

B0EFN1 – *Entamoeba dispar*

C4M7L0 – *Entamoeba histolytica*

B5YNX7 – *Thalassiosira pseudonana*

B8BZ32 – *Thalassiosira pseudonana*

A8PV21 – *Brugia malayi*

E4NTD4 – *Halogeometricum borinquense*

D3SVK8 – *Natrialba magadii*

D7G7X6 – *Ectocarpus siliculosus*

F4G0D4 – *Metallosphaera cuprina*

A4YDN3 – *Metallosphaera sedula*

Q9HJU0 – *Thermoplasma acidophilum*

E4SPX6 – *Streptococcus thermophilus*

Q03MS9 – *Streptococcus thermophilus*

B2JY99 – *Burkholderia phymatum*

F7Y687 – *Mesorhizobium opportunistum*

ENSPPYG00000018850

H2PR41 – *Pongo abelii*

G7PCR1 – *Macaca fascicularis*

G1QZB2 – *Nomascus leucogenys*

H2QWN3 – *Pan troglodytes*

F7H1Z7 – *Callithrix jacchus*

I1C447 – *Rhizopus delemar*

F9FZM0 – *Fusarium oxysporum*

B8PCC4 – *Postia placenta*

B8PKM3 – *Postia placenta*

Q0CAX2 – *Aspergillus terreus*

A9KK06 – *Clostridium phytofermentans*

0.92

0.98

0.98

0.98

0.99

0.95

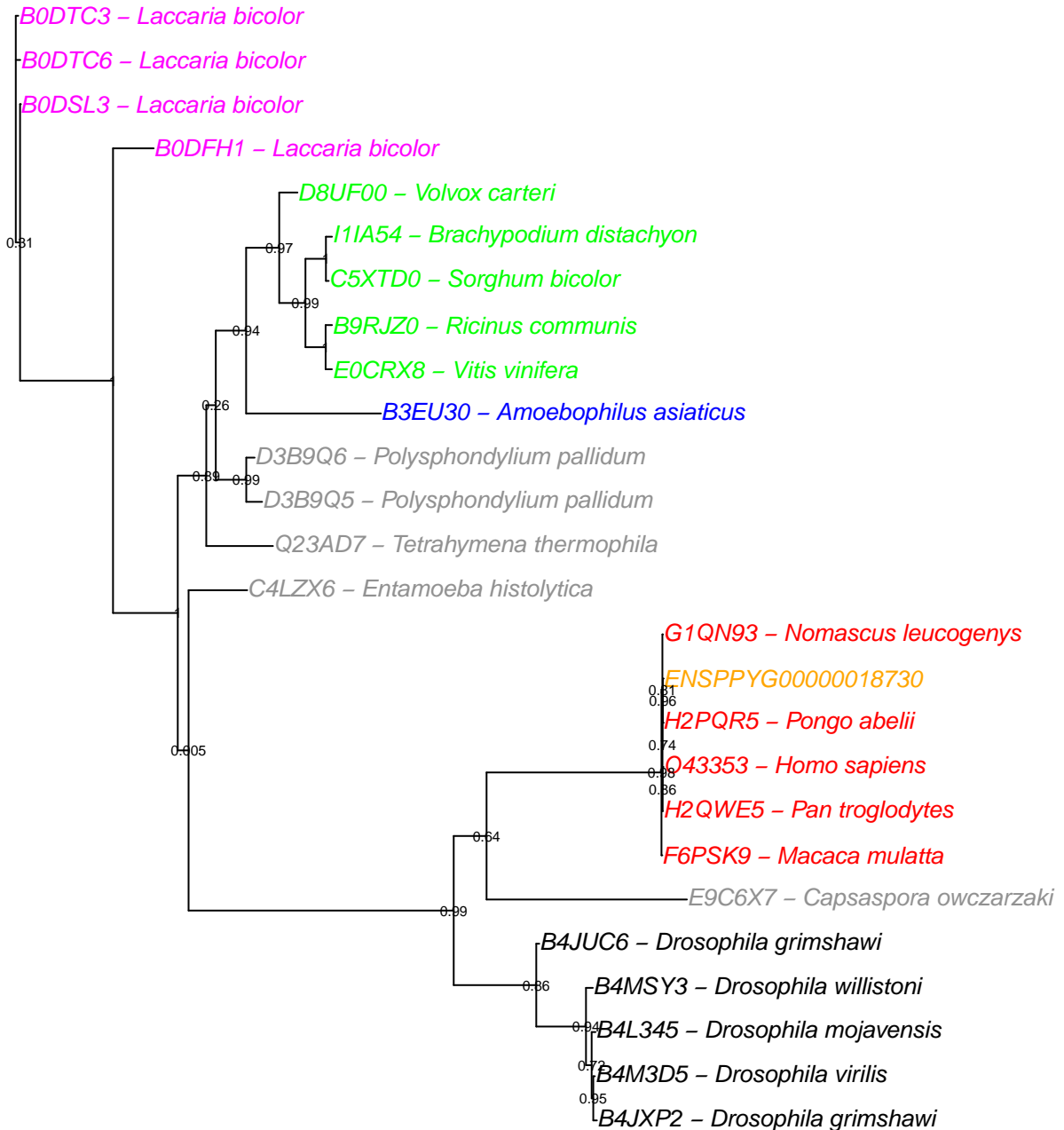
