------------------------|--------------|--------------|-------------|-------------|-------------|-------------|----------|----------|-------------|---|
| s_Clostridia_unclassified_SGB14951 t_SGB14951                        | 0.801001088  | 0.300979162  | 0.271118197 | 0.898002582 | 0.727857839 | 0.245772338 | 0        | 0        | 0.613212394 | 1 |
| s_GGB3570_SGB4777 t_SGB4777                                          | -0.797373766 | -0.394417248 | 0.149264020 | 0.247689279 | 0.552911893 | 0.246757278 | 0        | 0        | 0.472162281 | 1 |
| s_Lacrimispora_celerescens t_SGB4868                                 | -0.795954321 | -0.48562978  | 0.075759858 | 0.247398275 | 0.448213722 | 0.247969439 | 0.110445 | 0.02425  | 0.357663698 | 1 |
| s_Clostridium_sp_AF27_ZAA t_SGB4712                                  | -0.79096026  | -0.45357675  | 0.097227815 | 0.547855551 | 0.479629039 | 0.247515047 | 0        | 0        | 0.39492174  | 1 |
| s_Holdemania_massiliensis t_SGB4044                                  | -0.790718137 | -0.314160579 | 0.250684964 | 0.039233728 | 0.688366773 | 0.245895464 | 0        | 0        | 0.586508218 | 1 |
| s_Raoultibacter_timonensis t_SGB33550                                | -0.787384145 | -0.282956179 | 0.300859232 | 0.928502181 | 0.761057325 | 0.245612435 | 0        | 0        | 0.643216418 | 1 |
| s_Streptococcus_sanguinis t_SGB8047                                  | 0.786643448  | 0.27051946   | 0.322604833 | 0.710579116 | 0.795296927 | 0.245507794 | 0        | 0        | 0.653218785 | 1 |
| s_Clostridia_bacterium t_SGB3992                                     | -0.785637184 | -0.263857516 | 0.334664709 | 0.709266484 | 0.814333775 | 0.245453658 | 0        | 0        | 0.656620631 | 1 |
| s_Clostridia_bacterium t_SGB4438                                     | -0.78385505  | -0.278405177 | 0.308700633 | 0.736831433 | 0.770031231 | 0.245573603 | 0        | 0        | 0.648794551 | 1 |
| s_GGB9342_SGB14306 t_SGB14306                                        | 0.783487494  | 0.306477352  | 0.262460592 | 0.898151587 | 0.699171261 | 0.245823062 | 0        | 0        | 0.601971594 | 1 |
| s_Candidatus_Metaraninococcus_caecorum t_SGB63353                    | -0.781135495 | -0.452299299 | 0.098173543 | 0.366607926 | 0.472335236 | 0.247497594 | 0        | 0        | 0.394921774 | 1 |
| s_Clostridia_bacterium t_SGB54300                                    | -0.777228925 | -0.3756523   | 0.169589594 | 0.710089077 | 0.565864944 | 0.246538575 | 0        | 0        | 0.483545099 | 1 |
| s_Streptococcus_gordonii t_SGB8053                                   | 0.772119841  | -0.269973731 | 0.323581954 | 0.551851929 | 0.782191498 | 0.245503309 | 0        | 0        | 0.653218785 | 1 |
| s_GGB42389_SGB59559 t_SGB59559                                       | -0.766004712 | -0.371946824 | 0.173837677 | 0.41902315  | 0.563248906 | 0.24649627  | 0        | 0        | 0.487689412 | 1 |
| s_Candidatus_Neuraminococcus_faecicola t_SGB63342                    | -0.765216003 | -0.350146518 | 0.200451898 | 0.799726951 | 0.597701187 | 0.246258113 | 0        | 0        | 0.520000739 | 1 |
| s_Blauita_producta t_SGB4785                                         | -0.764862685 | -0.273857651 | 0.316669786 | 0.878773718 | 0.763850702 | 0.245535424 | 0        | 0        | 0.650879125 | 1 |
| s_Clostridia_bacterium t_SGB15374                                    | -0.764074506 | -0.337187245 | 0.217620068 | 0.55822548  | 0.619747035 | 0.246123051 | 0        | 0        | 0.541965229 | 1 |
| s_GGB4456_SGB6141 t_SGB6141                                          | 0.763479458  | 0.26654224   | 0.329771029 | 0.937602628 | 0.783395731 | 0.245475314 | 0        | 0        | 0.653218785 | 1 |
| s_Clostridium_sp_Marseille_P3244 t_SGB29302                          | 0.763273768  | 0.473340375  | 0.083503955 | 0.245468863 | 0.441018363 | 0.247791181 | 0        | 0        | 0.371296956 | 1 |
| s_Anaerofustis_stercorihominis t_SGB4116                             | 0.759127295  | 0.214092938  | 0.433742833 | 0.025914651 | 0.969755278 | 0.245091657 | 0        | 0        | 0.734006284 | 1 |
| s_GGB9532_SGB14933 t_SGB14933                                        | -0.757266448 | -0.310048626 | 0.256940369 | 0.265622431 | 0.667988199 | 0.245856495 | 0        | 0        | 0.594414287 | 1 |
| s_Dorea_longicatena t_SGB4582_group                                  | -0.747729843 | -0.390760847 | 0.153071455 | 0.175172515 | 0.523339554 | 0.246713843 | 0.07118  | 0        | 0.47308325  | 1 |
| s_Clostridiales_bacterium_Choco116 t_SGB15149                        | -0.746406967 | -0.231367223 | 0.397572275 | 0.472154628 | 0.882315151 | 0.245208831 | 0        | 0        | 0.70980439  | 1 |
| s_Clostridium_sp_AF34_13 t_SGB4659                                   | -0.745142572 | -0.261392243 | 0.339200251 | 0.80157638  | 0.779644407 | 0.245433964 | 0        | 0        | 0.659714687 | 1 |
| s_GGB45432_SGB63101 t_SGB63101                                       | 0.739383011  | 0.478858608  | 0.07995667  | 0.352805072 | 0.422291223 | 0.247870327 | 0.007525 | 0.01824  | 0.364550277 | 1 |
| s_Clostridiaceae_unclassified_SGB4769 t_SGB4769                      | -0.735571275 | -0.372404264 | 0.173309093 | 0.577896538 | 0.540206746 | 0.246501782 | 0        | 0        | 0.487689412 | 1 |
| s_Candidatus_Borkfalkia_cetfraxiniphila t_SGB14027                   | 0.735362693  | 0.323617167  | 0.236704522 | 0.934851495 | 0.621469656 | 0.245987008 | 0        | 0        | 0.56882482  | 1 |
| s_Clostridia_bacterium t_SGB4531                                     | 0.733172611  | 0.468137664  | 0.086954842 | 0.226279256 | 0.428333987 | 0.247717378 | 0        | 0        | 0.371806911 | 1 |
| s_Blauita_caecimuris t_SGB4862                                       | 0.732895825  | 0.23873703   | 0.382711662 | 0.481698633 | 0.83959984  | 0.245261569 | 0        | 0        | 0.703611323 | 1 |
| s_Cuneatibacter_caecimuris t_SGB29380                                | 0.732005564  | 0.360084741  | 0.187971742 | 0.170290252 | 0.555980489 | 0.246365088 | 0        | 0        | 0.502117162 | 1 |
| s_Streptococcus_sp_263_SSPc t_SGB8255_group                          | -0.731163401 | -0.301971513 | 0.269541294 | 0.096167899 | 0.662213997 | 0.245781426 | 0        | 0        | 0.612145064 | 1 |
