```
Unassignable;Other;Other;Other;Other
Unclassified;Other;Other;Other;Other
         k__Bacteria;Other;Other;Other;Other
k_Bacteria;p_Actinobacteria;Other;Other;Other
k_Bacteria;p_Actinobacteria;c_Actinobacteria;Other;Other
         k_Bacteria;p_Actinobacteria;c_Actinobacteria;o_Actinomycetales;Other;Other
         k_Bacteria;p_Actinobacteria;c_Actinobacteria;o_Actinomycetales;f_Actinomycetaceae;g_Actinomyces
k_Bacteria;p_Actinobacteria;c_Actinobacteria;o_Actinomycetales;f_Brevibacteriaceae;g_
k_Bacteria;p_Actinobacteria;c_Actinobacteria;o_Actinomycetales;f_Corynebacteriaceae;g_Corynebacterium
k_Bacteria;p_Actinobacteria;c_Actinobacteria;o_Actinomycetales;f_Microbacteriaceae;Other
k_Bacteria;p_Actinobacteria;c_Actinobacteria;o_Actinomycetales;f_Microbacteriaceae;g_Pseudoclavibacter
k_Bacteria;p_Actinobacteria;c_Actinobacteria;o_Actinomycetales;f_Micrococcaceae;Other
k_Bacteria;p_Actinobacteria;c_Actinobacteria;o_Actinomycetales;f_Micrococcaceae;g_Kocuria
k_Bacteria;p_Actinobacteria;c_Actinobacteria;o_Actinomycetales;f_Micrococcaceae;g_Nesterenkonia
         {\tt k\_Bacteria; p\_Actinobacteria; c\_Actinobacteria; o\_Bifidobacteriales; f\_Bifidobacteriaceae; g\_Bifidobacterium}
 k_Bacteria;p_Actinobacteria;c_Coriobacteriia;o_Coriobacteriales;f_Coriobacteriaceae;Other
k_Bacteria;p_Actinobacteria;c_Coriobacteriia;o_Coriobacteriales;f_Coriobacteriaceae;g_
          \label{lem:k_Bacteria} $$k\_Bacteria; p\_Actinobacteria; c\_Coriobacteriia; o\_Coriobacteriales; f\_Coriobacteriaceae; g\_Adlercreutziaes; p\_Actinobacteria; p\_A
k_Bacteria;p_Actinobacteria;c_Coriobacteriia;o_Coriobacteriales;f_Coriobacteriaceae;g_Collinsella
k_Bacteria;p_Bacteroidetes;Other;Other;Other
k_Bacteria;p_Bacteroidetes;c_Bacteroidia;o_Bacteroidales;Other;Other
k_Bacteria;p_Bacteroidetes;c_Bacteroidia;o_Bacteroidales;f_;g_
k_Bacteria;p_Bacteroidetes;c_Bacteroidia;o_Bacteroidales;f_Bacteroidaceae;Other
 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_Prevotellaceae;Other
k_Bacteria;p_Bacteroidetes;c_Bacteroidia;o_Bacteroidales;f_Prevotellaceae;g_Prevotella
k_Bacteria;p_Bacteroidetes;c_Bacteroidia;o_Bacteroidales;f_Rikenellaceae;Other
k_Bacteria;p_Bacteroidetes;c_Bacteroidia;o_Bacteroidales;f_Rikenellaceae;g_
 k_Bacteria;p_Bacteroidetes;c_Bacteroidia;o_Bacteroidales;f_Rikenellaceae;g_AF12
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_Odoribacter
         {\tt k\_Bacteria;p\_Bacteroidetes;c\_Bacteroidia;o\_Bacteroidales;f\_[Paraprevotellaceae];g\_Paraprevotellaceae]}
         k_Bacteria;p_Bacteroidetes;c_[Saprospirae];o_[Saprospirales];f_Chitinophagaceae;g_Sediminibacterium
k_Bacteria;p_Cyanobacteria;c_4C0d-2;o_MLE1-12;f_;g_
k_Bacteria;p_Cyanobacteria;c_4C0d-2;o_YS2;f_;g_
k_Bacteria;p_Cyanobacteria;c_Chloroplast;o_Streptophyta;f__;g__
k_Bacteria;p_Deferribacteres;c_Deferribacteres;o_Deferribacterales;f_Deferribacteraceae;g_Mucispirillum
k_Bacteria;p_Firmicutes;Other;Other;Other
 k Bacteria;p Firmicutes;c Bacilli;Other;Other;Other
         k_Bacteria;p_Firmicutes;c_Bacilli;o_Bacillales;Other;Other
 k_Bacteria;p_Firmicutes;c_Bacilli;o_Bacillales;f_Alicyclobacillaceae;g_Alicyclobacillus
k_Bacteria;p_Firmicutes;c_Bacilli;o_Bacillales;f_Bacillaceae;Other
         k_Bacteria;p_Firmicutes;c_Bacilli;o_Bacillales;f_Bacillaceae;g_Bacillus