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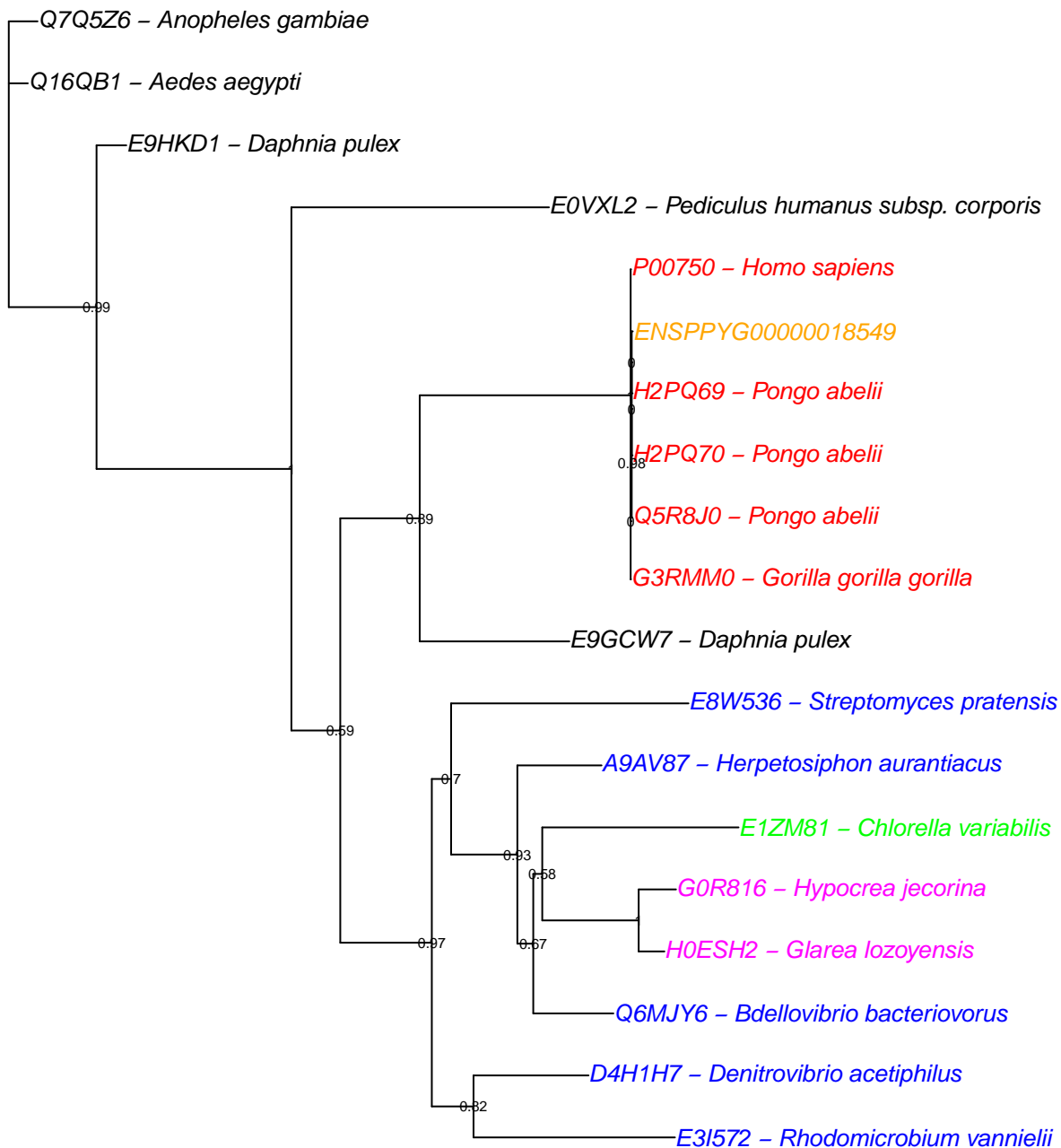
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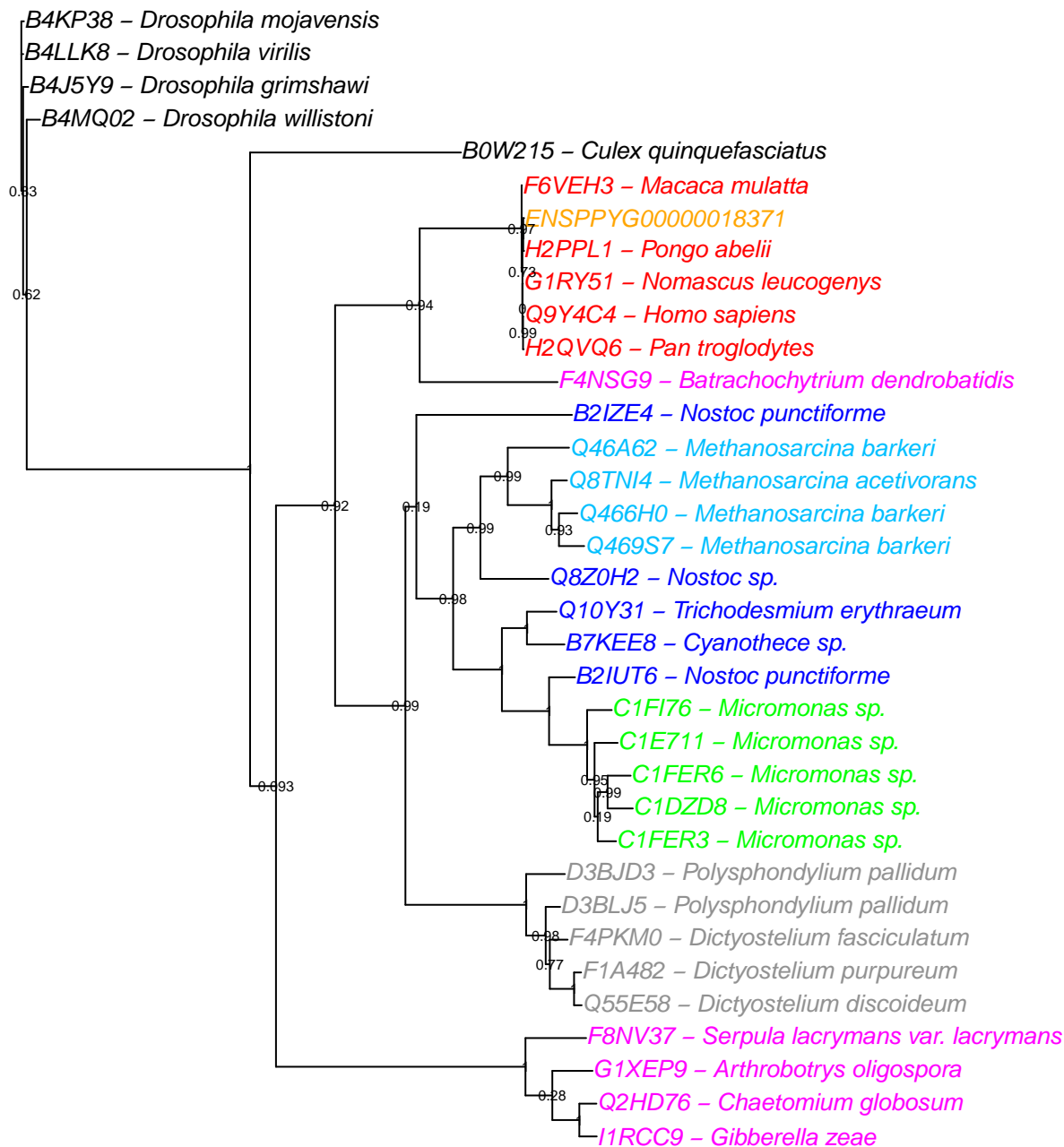
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