| s_Clostridia_bacterium t_SGB15383                                    | -0.727098836 | -0.210516361 | 0.441462643 | 0.713439018 | 0.944620751 | 0.245068525 | 0        | 0        | 0.734543432 | 1 |
| s_Dielma_fastidiosus t_SGB4031                                       | -0.725549202 | -0.247406198 | 0.365672804 | 0.476854933 | 0.802058749 | 0.245325706 | 0.0011   | 0        | 0.687021632 | 1 |
| s_Lachnospira_eligens t_SGB5082_group                                | -0.7204464   | -0.472135881 | 0.08429373  | 0.379459196 | 0.41733237  | 0.247774063 | 0.089935 | 0.02091  | 0.371296956 | 1 |
| s_GGB9699_SGB15216 t_SGB15216                                        | -0.719503311 | -0.448311417 | 0.101173211 | 0.418081827 | 0.438937701 | 0.247443417 | 0.055725 | 0.03218  | 0.397008804 | 1 |
| s_Clostridiaceae_bacterium t_SGB4770                                 | -0.714622817 | -0.442456427 | 0.105709807 | 0.166146712 | 0.441729351 | 0.247364723 | 0        | 0        | 0.39631915  | 1 |
| s_Phascioartococcus_bacterium t_SGB5792                              | -0.713767893 | -0.516231872 | 0.050908453 | 0.565326504 | 0.378148799 | 0.248429783 | 0.09693  | 0.01572  | 0.322578701 | 1 |
| s_Lachnospiraceae_bacterium t_SGB4781                                | -0.71182958  | -0.539923669 | 0.048363495 | 0.15955764  | 0.360650892 | 0.248905489 | 0.034835 | 0.01436  | 0.285051363 | 1 |
| s_Lachnospiraceae_bacterium t_SGB4964                                | 0.705908726  | 0.329625324  | 0.228113721 | 0.645808622 | 0.585703565 | 0.246046561 | 0.032815 | 0.0504   | 0.552044136 | 1 |
| s_GGB9574_SGB14987 t_SGB14987                                        | 0.705075531  | 0.209546076  | 0.44357043  | 0.612728002 | 0.920250362 | 0.245062317 | 0        | 0        | 0.735330659 | 1 |
| s_Bacteroides_thetaiotaomicron t_SGB1861                             | -0.701655784 | -0.429521279 | 0.116301477 | 0.385726551 | 0.466775449 | 0.247194451 | 0.244635 | 0.17112  | 0.441177926 | 1 |
| s_Blauita_vexerae t_SGB4837_group                                    | 0.698794406  | 0.51081648   | 0.061799164 | 0.221543826 | 0.374140228 | 0.248346194 | 1.50515  | 2.13014  | 0.332905901 | 1 |
| s_Candidatus_Saccharibacteria_unclassified_SGB19850 t_SGB19850_group | -0.698038539 | -0.333622322 | 0.222523038 | 0.427263731 | 0.572234696 | 0.246086778 | 0        | 0        | 0.545313374 | 1 |
| s_GGB9818_SGB15459 t_SGB15459                                        | -0.693906672 | -0.321777073 | 0.239380766 | 0.642386727 | 0.589787893 | 0.245968985 | 0        | 0        | 0.573035039 | 1 |
| s_Lachnospiraceae_bacterium t_SGB5060                                | 0.693879572  | 0.236839729  | 0.386504622 | 0.365399985 | 0.801271016 | 0.245247835 | 0        | 0        | 0.705192189 | 1 |
| s_GGB35068_SGB47850 t_SGB47850                                       | -0.693305587 | -0.218234856 | 0.424901052 | 0.215121397 | 0.868861334 | 0.245118929 | 0        | 0        | 0.729120498 | 1 |
| s_Faecalibacterium_SGB15346 t_SGB15346                               | -0.693067348 | -0.457971318 | 0.09402992  | 0.168052162 | 0.413892013 | 0.247575456 | 0.357765 | 5.00E-04 | 0.388657004 | 1 |
| s_Lachnospiraceae_bacterium t_SGB4706                                | -0.692856991 | -0.445684814 | 0.103188498 | 0.24517833  | 0.462197297 | 0.247407999 | 0.005145 | 0        | 0.399631915 | 1 |
| s_Lachnospiraceae_bacterium t_SGB4722                                | -0.678627126 | -0.280781171 | 0.304590109 | 0.408619929 | 0.66101775  | 0.245593799 | 0        | 0        | 0.646732424 | 1 |
| s_Clostridium_sp_AF34_10B t_SGB4914                                  | -0.678140515 | -0.315061392 | 0.249328998 | 0.502927317 | 0.588673372 | 0.245904069 | 0.061685 | 0.04502  | 0.58554389  | 1 |
| s_Collinsella_tanaka t_SGB14737                                      | 0.67631554   | 0.227066839  | 0.406402155 | 0.058279708 | 0.814602125 | 0.245178817 | 0        | 0        | 0.734534332 | 1 |
| s_Pseudoflavonifractor_capillosus t_SGB15140                         | -0.672471148 | -0.355641785 | 0.193473339 | 0.427591578 | 0.516893971 | 0.2463169   | 0        | 0        | 0.507616072 | 1 |
| s_Lactonifractor_sp_BIOMI_A6 t_SGB4813                               | 0.663872779  | 0.278507505  | 0.308528581 | 0.272108974 | 0.651925315 | 0.2455477   | 0        | 0        | 0.648794551 | 1 |
| s_Clostridia_bacterium_12CBH8 t_SGB7259                              | -0.660557879 | -0.334411351 | 0.221431101 | 0.281892646 | 0.540231314 | 0.246094774 | 0        | 0        | 0.545313374 | 1 |
| s_Streptococcus_oralis t_SGB8130                                     | 0.660101508  | 0.221595227  | 0.417085622 | 0.440107119 | 0.81704068  | 0.245141437 | 0        | 0        | 0.723574023 | 1 |
| s_Eubacterium_callanderi t_SGB4080                                   | -0.658773451 | -0.193764508 | 0.478650521 | 0.521982957 | 0.929847538 | 0.244965343 | 0        | 0        | 0.757049293 | 1 |
| s_Flavonifractor_plautii t_SGB15132                                  | -0.6586615   | -0.47138197  | 0.084789689 | 0.256313434 | 0.382154684 | 0.247763307 | 0.127365 | 0.03501  | 0.371296956 | 1 |
| s_Lachnospiraceae_bacterium t_SGB4775                                | -0.65518425  | -0.470103187 | 0.085637846 | 0.772934766 | 0.381171253 | 0.247745167 | 0        | 0        | 0.371296956 | 1 |
| s_Clostridia_bacterium t_SGB14845                                    | -0.654007826 | -0.243699711 | 0.372898987 | 0.974776133 | 0.73396917  | 0.245298007 | 0        | 0        | 0.690596918 | 1 |
| s_GGB3476_SGB4643 t_SGB4643                                          | -0.652865362 | -0.186614126 | 0.495030147 | 0.548391164 | 0.956817256 | 0.244923992 | 0        | 0        | 0.756385329 | 1 |
| s_Clostridia_bacterium t_SGB14252                                    | 0.652439838  | 0.271705168  | 0.320488478 | 0.238646924 | 0.668738473 | 0.24551757  | 0        | 0        | 0.653218785 | 1 |
| s_Gemella_sanguinis t_SGB7208                                        | -0.649792127 | -0.308379127 | 0.250504526 | 0.20097167  | 0.57890715  | 0.245840856 | 0        | 0        | 0.598114521 | 1 |
| s_GGB787_SGB15410 t_SGB15410                                         | 0.649166634  | 0.302020978  | 0.269480564 | 0.985147941 | 0.58787507  | 0.245781777 | 0        | 0        | 0.612145064 | 1 |
| s_Eubacterium_sp_AM28_29 t_SGB6796_group                             | -0.646445884 | -0.211116493 | 0.401461828 | 0.94064319  | 0.837451948 | 0.24507238  | 0        | 0        | 0.734543432 | 1 |