 k_Bacteria;p_Firmicutes;c_Bacilli;o_Bacillales;f_Bacillaceae;g_Virgibacillus
 k_Bacteria;p_Firmicutes;c_Bacilli;o_Bacillales;f_Planococcaceae;Other
k_Bacteria;p_Firmicutes;c_Bacilli;o_Bacillales;f_Planococcaceae;g_Bacillus
k_Bacteria;p_Firmicutes;c_Bacilli;o_Bacillales;f_Sporolactobacillaceae;Other
k_Bacteria;p_Firmicutes;c_Bacilli;o_Bacillales;f_Staphylococcaceae;g_Staphylococcus
 k_Bacteria;p_Firmicutes;c_Bacilli;o_Lactobacillales;Other;Other
k_Bacteria;p_Firmicutes;c_Bacilli;o_Lactobacillales;f_Enterococcaceae;g_Enterococcus
k_Bacteria;p_Firmicutes;c_Bacilli;o_Lactobacillales;f_Enterococcaceae;g_Vagococcus
k_Bacteria;p_Firmicutes;c_Bacilli;o_Lactobacillales;f_Lactobacillaceae;Other
 k_Bacteria;p_Firmicutes;c_Bacilli;o_Lactobacillales;f_Lactobacillaceae;g_Lactobacillus
k_Bacteria;p_Firmicutes;c_Bacilli;o_Lactobacillales;f_Streptococcaceae;g_Streptococcus
 k_Bacteria;p_Firmicutes;c_Clostridia;Other;Other;Other
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;Other;Other
        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; Other
         k\_Bacteria; p\_Firmicutes; c\_Clostridia; o\_Clostridiales; f\_Clostridiaceae; g\_Candidatus Arthromitus
 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_Dehalobacteriaceae;g_Dehalobacterium
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Eubacteriaceae;g_Anaerofustis
        k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Lachnospiraceae;Other
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_Butyrivibrio
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Lachnospiraceae;g_Clostridium
         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_Hespellia
     k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Lachnospiraceae;g_Lachnobacterium
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Lachnospiraceae;g_Lachnospira
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Lachnospiraceae;g_Marvinbryantia
 k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Lachnospiraceae;g_Moryella
 k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Lachnospiraceae;g_Robinsoniella
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Lachnospiraceae;g_Roseburia
 k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Lachnospiraceae;g_Shuttleworthia
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Lachnospiraceae;g_Syntrophococcus
        k\_Bacteria; p\_Firmicutes; c\_Clostridia; o\_Clostridiales; f\_Lachnospiraceae; g\_[Ruminococcus]
        k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Peptococcaceae;Other
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Peptococcaceae;g_
        k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Peptococcaceae;g_rc4-4
 k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Peptostreptococcaceae;Other
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Peptostreptococcaceae;g_Clostridium
         k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Peptostreptococcaceae;g_[Clostridium]
         k\_Bacteria; p\_Firmicutes; c\_Clostridia; o\_Clostridiales; f\_Ruminococcaceae; Other
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Ruminococcaceae;g_
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Ruminococcaceae;g_Anaerotruncus
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Ruminococcaceae;g_Butyricicoccus
