```
k_Bacteria;p_Actinobacteria;c_Actinobacteria;o_Actinomycetales;f_Actinomycetaceae;g_Varibaculum
k_Bacteria;p_Actinobacteria;c_Actinobacteria;o_Actinomycetales;f_Micrococcaceae;g_Rothia
            {\tt k\_Bacteria;p\_Actinobacteria;c\_Actinobacteria;o\_Bifidobacteriales;f\_Bifidobacteriaceae;g\_Bifidobacterium}
           \label{lem:k_Bacteria} $$k\_Bacteria; p\_Actinobacteria; c\_Coriobacteriia; o\_Coriobacteriales; f\_Coriobacteriaceae; g\_Coriobacteriaceae; g\_Coriobacteriaceae
k_Bacteria;p_Actinobacteria;c_Coriobacteriia;o_Coriobacteriales;f_Coriobacteriaceae;g_Adlercreutzia
k_Bacteria;p_Actinobacteria;c_Coriobacteriia;o_Coriobacteriales;f_Coriobacteriaceae;g_Atopobium
 k_Bacteria;p_Actinobacteria;c_Coriobacteriia;o_Coriobacteriales;f_Coriobacteriaceae;g_Collinsella
 k_Bacteria;p_Actinobacteria;c_Coriobacteriia;o_Coriobacteriales;f_Coriobacteriaceae;g_Eggerthella
k_Bacteria;p_Actinobacteria;c_Coriobacteriia;o_Coriobacteriales;f_Coriobacteriaceae;g_Slackia
 k_Bacteria;p_Bacteroidetes;c_Bacteroidia;o_Bacteroidales;f_;g_
k_Bacteria;p_Bacteroidetes;c_Bacteroidia;o_Bacteroidales;f_Bacteroidaceae;g_Bacteroides
           k_Bacteria;p_Bacteroidetes;c_Bacteroidia;o_Bacteroidales;f_Porphyromonadaceae;g_Parabacteroides
k_Bacteria;p_Bacteroidetes;c_Bacteroidia;o_Bacteroidales;f_Porphyromonadaceae;g_Porphyromonas
k_Bacteria;p_Bacteroidetes;c_Bacteroidia;o_Bacteroidales;f_Prevotellaceae;g_Prevotella
           k_Bacteria;p_Bacteroidetes;c_Bacteroidia;o_Bacteroidales;f_RF16;g_
 k_Bacteria;p_Bacteroidetes;c_Bacteroidia;o_Bacteroidales;f_Rikenellaceae;g_
k_Bacteria;p_Bacteroidetes;c_Bacteroidia;o_Bacteroidales;f_Rikenellaceae;g_Alistipes
k_Bacteria;p_Bacteroidetes;c_Bacteroidia;o_Bacteroidales;f_S24-7;g_
k_Bacteria;p_Bacteroidetes;c_Bacteroidia;o_Bacteroidales;f_[Barnesiellaceae];g_
k_Bacteria;p_Bacteroidetes;c_Bacteroidia;o_Bacteroidales;f_[Odoribacteraceae];g_Butyricimonas
k_Bacteria;p_Bacteroidetes;c_Bacteroidia;o_Bacteroidales;f_[Odoribacteraceae];g_Odoribacter
k_Bacteria;p_Bacteroidetes;c_Bacteroidia;o_Bacteroidales;f_[Paraprevotellaceae];g_
k_Bacteria;p_Bacteroidetes;c_Bacteroidia;o_Bacteroidales;f_[Paraprevotellaceae];g_CF231
 k_Bacteria;p_Bacteroidetes;c_Bacteroidia;o_Bacteroidales;f_[Paraprevotellaceae];g_Paraprevotella
k_Bacteria;p_Bacteroidetes;c_Bacteroidia;o_Bacteroidales;f_[Paraprevotellaceae];g_[Prevotella]
k_Bacteria;p_Cyanobacteria;c_4C0d-2;o_YS2;f_;g_
 k_Bacteria;p_Elusimicrobia;c_Elusimicrobia;o_Elusimicrobiales;f_Elusimicrobiaceae;g_
k_Bacteria;p_Firmicutes;c_Bacilli;o_Bacillales;f_Planococcaceae;g_
           k\_Bacteria; p\_Firmicutes; c\_Bacilli; o\_Bacillales; f\_Staphylococcaceae; g\_Staphylococcus
k_Bacteria;p_Firmicutes;c_Bacilli;o_Gemellales;f_Gemellaceae;g_
k_Bacteria;p_Firmicutes;c_Bacilli;o_Lactobacillales;f_;g_
           k_Bacteria;p_Firmicutes;c_Bacilli;o_Lactobacillales;f_Aerococcaceae;g_
           k\_Bacteria; p\_Firmicutes; c\_Bacilli; o\_Lactobacillales; f\_Carnobacteriaceae; g\_Granuli catella
k_Bacteria;p_Firmicutes;c_Bacilli;o_Lactobacillales;f_Enterococcaceae;g_Enterococcus