| s_Roseburia_faecis t_SGB4925                                         | -0.639719469 | -0.347968097 | 0.109294258 | 0.40579173  | 0.399481783 | 0.247305082 | 0.6923   | 0.18551  | 0.40628826  | 1 |
| s_Clostridium_sp_AF36_4 t_SGB4644                                    | -0.63918161  | -0.355193593 | 0.194040337 | 0.237224387 | 0.492163083 | 0.246312071 | 0.05053  | 0.00015  | 0.507616072 | 1 |
| s_Clostridia_bacterium t_SGB5180                                     | 0.638803503  | 0.254543819  | 0.352004503 | 0.530860907 | 0.686364196 | 0.245380217 | 0        | 0        | 0.667411027 | 1 |
| s_GGB9608_SGB15042 t_SGB15042_group                                  | 0.636191462  | 0.214153378  | 0.436131051 | 0.957972671 | 0.812480214 | 0.245092051 | 0        | 0        | 0.734006284 | 1 |
| s_Parasuterrella_SGB9260 t_SGB9260                                   | 0.63598333   | 0.193921815  | 0.478293531 | 0.16089621  | 0.896951481 | 0.244966272 | 0        | 0        | 0.757049293 | 1 |
| s_Candidatus_Schneewindia_gallinarum t_SGB63326                      | -0.633968297 | -0.238300831 | 0.383581657 | 0.614952019 | 0.727598626 | 0.245258402 | 0        | 0        | 0.703611323 | 1 |
| s_Ruminococcus_sp_NSJ_7 t_SGB4290                                    | 0.632928046  | 0.150368161  | 0.582455459 | 0.555046074 | 1.151193526 | 0.244737659 | 0        | 0        | 0.806076751 | 1 |
| s_Solobacterium_SGB6833 t_SGB6833_group                              | -0.623339114 | -0.232734195 | 0.394790305 | 0.814325022 | 0.743087122 | 0.245218489 | 0        | 0        | 0.70980439  | 1 |
| s_Clostridia_unclassified_SGB66170 t_SGB66170                        | -0.623065658 | -0.28776967  | 0.29271119  | 0.128833203 | 0.600713044 | 0.245654185 | 0        | 0        | 0.636775498 | 1 |
| s_GGB3005_SGB3996 t_SGB3996                                          | -0.629431785 | -0.201518036 | 0.46123105  | 0.982966006 | 0.854249304 | 0.245012043 | 0.000295 | 0.00051  | 0.745845124 | 1 |
| s_Blauita_obum t_SGB4811_group                                       | -0.62899927  | -0.510736222 | 0.061840099 | 0.060741532 | 0.336824263 | 0.248344961 | 0.512175 | 0.17597  | 0.332905901 | 1 |
| s_Ruminococcaceae_bacterium t_SGB53515                               | 0.628984025  | 0.288046881  | 0.292246627 | 0.167194533 | 0.597208973 | 0.245656611 | 0        | 0        | 0.636775498 | 1 |
| s_Turicibacter_sanguinis t_SGB6847                                   | 0.628928946  | 0.244575353  | 0.369       |             |             |             |          |          |             |   |

|                                                         |              |              |              |              |             |             |          |         |             |   |
|---------------------------------------------------------|--------------|--------------|--------------|--------------|-------------|-------------|----------|---------|-------------|---|
| s_Bilophila_wadsworthia _SGB15452                       | -0.500413548 | -0.391935982 | 0.151839866  | 0.239588268  | 0.349191617 | 0.246727759 | 0.19602  | 0.13253 | 0.47308325  | 1 |
| s_GGB51441_SGB17159 _SGB17159                           | -0.496655998 | -0.293323815 | 0.283495362  | 0.276764571  | 0.463082183 | 0.245703225 | 0.003535 | 0       | 0.632729595 | 1 |
| s_Senegalimassilia_anaerobia _SGB14824_group            | 0.492409998  | 0.151936674  | 0.578527639  | 0.729090278  | 0.886368137 | 0.244744891 | 0        | 0       | 0.80521566  | 1 |
| s_Anaerofilum_sp_BX8 _SGB79822                          | -0.492084633 | -0.228724341 | 0.402985718  | 0.209709685  | 0.588406287 | 0.245190319 | 0        | 0       | 0.70980439  | 1 |
| s_Eubacterium_siraenum _SGB4198_group                   | 0.491749756  | 0.21706323   | 0.42739139   | 0.677217569  | 0.619594821 | 0.245111162 | 0        | 0       | 0.729120498 | 1 |
| s_Intestinibacter_SGB6139 _SGB6139                      | 0.490793108  | 0.148997187  | 0.585899771  | 0.323630682  | 0.900886899 | 0.244731399 | 0        | 0       | 0.807238307 | 1 |
| s_GGB9640_SGB15115 _SGB15115                            | 0.490487781  | 0.190081388  | 0.487050385  | 0.679256875  | 0.705729847 | 0.244943798 | 0        | 0       | 0.758721705 | 1 |
| s_Clostridium_innocuum _SGB4037_group                   | -0.489226914 | -0.208785359 | 0.445226977  | 0.85338832   | 0.640855605 | 0.245057469 | 0.00371  | 0.0085  | 0.736108603 | 1 |
| s_Faecalibacterium_prausnitzii _SGB15318_group          | -0.487397507 | -0.392859046 | 0.150877761  | 0.09462165   | 0.339309823 | 0.246738719 | 0.92483  | 0.1598  | 0.47308325  | 1 |
| s_Blautila_hydrogenotrophica _SGB4677                   | -0.479298649 | -0.189284904 | 0.488877292  | 0.338909224  | 0.692532427 | 0.244939193 | 0.00266  | 0       | 0.758833641 | 1 |
| s_Faecalibacterium_prausnitzii _SGB15317                | -0.478226937 | -0.22452145  | 0.412245312  | 0.976517066  | 0.583240019 | 0.245159475 | 0        | 0       | 0.717955319 | 1 |
| s_GGB612_SGB9346 _SGB9346                               | 0.474687222  | 0.151420446  | 0.579818985  | 0.713439019  | 0.857379128 | 0.244742503 | 0        | 0       | 0.80521566  | 1 |
| s_Faecalibacillus_faecis _SGB6750                       | 0.474188173  | 0.152380499  | 0.577418512  | 0.09923597   | 0.951081674 | 0.244746951 | 0        | 0       | 0.80521566  | 1 |
| s_GGB45620_SGB63333 _SGB63333                           | -0.473560563 | -0.192012252 | 0.482636881  | 0.907703883  | 0.64752255  | 0.244955041 | 0        | 0       | 0.757827881 | 1 |
| s_GGB9627_SGB1508 _SGB15081                             | -0.471520514 | -0.190866007 | 0.485254304  | 0.398871289  | 0.67565017  | 0.244948353 | 0        | 0       | 0.757827881 | 1 |
| s_Isoperitcola_variabilis _SGB17153_group               | -0.471475227 | 0.21319563   | 0.435672246  | 0.901197609  | 0.60482602  | 0.245085817 | 0        | 0       | 0.734006284 | 1 |
| s_Anaerotruncum_faecicola _SGB5190                      | -0.471277739 | -0.200615737 | 0.432338089  | 0.657240379  | 0.642483258 | 0.245006514 | 0.009015 | 0.03131 | 0.745993806 | 1 |
| s_Coprobacter_secundus _SGB1962                         | 0.467583096  | 0.176364755  | 0.51903123   | 0.630251849  | 0.725098305 | 0.244867183 | 0        | 0       | 0.779160319 | 1 |