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_Oscillospira
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Ruminococcaceae;g_Papillibacter
         \label{lem:k_Bacteria} $$k\_Bacteria; p\_Firmicutes; c\_Clostridia; o\_Clostridiales; f\_Ruminococcaceae; g\_Ruminococcus and the substitution of the 
 k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Ruminococcaceae;g_Sporobacter
 k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Veillonellaceae;g_Dialister
         k\_Bacteria; p\_Firmicutes; c\_Clostridia; o\_Clostridiales; f\_Veillonellaceae; g\_Phascolarctobacterium
 k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Veillonellaceae;g_Selenomonas
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_Veillonellaceae;g_Veillonella
 k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_[Mogibacteriaceae];g_
k_Bacteria;p_Firmicutes;c_Clostridia;o_Clostridiales;f_[Mogibacteriaceae];g_Anaerovorax
 k_Bacteria;p_Firmicutes;c_Erysipelotrichi;o_Erysipelotrichales;f_Erysipelotrichaceae;Other
k_Bacteria;p_Firmicutes;c_Erysipelotrichi;o_Erysipelotrichales;f_Erysipelotrichaceae;g_
k_Bacteria;p_Firmicutes;c_Erysipelotrichi;o_Erysipelotrichales;f_Erysipelotrichaceae;g_Allobaculum
k_Bacteria;p_Firmicutes;c_Erysipelotrichi;o_Erysipelotrichales;f_Erysipelotrichaceae;g_Bulleidia
 k_Bacteria;p_Firmicutes;c_Erysipelotrichi;o_Erysipelotrichales;f_Erysipelotrichaceae;g_Clostridium
k_Bacteria;p_Firmicutes;c_Erysipelotrichi;o_Erysipelotrichales;f_Erysipelotrichaceae;g_Coprobacillus
 k Bacteria;p Firmicutes;c Erysipelotrichi;o Erysipelotrichales;f Erysipelotrichaceae;g cc 115
        k_Bacteria;p_Fusobacteria;c_Fusobacteriia;o_Fusobacteriales;f_Leptotrichiaceae;g_Leptotrichia
k_Bacteria;p_Planctomycetes;c_Planctomycetia;o_Gemmatales;f_Gemmataceae;g_Gemmata
         k_Bacteria;p_Proteobacteria;Other;Other;Other
 k Bacteria;p Proteobacteria;c Alphaproteobacteria;Other;Other
k_Bacteria;p_Proteobacteria;c_Alphaproteobacteria;o_Caulobacterales;f_Caulobacteraceae;g_
         k\_Bacteria; p\_Proteobacteria; c\_Alphaproteobacteria; o\_Caulobacterales; f\_Caulobacteraceae; g\_Caulobacteraceae; g\_Caulobacte
         k_Bacteria;p_Proteobacteria;c_Alphaproteobacteria;o_RF32;f__;g__
 k_Bacteria;p_Proteobacteria;c_Alphaproteobacteria;o_Rhizobiales;f_Bradyrhizobiaceae;g_Bradyrhizobium
 k_Bacteria;p_Proteobacteria;c_Alphaproteobacteria;o_Rhizobiales;f_Methylobacteriaceae;g_Methylobacterium
k_Bacteria;p_Proteobacteria;c_Alphaproteobacteria;o_Rhizobiales;f_Rhizobiaceae;g_Agrobacterium
k_Bacteria;p_Proteobacteria;c_Alphaproteobacteria;o_Rhodobacterales;f_Rhodobacteraceae;g_Paracoccus
 k_Bacteria;p_Proteobacteria;c_Alphaproteobacteria;o_Rhodospirillales;f_Acetobacteraceae;g_Acidocella
k_Bacteria;p_Proteobacteria;c_Alphaproteobacteria;o_Rickettsiales;f_mitochondria;Other
k_Bacteria;p_Proteobacteria;c_Alphaproteobacteria;o_Rickettsiales;f_mitochondria;g_Myristica
         k\_Bacteria; p\_Proteobacteria; c\_Alphaproteobacteria; o\_Sphingomonadales; f\_Sphingomonadaceae; g\_Sphingobium and the specific of the specific
k_Bacteria;p_Proteobacteria;c_Alphaproteobacteria;o_Sphingomonadales;f_Sphingomonadaceae;g_Sphingomonas
k_Bacteria;p_Proteobacteria;c_Betaproteobacteria;Other;Other;Other
         k_Bacteria;p_Proteobacteria;c_Betaproteobacteria;o_Burkholderiales;Other;Other