k_Bacteria;p_Firmicutes;c_Bacilli;o_Lactobacillales;f_Lactobacillaceae;g_Lactobacillus
k_Bacteria;p_Firmicutes;c_Bacilli;o_Lactobacillales;f_Leuconostocaceae;g_
k_Bacteria;p_Firmicutes;c_Bacilli;o_Lactobacillales;f_Leuconostocaceae;g_Leuconostoc
k_Bacteria;p_Firmicutes;c_Bacilli;o_Lactobacillales;f_Streptococcaceae;g_Lactococcus
k Bacteria;p Firmicutes;c Bacilli;o Lactobacillales;f Streptococcaceae;g Streptococcus
k_Bacteria;p_Firmicutes;c_Bacilli;o_Turicibacterales;f_Turicibacteraceae;g_Turicibacter
           k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_;g_
 k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Christensenellaceae;g_
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Christensenellaceae;g_Christensenella
           k\_Bacteria; p\_Firmicutes; c\_Clostridia; o\_Clostridiales; f\_Clostridiaceae; g\_Clostridiaceae; g\_Clost
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Clostridiaceae;g_02d06
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Clostridiaceae;g_Clostridium
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Clostridiaceae;g_SMB53
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Clostridiaceae;g_Sarcina
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Dehalobacteriaceae;g_Dehalobacterium
                     Bacteria;p__Firmicutes;c__Clostridia;o__Clostridiales;f__EtOH8;g__
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Eubacteriaceae;g_Pseudoramibacter_Eubacterium
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Lachnospiraceae;g_
 k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Lachnospiraceae;g_Anaerostipes
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Lachnospiraceae;g_Blautia
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Lachnospiraceae;g_Coprococcus
 k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Lachnospiraceae;g_Dorea
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Lachnospiraceae;g_Epulopiscium
 k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Lachnospiraceae;g_Lachnospira
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Lachnospiraceae;g_Roseburia
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Lachnospiraceae;g_[Ruminococcus]
           k\_Bacteria; p\_Firmicutes; c\_Clostridia; o\_Clostridiales; f\_Peptococcaceae; g\_Clostridiales; f\_Clostridiales; f\_Clostri
           k\_Bacteria; p\_Firmicutes; c\_Clostridia; o\_Clostridiales; f\_Peptococcaceae; g\_Peptococcus
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Peptococcaceae;g_rc4-4
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Peptostreptococcaceae;g_
 k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Peptostreptococcaceae;g_[Clostridium]
 k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Ruminococcaceae;g_
          {\tt k\_Bacteria;p\_Firmicutes;c\_Clostridia;o\_Clostridiales;f\_Ruminococcaceae;g\_Anaerotruncus}
 k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Ruminococcaceae;g_Clostridium
 k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Ruminococcaceae;g_Faecalibacterium