| s_Ruminococcaceae_unclassified_SGB15265 _SGB15265_group | 0.466769365  | 0.24524527   | 0.369875071  | 0.631511433  | 0.520536984 | 0.245309507 | 0.00292  | 0       | 0.688656289 | 1 |
| s_Cloacibacillus_eryensis _SGB15506                     | 0.465825712  | 0.203207963  | 0.457479587  | 0.991590799  | 0.626949588 | 0.245022463 | 0        | 0       | 0.745845124 | 1 |
| s_Intestinimonas_gabonensis _SGB79840                   | -0.464856086 | -0.293049526 | 0.283945822  | 0.390563283  | 0.433837795 | 0.245700782 | 0.001385 | 0       | 0.632729595 | 1 |
| s_Candidatus_Aristotella_avistercoris _SGB63343         | -0.462732034 | -0.191749005 | 0.483237321  | 0.88786719   | 0.660003645 | 0.244953374 | 0        | 0       | 0.757827881 | 1 |
| s_Lachnospiraceae_bacterium_WCA3_601_WT_6H _SGB4910     | 0.461059001  | 0.181783793  | 0.506626372  | 0.797717578  | 0.693667314 | 0.244896769 | 0.008985 | 0.00382 | 0.776335243 | 1 |
| s_Faecalicatena_cortorta _SGB4613                       | 0.458379584  | 0.266792087  | 0.339216996  | 0.504971559  | 0.489896497 | 0.24547734  | 0.005895 | 0.00719 | 0.653218785 | 1 |
| s_Phocaeicola_vulgatus _SGB1814                         | -0.456896758 | -0.390321646 | 0.1535337    | 0.527181351  | 0.32014397  | 0.246708652 | 1.837815 | 1.1879  | 0.47308325  | 1 |
| s_Mediterraneibacter_glycyrrhizini _SGB4606             | 0.452275244  | 0.195493864  | 0.474733958  | 0.770277353  | 0.632731671 | 0.244975601 | 0.00148  | 0.00336 | 0.756645383 | 1 |
| s_Lachnospiraceae_bacterium _SGB4784                    | 0.452115204  | 0.1579382    | 0.563614932  | 0.951833172  | 0.782909954 | 0.244773255 | 0        | 0       | 0.792785486 | 1 |
| s_Eubacterium_ramulus _SGB4959                          | -0.450700836 | -0.260640192 | 0.340591629  | 0.4012737639 | 0.47293     | 0.245427993 | 0.04339  | 0       | 0.659714687 | 1 |
| s_Bacteroides_fragilis _SGB1855_group                   | 0.449488755  | 0.165275226  | 0.545639324  | 0.705138895  | 0.743808194 | 0.244809419 | 0        | 0       | 0.788569652 | 1 |
| s_Harryflintia_acetisporai _SGB14838                    | -0.444021421 | -0.259897357 | 0.341968957  | 0.6791566    | 0.467252835 | 0.245422111 | 0        | 0       | 0.659714687 | 1 |
| s_Parabacteroides_merdaxi _SGB1949                      | -0.441920246 | -0.281294257 | 0.33070725   | 0.613083342  | 0.429667911 | 0.245598182 | 0.181455 | 0.22065 | 0.646732424 | 1 |
| s_Actinomyces_graevenitzi _SGB17130                     | -0.440620771 | -0.175139066 | 0.521933007  | 0.373958286  | 0.688068733 | 0.244860615 | 0        | 0       | 0.781336118 | 1 |
| s_Clostridia_bacterium _SGB13573                        | 0.438397618  | 0.226586649  | 0.407433383  | 0.503072539  | 0.529198078 | 0.245175376 | 0        | 0       | 0.713583891 | 1 |
| s_Clostridia_bacterium _SGB13940                        | 0.431871043  | 0.121461191  | 0.659695202  | 0.918321724  | 0.972448106 | 0.244617775 | 0        | 0       | 0.855122964 | 1 |
| s_GGB9237_SGB14179 _SGB14179                            | -0.429878913 | -0.170822677 | 0.51085397   | 0.397892332  | 0.653799146 | 0.244885975 | 0        | 0       | 0.778645975 | 1 |
| s_Massilistercora_timonensis _SGB4628                   | -0.428457705 | -0.178727272 | 0.53212057   | 0.547192991  | 0.685782267 | 0.244838106 | 0        | 0       | 0.785702789 | 1 |
| s_GGB9705_SGB4427 _SGB15224                             | 0.426844277  | -0.163643584 | 0.549612119  | 0.325660652  | 0.713379077 | 0.244801235 | 0        | 0       | 0.790625322 | 1 |
| s_Clostridia_bacterium _SGB17347                        | 0.424365051  | 0.141577682  | 0.604686529  | 0.938694354  | 0.819770568 | 0.244698511 | 0        | 0       | 0.82217338  | 1 |
| s_Prevotella_bivia _SGB1557                             | 0.423195272  | 0.166314409  | 0.534116521  | 0.968022582  | 0.695922402 | 0.244814673 | 0        | 0       | 0.788569652 | 1 |
| s_Clostridia_bacterium _SGB14954                        | 0.42204137   | 0.191240383  | 0.484398581  | 0.350345996  | 0.603566748 | 0.244950533 | 0        | 0       | 0.757827881 | 1 |
| s_Streptococcus_mutans _SGB8000                         | 0.421566391  | 0.159463936  | 0.559853053  | 0.211198411  | 0.723025123 | 0.244780641 | 0        | 0       | 0.792785486 | 1 |
| s_Clostridia_bacterium _SGB14311                        | 0.420053936  | 0.163780784  | 0.54927757   | 0.438880509  | 0.701442377 | 0.24480192  | 0        | 0       | 0.790625322 | 1 |
| s_Eggerthellaceae_bacterium _SGB14334                   | -0.418875391 | -0.125248113 | 0.646898507  | 0.637128452  | 0.914668115 | 0.244632032 | 0        | 0       | 0.851658731 | 1 |
| s_Firmicutes_bacterium _SGB49188                        | -0.417467547 | -0.221798148 | 0.417379425  | 0.625278442  | 0.514771733 | 0.245142807 | 0        | 0       | 0.723574023 | 1 |
| s_Faecalibacillus_intestinalis _SGB6754                 | -0.417427368 | -0.243574258 | 0.373145109  | 0.558698504  | 0.468704819 | 0.245297077 | 0.08805  | 0.06897 | 0.690596918 | 1 |
| s_Fusicatenibacter_saccharivorans _SGB4874              | -0.415007157 | -0.365293067 | 0.181668432  | 0.042359303  | 0.310716305 | 0.246422326 | 0.840245 | 0.32654 | 0.494303283 | 1 |
| s_Clostridium_phocensis _SGB15154                       | -0.414209117 | -0.283279768 | 0.300306849  | 0.245005035  | 0.399902374 | 0.24561522  | 0.12337  | 0.08935 | 0.643216418 | 1 |
| s_Bifidobacterium_longum _SGB17248                      | 0.41221389   | 0.218350843  | 0.424659779  | 0.710961414  | 0.51631844  | 0.2451197   | 0.316615 | 0.22142 | 0.729120498 | 1 |
| s_Firmicutes_bacterium_AF16_15 _SGB4993                 | -0.411249559 | -0.202654417 | 0.504850875  | 0.255207368  | 0.555008018 | 0.24501904  | 0.045745 | 0.01504 | 0.745845124 | 1 |
| s_Massilimalliae_massiliensis _SGB29347                 | 0.410153004  | 0.273647595  | 0.370411222  | 0.667770673  | 0.409924757 | 0.245533675 | 0        | 0       | 0.650879125 | 1 |
| s_Clostridia_bacterium _SGB14182                        | -0.408483623 | -0.097950289 | 0.72023663   | 0.938789636  | 1.140561776 | 0.24453094  | 0        | 0       | 0.886235427 | 1 |
| s_Lachnospiraceae_bacterium _SGB4782                    | -0.40187026  | -0.267924348 | 0.327268546  | 0.274961511  | 0.410226368 | 0.245486547 | 0.009975 | 0       | 0.653218785 | 1 |