 k Bacteria;p Proteobacteria;c Betaproteobacteria;o Burkholderiales;f Alcaligenaceae;g Sutterella
k_Bacteria;p_Proteobacteria;c_Betaproteobacteria;o_Burkholderiales;f_Burkholderiaceae;g_Salinispora
k_Bacteria;p_Proteobacteria;c_Betaproteobacteria;o_Burkholderiales;f_Comamonadaceae;Other
k_Bacteria;p_Proteobacteria;c_Betaproteobacteria;o_Burkholderiales;f_Comamonadaceae;g_Delftia
k Bacteria;p Proteobacteria;c Deltaproteobacteria;Other;Other
k_Bacteria;p_Proteobacteria;c_Deltaproteobacteria;o_Desulfovibrionales;Other;Other
k_Bacteria;p_Proteobacteria;c_Deltaproteobacteria;o_Desulfovibrionales;f_Desulfovibrionaceae;Other
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_Gammaproteobacteria;Other;Other
        k\_Bacteria; p\_Proteobacteria; c\_Gamma proteobacteria; o\_Alteromonadales; Other; Other and the proteobacteria; o\_Alteromonadales; o\_Alteromon
k_Bacteria;p_Proteobacteria;c_Gammaproteobacteria;o_Alteromonadales;f_Idiomarinaceae;g_
         k\_Bacteria; p\_Proteobacteria; c\_Gamma proteobacteria; o\_Alteromonadales; f\_Idiomarinaceae; g\_Idiomarinaceae; g\_Idiomarinaceaeae; g\_Idiomarinaceae; g\_Idiomarinaceae; g\_Idiomarinaceae; g\_Idiom
k_Bacteria;p_Proteobacteria;c_Gammaproteobacteria;o_Alteromonadales;f_Shewanellaceae;g_Shewanella
k_Bacteria;p_Proteobacteria;c_Gammaproteobacteria;o_Enterobacteriales;f_Enterobacteriaceae;Other
         k\_Bacteria; p\_Proteobacteria; c\_Gamma proteobacteria; o\_Enterobacteriales; f\_Enterobacteriaceae; g\_Escherichialles; f\_Enterobacteriaceae; g\_Enterobacteriaceae; g\_
         k\_Bacteria; p\_Proteobacteria; c\_Gamma proteobacteria; o\_Enterobacteriales; f\_Enterobacteria ceae; g\_Klebsiella
k_Bacteria;p_Proteobacteria;c_Gammaproteobacteria;o_Enterobacteriales;f_Enterobacteriaceae;g_Shigella
k_Bacteria;p_Proteobacteria;c_Gammaproteobacteria;o_Enterobacteriales;f_Enterobacteriaceae;g_Trabulsiella
k_Bacteria;p_Proteobacteria;c_Gammaproteobacteria;o_Legionellales;f_Coxiellaceae;g_Coxiella
k_Bacteria;p_Proteobacteria;c_Gammaproteobacteria;o_Oceanospirillales;f_Halomonadaceae;g_Halomonas
k_Bacteria;p_Proteobacteria;c_Gammaproteobacteria;o_Pasteurellales;f_Pasteurellaceae;g_Haemophilus
 k_Bacteria;p_Proteobacteria;c_Gammaproteobacteria;o_Pasteurellales;f_Pasteurellaceae;g_Mannheimia
k_Bacteria;p_Proteobacteria;c_Gammaproteobacteria;o_Pseudomonadales;f_Moraxellaceae;g_Acinetobacter
        k_Bacteria;p_Proteobacteria;c_Gammaproteobacteria;o_Pseudomonadales;f_Moraxellaceae;g_Enhydrobacter
k_Bacteria;p_Proteobacteria;c_Gammaproteobacteria;o_Pseudomonadales;f_Pseudomonadaceae;Other
k_Bacteria;p_Proteobacteria;c_Gammaproteobacteria;o_Pseudomonadales;f_Pseudomonadaceae;g_Pseudomonas
         k__Bacteria;p__TM7;c__TM7-3;o__;f__;g__
k_Bacteria;p_TM7;c_TM7-3;o_CW040;f_F16;g_
k_Bacteria;p_Tenericutes;c_Mollicutes;Other;Other
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k\_Bacteria;p\_Tenericutes;c\_Mollicutes;o\_Anaeroplasmatales;f\_Anaeroplasmataceae;g\_Anaeroplasma

k\_Bacteria;p\_Verrucomicrobia;c\_Verrucomicrobiae;o\_Verrucomicrobiales;f\_Verrucomicrobiaceae;Other

 $\verb| k_Bacteria;p_Verrucomicrobia;c_Verrucomicrobiae;o_Verrucomicrobiales;f_Verrucomicrobiaceae;g_Akkermansia|$ 

k\_Bacteria;p\_Tenericutes;c\_Mollicutes;o\_RF39;f\_;g\_ k\_Bacteria;p\_Verrucomicrobia;Other;Other;Other;Other