           k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Ruminococcaceae;g_Ruminococcus
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Veillonellaceae;g_
           k\_Bacteria; p\_Firmicutes; c\_Clostridia; o\_Clostridiales; f\_Veillonellaceae; g\_Acidaminococcus
 k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Veillonellaceae;g_Anaerovibrio
 k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Veillonellaceae;g_Dialister
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Veillonellaceae;g_Megamonas
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Veillonellaceae;g_Megasphaera
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Veillonellaceae;g_Mitsuokella
 k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Veillonellaceae;g_Phascolarctobacterium
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Veillonellaceae;g_Succiniclasticum
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Veillonellaceae;g_Veillonella
           \label{lem:k_Bacteria} $$k\_Bacteria; p\_Firmicutes; c\_Clostridia; o\_Clostridiales; f\_[Mogibacteriaceae]; g\_Clostridiales; f\_[Mogibacte
 k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_[Mogibacteriaceae];g_Mogibacterium
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_[Tissierellaceae];g_Anaerococcus
 k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_[Tissierellaceae];g_Finegoldia
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_[Tissierellaceae];g_WAL_1855D
           k_Bacteria;p_Firmicutes;c_Clostridia;o_SHA-98;f_;g_
k_Bacteria;p_Firmicutes;c_Erysipelotrichi;o_Erysipelotrichales;f_Erysipelotrichaceae;g_
          k_Bacteria;p_Firmicutes;c_Erysipelotrichi;o_Erysipelotrichales;f_Erysipelotrichaceae;g_Bulleidia
            \verb|k_Bacteria|; p_Firmicutes|; c_Erysipelotrichi|; o_Erysipelotrichales|; f_Erysipelotrichaceae|; g_Catenibacterium|
           k\_Bacteria; p\_Firmicutes; c\_Erysipelotrichi; o\_Erysipelotrichales; f\_Erysipelotrichaceae; g\_Coprobacillus
          {\tt k\_Bacteria;p\_Firmicutes;c\_Erysipelotrichi;o\_Erysipelotrichales;f\_Erysipelotrichaceae;g\_Holdemania}
k_Bacteria;p_Firmicutes;c_Erysipelotrichi;o_Erysipelotrichales;f_Erysipelotrichaceae;g_[Eubacterium]
 k_Bacteria;p_Firmicutes;c_Erysipelotrichi;o_Erysipelotrichales;f_Erysipelotrichaceae;g_cc_115
 k_Bacteria;p_Firmicutes;c_Erysipelotrichi;o_Erysipelotrichales;f_Erysipelotrichaceae;g_p-75-a5
            \verb|k_Bacteria|; p_Fusobacteria|; c_Fusobacteriia|; o_Fusobacteriales|; f_Fusobacteriaceae|; g_Fusobacterium|
k_Bacteria;p_Lentisphaerae;c_[Lentisphaeria];o_Victivallales;f_Victivallaceae;g_
 k_Bacteria;p_Lentisphaerae;c_[Lentisphaeria];o_Victivallales;f_Victivallaceae;g_Victivallis
           k_Bacteria;p_Proteobacteria;c_Alphaproteobacteria;o_;f_;g_
 k_Bacteria;p_Proteobacteria;c_Alphaproteobacteria;o_RF32;f_;g_
k_Bacteria;p_Proteobacteria;c_Betaproteobacteria;o_Burkholderiales;f_Alcaligenaceae;g_Sutterella
           k\_Bacteria; p\_Proteobacteria; c\_Betaproteobacteria; o\_Burkholderiales; f\_Oxalobacteraceae; g\_Oxalobacteraceae; p\_Oxalobacteraceae; p\_Oxalobacter