| s_Barnesiella_intestinihominis _SGB1965                 | 0.399735499  | 0.264778588  | 0.329802931  | 0.356179591  | 0.412895113 | 0.245461063 | 0.00254  | 0.13046 | 0.656206172 | 1 |
| s_Lachnospiraceae_bacterium _SGB4780                    | -0.395922349 | -0.338290669 | 0.216118348  | 0.268558668  | 0.320088363 | 0.246134356 | 0.044275 | 0.03044 | 0.540295871 | 1 |
| s_Clostridia_bacterium _SGB15403                        | -0.394178517 | -0.178634312 | 0.51365758   | 0.848735206  | 0.300300948 | 0.244879465 | 0        | 0       | 0.778649632 | 1 |
| s_Anaerobutyricum_hallii _SGB4537                       | 0.386807667  | 0.196938635  | 0.417147544  | 0.832725836  | 0.53717283  | 0.24498424  | 0.02484  | 0.03306 | 0.753388602 | 1 |
| s_Clostridia_bacterium _SGB3991                         | -0.386451832 | -0.129523896 | 0.635794261  | 0.608705127  | 0.81600977  | 0.244648655 | 0        | 0       | 0.84330475  | 1 |
| s_Alistipes_dispar _SGB2311                             | 0.381872554  | 0.132506029  | 0.628037421  | 0.137289689  | 0.78819322  | 0.244660577 | 0        | 0       | 0.839187933 | 1 |
| s_Clostridium_sp_AF20_17L _SGB4714                      | -0.381566754 | -0.204491917 | 0.546442295  | 0.465309505  | 0.510321972 | 0.245030438 | 0.000285 | 0.00131 | 0.745614438 | 1 |
| s_Collinsella_aerofaciens _SGB14546_group               | -0.379048797 | -0.277787336 | 0.309775494  | 0.190189987  | 0.373192207 | 0.24556838  | 0.783685 | 0.55994 | 0.648854075 | 1 |
| s_Phocaeicola_massiliensis _SGB1812                     | -0.378947845 | -0.170598893 | 0.5362776911 | 0.868221527  | 0.607509856 | 0.244836683 | 0        | 0       | 0.785702789 | 1 |
| s_Ruthenibacterium_bacterales _SGB15271                 | 0.377749382  | 0.2577074935 | 0.436052427  | 0.877229717  | 0.409258967 | 0.24504087  | 0.089915 | 0.1313  | 0.660161554 | 1 |
| s_Clostridia_bacterium _SGB15413                        | 0.377407514  | 0.16037309   | 0.557632151  | 0.74247687   | 0.643642316 | 0.244785047 | 0        | 0       | 0.792785486 | 1 |
| s_Eubacteriaceae_bacterium _SGB3958                     | -0.37708307  | -0.146959272 | 0.591034546  | 0.970872278  | 0.701762134 | 0.244722199 | 0        | 0       | 0.808921454 | 1 |
| s_Christensenella_massiliensis _SGB29339                | -0.375397431 | -0.145456542 | 0.594839402  | 0.705842695  | 0.244715496 | 0           | 0.036885 | 0.01992 | 0.752639051 | 1 |
| s_Clostridium_leptum _SGB14853                          | -0.372537223 | -0.197687008 | 0.469482424  | 0.330084692  | 0.515396459 | 0.24498874  | 0.036885 | 0.01992 | 0.752639051 | 1 |
| s_GGB9705_SGB15225 _SGB15225                            | 0.365840247  | 0.17715675   | 0.5517146277 | 0.740103072  | 0.564785663 | 0.244871451 | 0        | 0       | 0.779160319 | 1 |
| s_Eubacterium_sulci _SGB3934                            | -0.364260433 | -0.191996555 | 0.482672673  | 0.927083573  | 0.518881813 | 0.24495495  | 0        | 0       | 0.757827881 | 1 |
| s_Clostridia_bacterium _SGB14861                        | -0.356197113 | -0.210613391 | 0.441252177  | 0.599853875  | 0.462545332 | 0.245069148 | 0.23166  | 0.07261 | 0.734543432 | 1 |
| s_Ruminococcus_SGB4421 _SGB4421                         | -0.352556709 | -0.134138781 | 0.682807728  | 0.979181993  | 0.718827219 | 0.24466722  | 0        | 0       | 0.835336482 | 1 |
| s_GGB4566_SGB6305 _SGB6305                              | 0.35162754   | 0.121152375  | 0.65787173   | 0.716605096  | 0.793781248 | 0.244616632 | 0        | 0       | 0.855122964 | 1 |
| s_GGB58233_SGB79883 _SGB79883                           | 0.349916472  | 0.172592083  | 0.528008098  | 0.067007892  | 0.554489598 | 0.24484711  | 0        | 0       | 0.785037428 | 1 |
| s_Bacteroides_xylanisolvens _SGB1867                    | 0.348649562  | 0.148235658  | 0.587815487  | 0.469567718  | 0.643259674 | 0.244727946 | 0.096745 | 0.17092 | 0.808083374 | 1 |
| s_GGB58158_SGB79798 _SGB79798                           | 0.346937637  | 0.274904845  | 0.31482281   | 0.552954369  | 0.345158766 | 0.245544161 | 0.000935 | 0.00087 | 0.650879125 | 1 |
| s_GGB9557_SGB14966 _SGB14966                            | -0.34435366  | -0.229269077 | 0.40186643   | 0.390563283  | 0.410781861 | 0.245194117 | 0.00525  | 0.00252 | 0.70980439  | 1 |
| s_Blautila_schinkii _SGB4825                            | 0.344158262  | 0.149478557  | 0.584688997  | 0.542473266  | 0.62969347  | 0.24473359  | 0        | 0       | 0.80        |   |

|                                                     |              |               |             |             |              |             |          |         |             |             |
|-----------------------------------------------------|--------------|---------------|-------------|-------------|--------------|-------------|----------|---------|-------------|-------------|
| s_Clostridia_bacterium t_SGB14874                   | -0.265606959 | -0.105807526  | 0.698851383 | 0.794960882 | 0.686550955  | 0.244563479 | 0        | 0       | 0.878692576 | 1           |
| s_Clostridium_sp_AM33_3 t_SGB4711                   | -0.264296703 | -0.168186419  | 0.538586589 | 0.218071881 | 0.429784459  | 0.244824221 | 0.00571  | 0       | 0.785702789 | 1           |
| s_GGB2980_SGB3962 t_SGB3962                         | -0.259595824 | -0.116081705  | 0.671246675 | 0.760160384 | 0.611623002  | 0.244598274 | 0        | 0       | 0.858088533 | 1           |
| s_GGB9347_SGB14313 t_SGB14313                       | -0.259577164 | -0.071566561  | 0.793572932 | 0.537808871 | 0.991987548  | 0.244470757 | 0        | 0       | 0.914526427 | 1           |
| s_GGB9730_SGB15291 t_SGB15291                       | -0.254525467 | -0.160491775  | 0.557326431 | 0.727295072 | 0.433738876  | 0.244785656 | 0.01268  | 0       | 0.792785468 | 1           |
| s_Parabacteroides_distans t_SGB1934                 | -0.252724657 | -0.179492051  | 0.511637993 | 0.756732729 | 0.385081171  | 0.244884148 | 0.323075 | 0.37041 | 0.778649632 | 1           |
| s_Butyricomonas_paravivosa t_SGB1785                | 0.250948457  | 0.105032116   | 0.700951575 | 0.951449137 | 0.65344991   | 0.244560983 | 0        | 0       | 0.878692576 | 1           |
| s_Coriobacterium_bacterium t_SGB14770               | 0.244589875  | 0.100906061   | 0.712165088 | 0.885411181 | 0.662935246  | 0.244548013 | 0        | 0       | 0.883084709 | 1           |
| s_Lacrimispora_amygdalinal t_SGB4716                | -0.244070939 | -0.157822509  | 0.656900644 | 0.467667651 | 0.422957778  | 0.244772698 | 0.022065 | 0.01567 | 0.792785486 | 1           |
| s_Lachnospiraceae_bacterium t_SGB4767               | -0.243625761 | -0.178970078  | 0.512866059 | 0.325495718 | 0.372299685  | 0.244881295 | 0.018835 | 0.00264 | 0.778649632 | 1           |
| s_Candidatus_Alloruminococcus_vanvleetii t_SGB63325 | -0.24178805  | -0.232573758  | 0.284728318 | 0.811162576 | 0.22602129   | 0.245696549 | 0        | 0       | 0.632729595 | 1           |
| s_Clostridia_bacterium t_SGB14253                   | 0.240686613  | 0.077693307   | 0.77632553  | 0.877292408 | 0.847196591  | 0.24448472  | 0        | 0       | 0.910537204 | 1           |
| s_GGB9608_SGB15041 t_SGB15041                       | 0.240059418  | 0.081335778   | 0.766165987 | 0.654459687 | 0.807210888  | 0.244493564 | 0        | 0       | 0.910055555 | 1           |
| s_Clostridia_bacterium t_SGB4269                    | 0.237179514  | 0.165570016   | 0.544923078 | 0.540852781 | 0.391782804  | 0.244810906 | 0.33728  | 0.26367 | 0.78569652  | 1           |
| s_Blauita_hansenii t_SGB4794_group                  | -0.232867416 | -0.062321079  | 0.819748152 | 0.73927586  | 1.02193588   | 0.244451854 | 0        | 0       | 0.922402639 | 1           |
| s_Gemmiger_fornicilis t_SGB15300                    | -0.232004891 | -0.06597277   | 0.557067656 | 0.13127501  | 0.395101658  | 0.244786172 | 0.49618  | 0.34608 | 0.792785486 | 1           |
| s_Roseburia_sp_AM59_24X t_SGB4654                   | -0.230113485 | -0.075411729  | 0.782753019 | 0.974776133 | 0.834551345  | 0.244479386 | 0        | 0       | 0.910537204 | 1           |
| s_Lachnospiraceae_bacterium t_SGB4832               | -0.226352961 | -0.12175949   | 0.656176873 | 0.282946615 | 0.508432433  | 0.244618882 | 0.00777  | 0       | 0.855122964 | 1           |
| s_Granulicatella_adiacens t_SGB8249                 | -0.224819678 | -0.116570826  | 0.66993414  | 0.603424684 | 0.527465837  | 0.24460001  | 0        | 0       | 0.858088533 | 1           |
| s_Eubacterium_ventriosum t_SGB5045                  | 0.221798089  | 0.118937891   | 0.66364887  | 0.088782564 | 0.510020289  | 0.244608518 | 0.08719  | 0.0126  | 0.855430976 | 1           |
| s_Streptococcus_rubnerii t_SGB8056                  | 0.219890437  | 0.09242306    | 0.735413766 | 0.408619929 | 0.650692631  | 0.244522977 | 0        | 0       | 0.894032421 | 1           |
| s_Hungatella_hathewayii t_SGB4739                   | -0.219748841 | -0.063345009  | 0.816838782 | 0.33222596  | 0.948776847  | 0.244453819 | 0        | 0       | 0.922402639 | 1           |
| s_Clostridium_sp_chd4_2 t_SGB4743                   | 0.218166908  | 0.089559733   | 0.743317344 | 0.867655294 | 0.666232744  | 0.244515022 | 0        | 0       | 0.889091126 | 1           |
| s_Streptococcus_salivarius t_SGB8007_group          | 0.216864442  | 0.089662937   | 0.743317344 | 0.439788323 | 0.60115186   | 0.244541179 | 0.05077  | 0.03761 | 0.886235642 | 1           |
| s_GGB9635_SGB15106 t_SGB15106                       | 0.213213923  | 0.085255063   | 0.755250358 | 0.256416853 | 0.683982936  | 0.244503533 | 0        | 0       | 0.90396749  | 1           |
| s_Dysosmobacter_welbionis t_SGB15078                | -0.213052619 | -0.174163408  | 0.524251321 | 0.378922541 | 0.334564494  | 0.244855419 | 0.268985 | 0.23673 | 0.781336118 | 1           |
| s_Coprococcus_catus t_SGB4670                       | -0.212970097 | -0.174662314  | 0.523063653 | 0.536833342 | 0.333479626  | 0.244858072 | 0.102325 | 0.05839 | 0.781336118 | 1           |
| s_Candidatus_Avimonas_narfarii t_SGB14941           | 0.212644971  | 0.103816495   | 0.704246874 | 0.889644283 | 0.560194242  | 0.244557108 | 0        | 0       | 0.878692576 | 1           |
| s_GGB3463_SGB4621 t_SGB4621                         | -0.211729238 | -0.053849496  | 0.843910746 | 0.781117951 | 0.1075348114 | 0.244436825 | 0        | 0       | 0.941051551 | 1           |
| s_GGB9615_SGB15053 t_SGB15053_group                 | 0.209643537  | 0.138859479   | 0.611648594 | 0.811601329 | 0.41291041   | 0.244686882 | 0.02945  | 0.08897 | 0.827959513 | 1           |
| s_Holdemania_sp_Marseille_P284 t_SGB4045            | 0.209576771  | 0.103545325   | 0.704984923 | 0.772306576 | 0.553557242  | 0.244556525 | 0        | 0       | 0.78692576  | 1           |
| s_Veillonella_rogosae t_SGB6956                     | 0.209223876  | 0.078415264   | 0.774330395 | 0.247331782 | 0.729727173  | 0.244486441 | 0        | 0       | 0.910537204 | 1           |
| s_Akkermansia_muciniphila t_SGB9226                 | 0.20888829   | 0.088239274   | 0.746971369 | 0.44969904  | 0.64744337   | 0.244511438 | 0        | 0       | 0.899266503 | 1           |
| s_Christensenellaceae_bacterium_NSJ_53 t_SGB82545   | -0.208615124 | -0.169820599  | 0.534647714 | 0.855864718 | 0.33597372   | 0.244832643 | 0        | 0       | 0.87502789  | 1           |
| s_Christensenella_minutula t_SGB14142               | 0.207127052  | 0.094311923   | 0.730215212 | 0.438850509 | 0.600648106  | 0.244528362 | 0        | 0       | 0.892965348 | 1           |
| s_Collinsella_intestinalis t_SGB14741               | -0.201969698 | -0.058435451  | 0.830810944 | 0.903850904 | 0.945285556  | 0.24444689  | 0        | 0       | 0.930023643 | 1           |
| s_Oribacter_spirillum t_SGB1790                     | -0.199771427 | -0.184689004  | 0.499490713 | 0.913364701 | 0.29830004   | 0.244512997 | 0.12302  | 0.14151 | 0.770358812 | 1           |
| s_GGB9644_SGB15121 t_SGB15121                       | 0.198646023  | 0.097521126   | 0.721411289 | 0.52714257  | 0.557097302  | 0.24453776  | 0        | 0       | 0.886235642 | 1           |
| s_Blauita_sp_AF19_10LB t_SGB4810                    | 0.197535424  | 0.092654688   | 0.734774868 | 0.302875363 | 0.583074192  | 0.244523934 | 0        | 0       | 0.894032421 | 1           |
| s_GGB3571_SGB4778 t_SGB4778                         | -0.195642215 | -0.137975572  | 0.613917288 | 0.713364992 | 0.387603969  | 0.244683149 | 0.00123  | 0       | 0.829256468 | 1           |
| s_GGB9522_SGB14921 t_SGB14921                       | -0.193928881 | -0.103249454  | 0.705788553 | 0.843419567 | 0.513694145  | 0.244555316 | 0        | 0       | 0.878692576 | 1           |