 k_Bacteria;p_Proteobacteria;c_Betaproteobacteria;o_Neisseriales;f_Neisseriaceae;g_Neisseria
 k_Bacteria;p_Proteobacteria;c_Deltaproteobacteria;o_Desulfovibrionales;f_Desulfovibrionaceae;g_
      k_Bacteria;p_Proteobacteria;c_Deltaproteobacteria;o_Desulfovibrionales;f_Desulfovibrionaceae;g_Bilophila
k_Bacteria;p_Proteobacteria;c_Deltaproteobacteria;o_Desulfovibrionales;f_Desulfovibrionaceae;g_Desulfovibrio
k_Bacteria;p_Proteobacteria;c_Epsilonproteobacteria;o_Campylobacterales;f_Campylobacteraceae;g_Campylobacter
 k_Bacteria;p_Proteobacteria;c_Epsilonproteobacteria;o_Campylobacterales;f_Helicobacteraceae;g_Flexispira
 k_Bacteria;p_Proteobacteria;c_Gammaproteobacteria;o_Aeromonadales;f_Aeromonadaceae;g_
k_Bacteria;p_Proteobacteria;c_Gammaproteobacteria;o_Aeromonadales;f_Succinivibrionaceae;g_Ruminobacter
 k_Bacteria;p_Proteobacteria;c_Gammaproteobacteria;o_Aeromonadales;f_Succinivibrionaceae;g_Succinivibrio
k_Bacteria;p_Proteobacteria;c_Gammaproteobacteria;o_Alteromonadales;f_[Chromatiaceae];g_Alkalimonas
           {\tt k\_Bacteria;p\_Proteobacteria;c\_Gammaproteobacteria;o\_Enterobacteriales;f\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriaceae;g\_Enterobacteriace
          {\tt k\_Bacteria; p\_Proteobacteria; c\_Gamma proteobacteria; o\_Enterobacteriales; f\_Enterobacteriaceae; g\_Erwinia}
k_Bacteria;p_Proteobacteria;c_Gammaproteobacteria;o_Enterobacteriales;f_Enterobacteriaceae;g_Klebsiella
           k\_Bacteria; p\_Proteobacteria; c\_Gamma proteobacteria; o\_Enterobacteriales; f\_Enterobacteriaceae; g\_Serratiant for the proteopacteria and the proteopacteria an
 k_Bacteria;p_Proteobacteria;c_Gammaproteobacteria;o_Enterobacteriales;f_Enterobacteriaceae;g_Xenorhabdus
k_Bacteria;p_Proteobacteria;c_Gammaproteobacteria;o_Pasteurellales;f_Pasteurellaceae;g_Actinobacillus
           k_Bacteria;p_Proteobacteria;c_Gammaproteobacteria;o_Pasteurellales;f_Pasteurellaceae;g_Haemophilus
           k\_Bacteria; p\_Proteobacteria; c\_Gamma proteobacteria; o\_Pseudomonadales; f\_Pseudomonadaceae; g\_Pseudomonadaceae; g\_Pseudomon
k_Bacteria;p_Proteobacteria;c_Gammaproteobacteria;o_Thiohalorhabdales;f_;g_
k_Bacteria;p_Spirochaetes;c_Spirochaetes;o_Spirochaetales;f_Spirochaetaceae;g_Treponema
 k_Bacteria;p_Tenericutes;c_Mollicutes;o_Anaeroplasmatales;f_Anaeroplasmataceae;g_
 k_Bacteria;p_Tenericutes;c_Mollicutes;o_Anaeroplasmatales;f_Anaeroplasmataceae;g_Anaeroplasma
 k_Bacteria;p_Tenericutes;c_Mollicutes;o_RF39;f_;g_
 k_Bacteria;p_Tenericutes;c_RF3;o_ML615J-28;f_;g_
k_Bacteria;p_Verrucomicrobia;c_Verruco-5;o_WCHB1-41;f_RFP12;g_
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k_Bacteria;p_Verrucomicrobia;c_Verrucomicrobiae;o_Verrucomicrobiales;f_Verrucomicrobiaceae;g_Akkermansia

k_Archaea;p_Euryarchaeota;c_Methanobacteria;o_Methanobacteriales;f_Methanobacteriaceae;g_Methanobrevibacter
 k_Archaea;p_Euryarchaeota;c_Methanobacteria;o_Methanobacteriales;f_Methanobacteriaceae;g_Methanosphaera
 k_Bacteria;p_Actinobacteria;c_Actinobacteria;o_Actinomycetales;f_Actinomycetaceae;g_Actinomyces