| s_Ruminococcaceae_bacterium t_SGB15249              | 0.193920386  | 0.103600801   | 0.705848033 | 0.96529866  | 0.513121854  | 0.244555665 | 0.00081  | 0       | 0.78692576  | 1           |
| s_Coprococcus_comes t_SGB4577_group                 | -0.193236192 | -0.168428183  | 0.538002949 | 0.422340845 | 0.313777898  | 0.244825462 | 0.279155 | 0.22025 | 0.78502789  | 1           |
| s_Enterocloster_citroniae t_SGB4761                 | -0.191608774 | -0.120643771  | 0.659127399 | 0.889893828 | 0.434370554  | 0.244614755 | 0.00193  | 0.00148 | 0.855122964 | 1           |
| s_Amedibacillus_dolichus t_SGB4035                  | 0.191192503  | 0.064543883   | 0.813435538 | 0.080206944 | 0.81015041   | 0.244456161 | 0        | 0       | 0.922402639 | 1           |
| s_Christensenella_timonensis t_SGB29340             | 0.191139264  | 0.117414128   | 0.6684241   | 0.963385837 | 0.446261922  | 0.244602045 | 0        | 0       | 0.858018514 | 1           |
| s_Bacteroides_cellulosilyticus t_SGB1844            | -0.191046699 | -0.1037406957 | 0.789402416 | 0.41569567  | 0.715298465  | 0.244474026 | 0        | 0.03472 | 0.914526427 | 1           |
| s_Enterocloster_aldensis t_SGB4762                  | 0.188859662  | 0.075406297   | 0.782768273 | 0.614333543 | 0.684985658  | 0.244479374 | 0        | 0       | 0.910537204 | 1           |
| s_Sellimonas_intestinalis t_SGB4617                 | -0.185704562 | -0.077453168  | 0.776812273 | 0.59452527  | 0.655742414  | 0.244484151 | 0        | 0       | 0.910537204 | 1           |
| s_Methanobrevibacter_smithii t_SGB714_group         | 0.180711706  | 0.085954412   | 0.753307538 | 0.980562991 | 0.575002021  | 0.244505361 | 0        | 0       | 0.930836216 | 1           |
| s_GGB9621_SGB15073 t_SGB15073                       | -0.180120098 | -0.080634972  | 0.768122773 | 0.940335485 | 0.61092602   | 0.244491831 | 0        | 0       | 0.910537204 | 1           |
| s_Ruminococcaceae_bacterium t_SGB14869              | 0.179411207  | 0.067058592   | 0.806308537 | 0.140372691 | 0.731720169  | 0.244461214 | 0        | 0       | 0.919661338 | 1           |
| s_Alistipes_humii t_SGB2328                         | -0.178901867 | -0.081399202  | 0.765988496 | 0.806662921 | 0.6109707    | 0.244493722 | 0        | 0       | 0.910005555 | 1           |
| s_Hungatella_hathewayii t_SGB4742                   | -0.17887042  | -0.069820364  | 0.798493981 | 0.624635276 | 0.700658354  | 0.244466987 | 0        | 0.0024  | 0.916796114 | 1           |
| s_Actinomyces_bouchesdurhonenis t_SGB17152          | 0.173151425  | 0.071985151   | 0.792399041 | 0.513464246 | 0.657859326  | 0.244471674 | 0        | 0       | 0.914526427 | 1           |
| s_Ruminococcus_bromii t_SGB4285_group               | -0.172027716 | -0.07862913   | 0.693295564 | 0.792301121 | 0.634190463  | 0.244570182 | 0.14262  | 0.00106 | 0.877667503 | 1           |
| s_Clostridiales_unclassified_SGB15145 t_SGB15145    | -0.171305269 | -0.068176808  | 0.803144777 | 0.785457797 | 0.687202266  | 0.244463523 | 0        | 0       | 0.918726498 | 1           |
| s_Lactocaseibacillus_paracasei t_SGB7142            | -0.169457694 | -0.081564208  | 0.76552846  | 0.66995138  | 0.568213508  | 0.244494133 | 0        | 0       | 0.910005555 | 1           |
| s_Lachnospiraceae_bacterium t_SGB4750               | -0.168691739 | -0.078959541  | 0.77280692  | 0.002412688 | 0.584304306  | 0.244487749 | 0.032635 | 0       | 0.910537204 | 0.563961195 |
| s_Enterocloster_clostridioformis t_SGB4760          | 0.166955016  | 0.048780956   | 0.858439308 | 0.78870596  | 0.93050013   | 0.244428881 | 0        | 0       | 0.952115154 | 1           |
| s_Alistipes_finegoldii t_SGB2301                    | -0.164932046 | -0.092835176  | 0.734278489 | 0.198115207 | 0.485894929  | 0.244524143 | 0.0772   | 0       | 0.894032421 | 1           |
| s_Corynebacterium_dumii t_SGB17008                  | -0.164683713 | -0.107338226  | 0.694712263 | 0.7172721   | 0.419610284  | 0.244584549 | 0        | 0       | 0.871667804 | 1           |
| s_Clostridia_unclassified_SGB15402 t_SGB15402       | 0.164157858  | 0.08950688    | 0.743576882 | 0.947596183 | 0.501585478  | 0.244514883 | 0        | 0       | 0.889091126 | 1           |
| s_Roseburia_inulinivorans t_SGB4940                 | -0.163748515 | -0.075479781  | 0.782561898 | 0.026905554 | 0.593330436  | 0.244479543 | 0.102575 | 0.00297 | 0.910537204 | 1           |
| s_Intestinibacter_bartlettii t_SGB6140              | 0.159001437  | 0.07326481    | 0.788789195 | 0.325495718 | 0.593547535  | 0.244474512 | 0.007055 | 0.01729 | 0.914526427 | 1           |
| s_Monoglobus_pectinilyticus t_SGB4166               | -0.158818823 | -0.061578529  | 0.82185957  | 0.310044494 | 0.705379035  | 0.244450449 | 0        | 0       | 0.923103141 | 1           |
| s_Parasutierella_excrementihominis t_SGB9262        | -0.157353358 | -0.094724929  | 0.729080171 | 0.878430914 | 0.454319747  | 0.244529554 | 0.010005 | 0.01767 | 0.892965348 | 1           |
| s_Gemmiger_SGB15295 t_SGB15295_group                | -0.152598682 | -0.044539652  | 0.870633833 | 0.521982597 | 0.937030768  | 0.244422836 | 0        | 0       | 0.958779709 | 1           |
| s_Clostridia_unclassified_SGB6276 t_SGB6276         | -0.151697653 | -0.04732489   | 0.88626211  | 0.783666363 | 0.876676037  | 0.244426744 | 0        | 0       | 0.955045098 | 1           |
| s_GGB9602_SGB15031 t_SGB15031                       | 0.150929902  | 0.063945252   | 0.815134437 | 0.575240027 | 0.645530662  | 0.244454986 | 0        | 0       | 0.922402639 | 1           |
| s_Ruminococcaceae_bacterium t_SGB14906              | -0.150804336 | -0.050023935  | 0.85487171  | 0.26672070  | 0.824490897  | 0.244430756 | 0        | 0.00312 | 0.951526833 | 1           |
| s_Dorea_fornicigerans t_SGB4575                     | -0.148526506 | -0.114781745  | 0.674715946 | 0.67663559  | 0.353903081  | 0.244593693 | 0.166505 | 0.11183 | 0.860748738 | 1           |
| s_Actinomyces_sp_ICM47 t_SGB17167                   | 0.148222347  | 0.072184727   | 0.791830733 | 0.613983297 | 0.561588565  | 0.244472114 | 0        | 0       | 0.914526427 | 1           |
| s_Oscillibacter_sp_NSJ_62 t_SGB79833                | -0.145896677 | -0.058313236  | 0.831159459 | 0.752396331 | 0.684280392  | 0.244444471 | 0        | 0       | 0.930023643 | 1           |
| s_Clostridiales_bacterium_KLE1615 t_SGB5090_group   | 0.14400957   | 0.113392837   | 0.67843025  | 0.227316512 | 0.347340656  | 0.244588857 | 0.167005 | 0.07149 | 0.86370997  | 1           |
| s_Clostridia_unclassified_SGB4121 t_SGB4121         | 0.141405997  | 0.139794392   | 0.609523034 | 0.908281429 | 0.27648275   | 0.244690857 | 0.04291  | 0.03197 | 0.826557727 | 1           |
| s_Clostridia_bacterium_UC5_1_10 t_SGB14995          | -0.140030931 | -0.089115315  | 0.744546514 |             |              |             |          |         |             |             |

|                                                   |              |              |             |             |             |             |          |         |             |   |
|---------------------------------------------------|--------------|--------------|-------------|-------------|-------------|-------------|----------|---------|-------------|---|
| s_Actinomyces_SGB17168 t_SGB17168                 | 0.045284346  | 0.023254197  | 0.932240766 | 0.855802743 | 0.532594451 | 0.244400796 | 0        | 0       | 0.978046165 | 1 |
| s_Sanguibacteroides_justesenii t_SGB1776          | 0.045028123  | 0.013326768  | 0.961136386 | 0.654459687 | 0.924078535 | 0.244395249 | 0        | 0       | 0.984110725 | 1 |
| s_Lachnospiraceae_bacterium_OM04_12BH t_SGB4893   | -0.044708158 | -0.013895404 | 0.959479524 | 0.782141094 | 0.879965191 | 0.244395486 | 0        | 0       | 0.984110725 | 1 |
| s_Romboutsia_timonensis t_SGB6148                 | -0.041606901 | -0.031552183 | 0.908154671 | 0.898342386 | 0.360649926 | 0.244407742 | 0.07166  | 0.05505 | 0.969970088 | 1 |
| s_GGB9619_SGB15067 t_SGB15067                     | 0.041336129  | 0.023234217  | 0.932298844 | 0.643654243 | 0.486577084 | 0.244400782 | 0.00248  | 0       | 0.978046165 | 1 |
| s_GGB9615_SGB15051 t_SGB15051                     | -0.040962222 | -0.015924293 | 0.953569325 | 0.830910116 | 0.703514803 | 0.24439641  | 0        | 0       | 0.984110725 | 1 |
| s_Clostridia_bacterium t_SGB3574                  | 0.039726343  | 0.028256407  | 0.917712277 | 0.819787588 | 0.384513449 | 0.244404732 | 0.01445  | 0.01268 | 0.971888654 | 1 |
| s_Clostridium_sp_AM49_4BH t_SGB4652               | 0.038832872  | 0.017130271  | 0.950057472 | 0.768484789 | 0.619990691 | 0.244397019 | 0        | 0       | 0.984110725 | 1 |
| s_GGB9581_SGB14999 t_SGB14999                     | -0.037626185 | -0.024702402 | 0.92803204  | 0.713364992 | 0.416582366 | 0.244401857 | 0.001435 | 0       | 0.976875831 | 1 |
| s_Anaerostipes_hadrus t_SGB4540_group             | -0.036881602 | -0.031114568 | 0.909423001 | 0.814145731 | 0.324187216 | 0.244407324 | 0.543585 | 0.62824 | 0.969970088 | 1 |
| s_Alistipes_indistinctus t_SGB2325                | -0.036849643 | -0.013068535 | 0.96188887  | 0.078770757 | 0.77118092  | 0.244395145 | 0        | 0.0292  | 0.984110725 | 1 |
| s_Hungateella_hathewayi t_SGB4741                 | 0.035683175  | 0.010161967  | 0.970360693 | 0.138212493 | 0.96036336  | 0.244394114 | 0        | 0.00169 | 0.986268245 | 1 |
| s_Actinomyces_sp_S6_Spd3 t_SGB17132_group         | -0.035389478 | -0.021422556 | 0.937566518 | 0.267867175 | 0.45180678  | 0.244395546 | 0        | 0       | 0.98191088  | 1 |
| s_Lachnospiraceae_bacterium t_SGB4594             | -0.031772009 | -0.013474306 | 0.960706482 | 0.760946034 | 0.644893742 | 0.24439531  | 0        | 0       | 0.984110725 | 1 |
| s_Intestinibacillus_sp_Marseille_P6563 t_SGB29313 | -0.027961696 | -0.014766579 | 0.956941481 | 0.727986141 | 0.517885221 | 0.244395867 | 0        | 0       | 0.984110725 | 1 |
| s_Clostridiaceae_bacterium t_SGB4721              | -0.023461171 | -0.015796903 | 0.953940341 | 0.469008048 | 0.406188489 | 0.244396348 | 0.060545 | 0.02453 | 0.984110725 | 1 |
| s_Clostridia_bacterium t_SGB14854                 | 0.022190824  | 0.014320823  | 0.958240073 | 0.901693968 | 0.423794532 | 0.244395669 | 0.007165 | 0.00537 | 0.984110725 | 1 |
| s_Enterocloster_lavalensis t_SGB4725              | 0.022017578  | 0.011660667  | 0.965991927 | 0.257515675 | 0.516411633 | 0.244394613 | 0.00122  | 0.00552 | 0.98585181  | 1 |
| s_Ruminococcaceae_bacterium t_SGB14899            | 0.020820257  | 0.01536546   | 0.955196977 | 0.415953393 | 0.370587185 | 0.244396143 | 0.006545 | 0.0252  | 0.984110725 | 1 |
| s_Blautila_SGB4815 t_SGB4815_group                | -0.018851416 | -0.011393449 | 0.966770807 | 0.630405167 | 0.452520889 | 0.244394519 | 0.035655 | 0.06781 | 0.98585181  | 1 |
| s_GGB9694_SGB15204 t_SGB15204                     | -0.017404658 | -0.006156192 | 0.982041682 | 0.67675111  | 0.773220287 | 0.244393115 | 0        | 0       | 0.990025761 | 1 |
| s_Clostridiales_bacterium_1_7_47FAA t_SGB4763     | 0.016581065  | 0.007785799  | 0.977289083 | 0.682107991 | 0.582450669 | 0.244393462 | 0        | 0       | 0.988790035 | 1 |
| s_Marvinbryantia_SGB4691 t_SGB4691                | 0.015136313  | 0.007814407  | 0.977205656 | 0.473565123 | 0.529753654 | 0.244393469 | 0        | 0       | 0.988790035 | 1 |
| s_Christensenellaceae_bacterium t_SGB3813         | -0.01413093  | -0.007123304 | 0.979221099 | 0.241562203 | 0.542549235 | 0.244393312 | 0        | 0       | 0.988790035 | 1 |
| s_GGB9633_SGB15091 t_SGB15091                     | 0.013452445  | 0.005366543  | 0.98434486  | 0.843116657 | 0.68557737  | 0.244392976 | 0        | 0       | 0.99073671  | 1 |
| s_Holdemania_filiformis t_SGB4046                 | 0.013043404  | 0.007252063  | 0.978845593 | 0.540031684 | 0.491902754 | 0.244393334 | 0.000565 | 0.00577 | 0.988790035 | 1 |
| s_Butyricimonas_faecihominis t_SGB1786            | 0.01192533   | 0.00416882   | 0.987838517 | 0.955464402 | 0.78236086  | 0.244392802 | 0        | 0       | 0.992641622 | 1 |
| s_Anaerobutyricum_hallii t_SGB4532                | -0.010926941 | -0.01028644  | 0.969997815 | 0.645808622 | 0.290524933 | 0.244394153 | 0.478005 | 0.57065 | 0.986268245 | 1 |
| s_GGB9646_SGB15123 t_SGB15123                     | -0.005119434 | -0.002712403 | 0.992087071 | 0.832276389 | 0.516199533 | 0.244392649 | 0        | 0       | 0.995285067 | 1 |
| s_Gordonibacter_uroolithinifaciens t_SGB14808     | 0.004348072  | 0.002166443  | 0.993679769 | 0.779754051 | 0.54890769  | 0.244392608 | 0        | 0       | 0.995285067 | 1 |
| s_Ruminococcus_bircirculans t_SGB4262             | -0.002185555 | -0.001088413 | 0.996824715 | 0.793062338 | 0.54918403  | 0.244392555 | 0.079265 | 0.03154 | 0.996824715 | 1 |