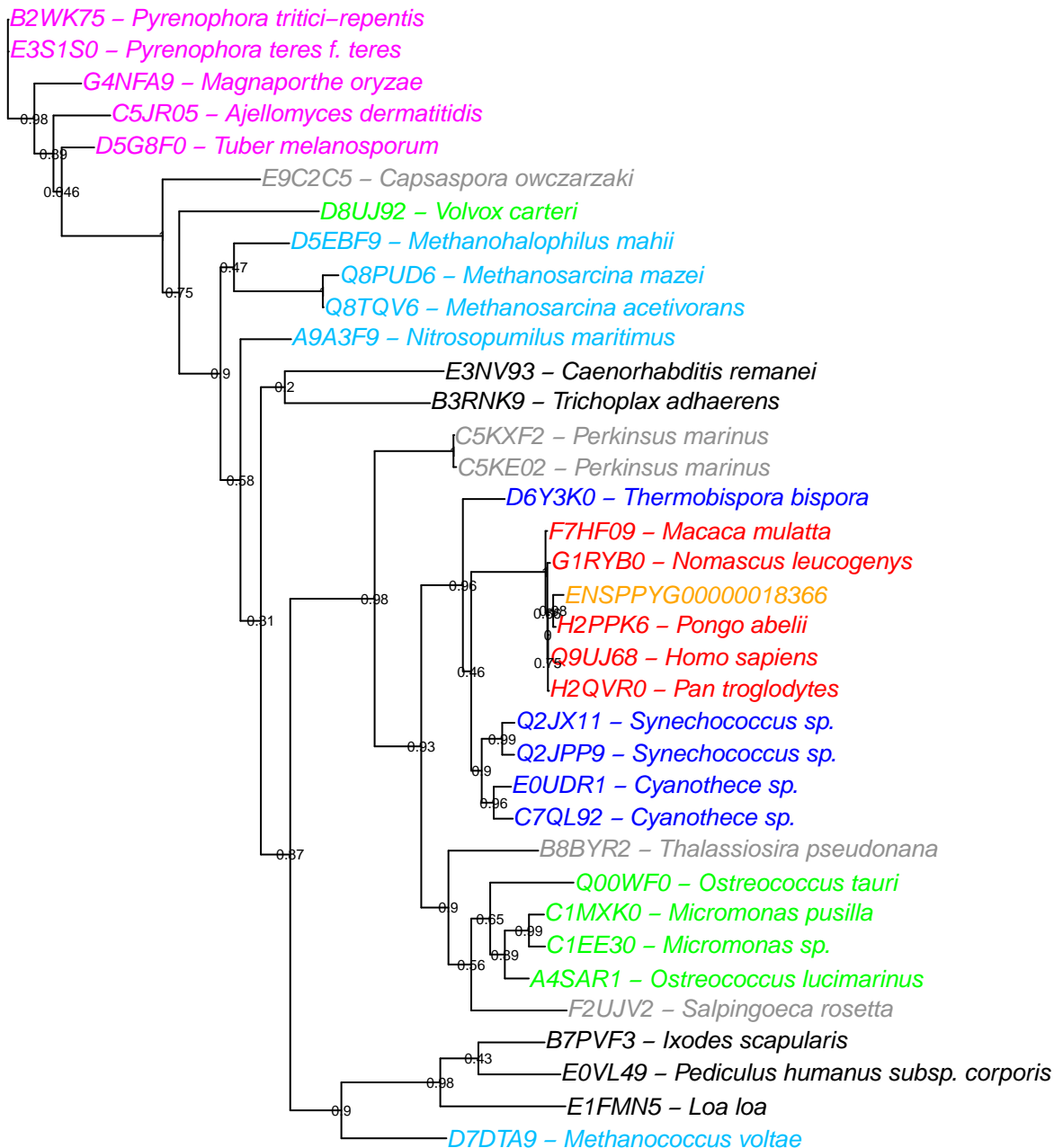
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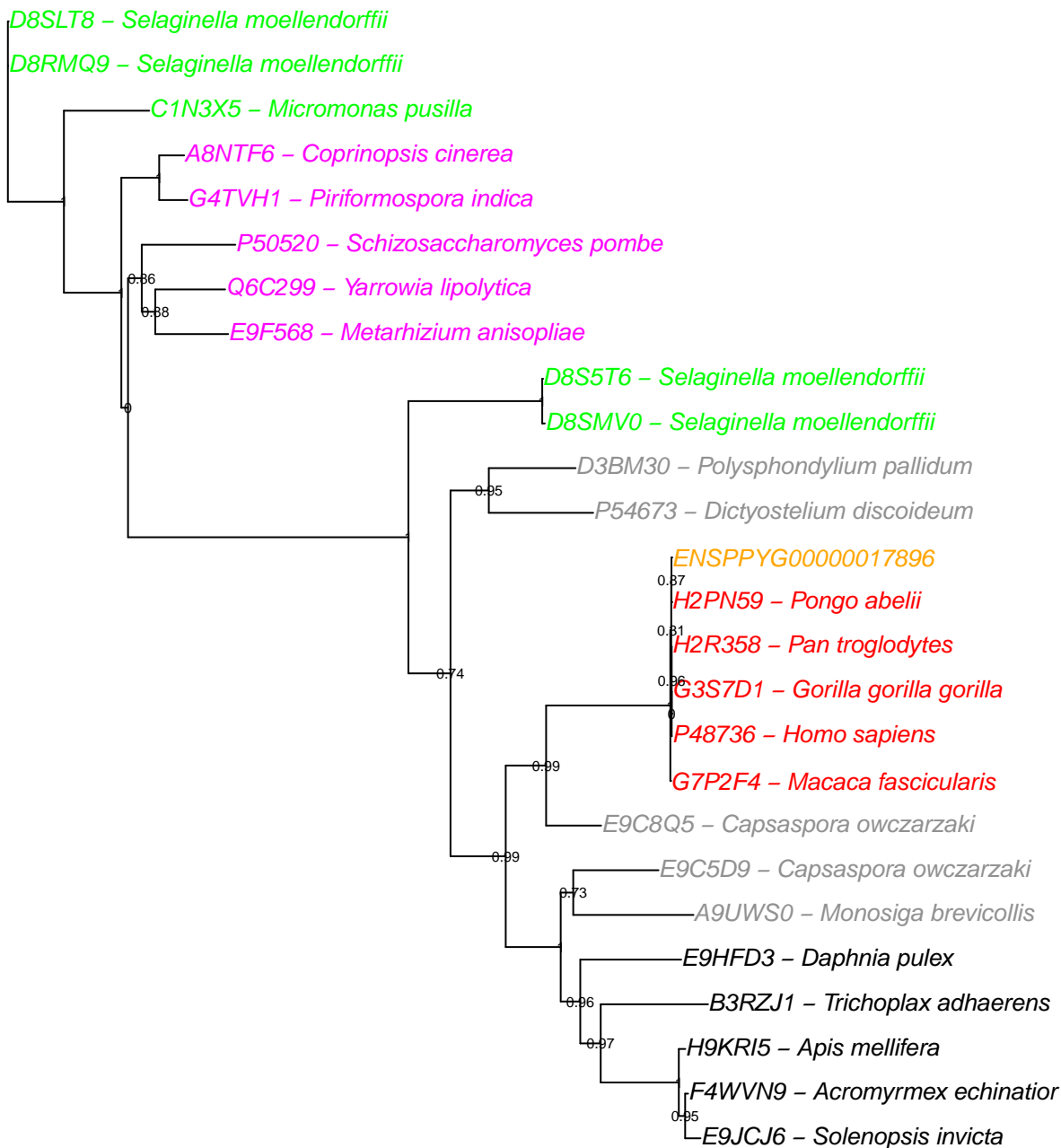
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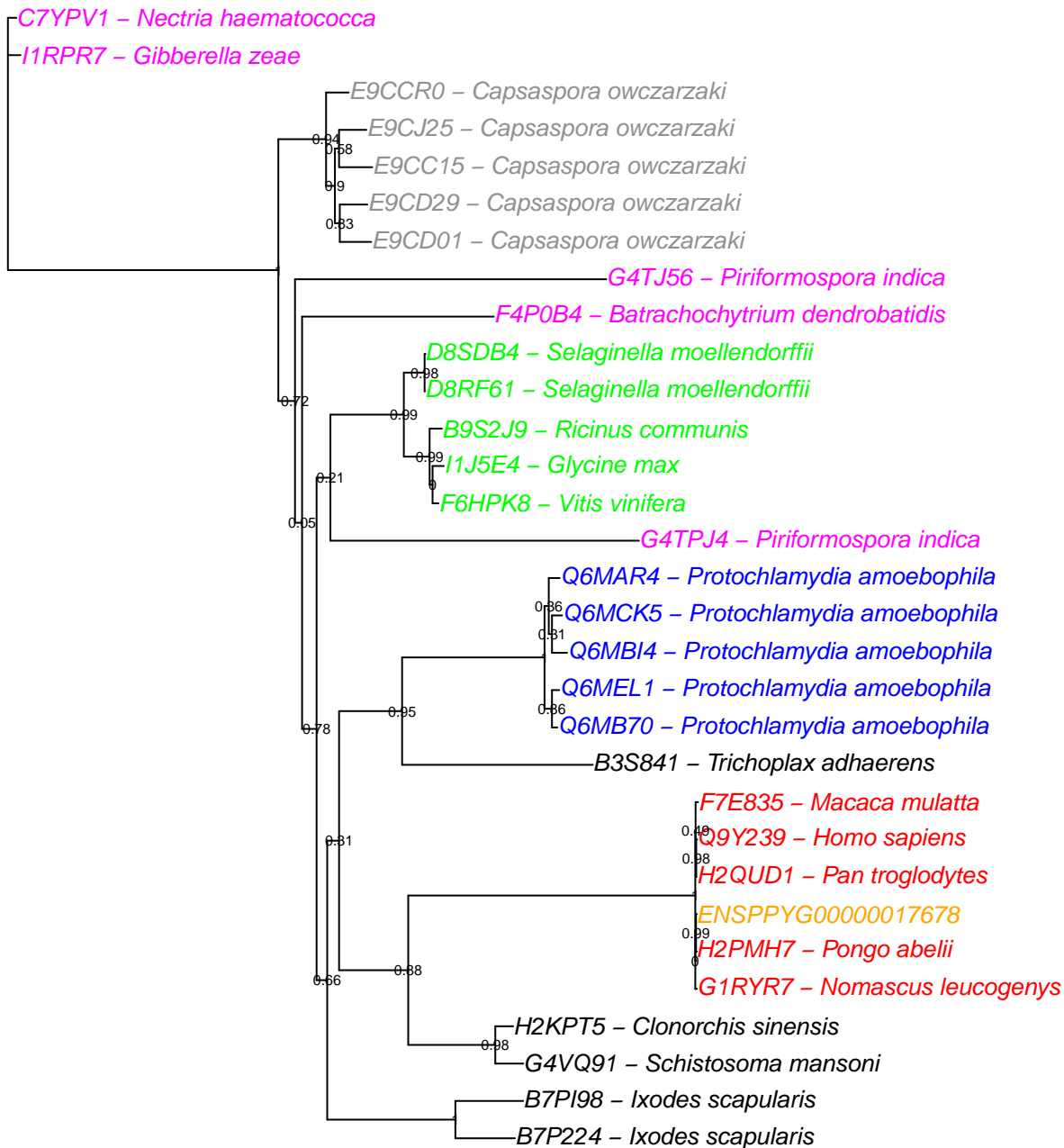


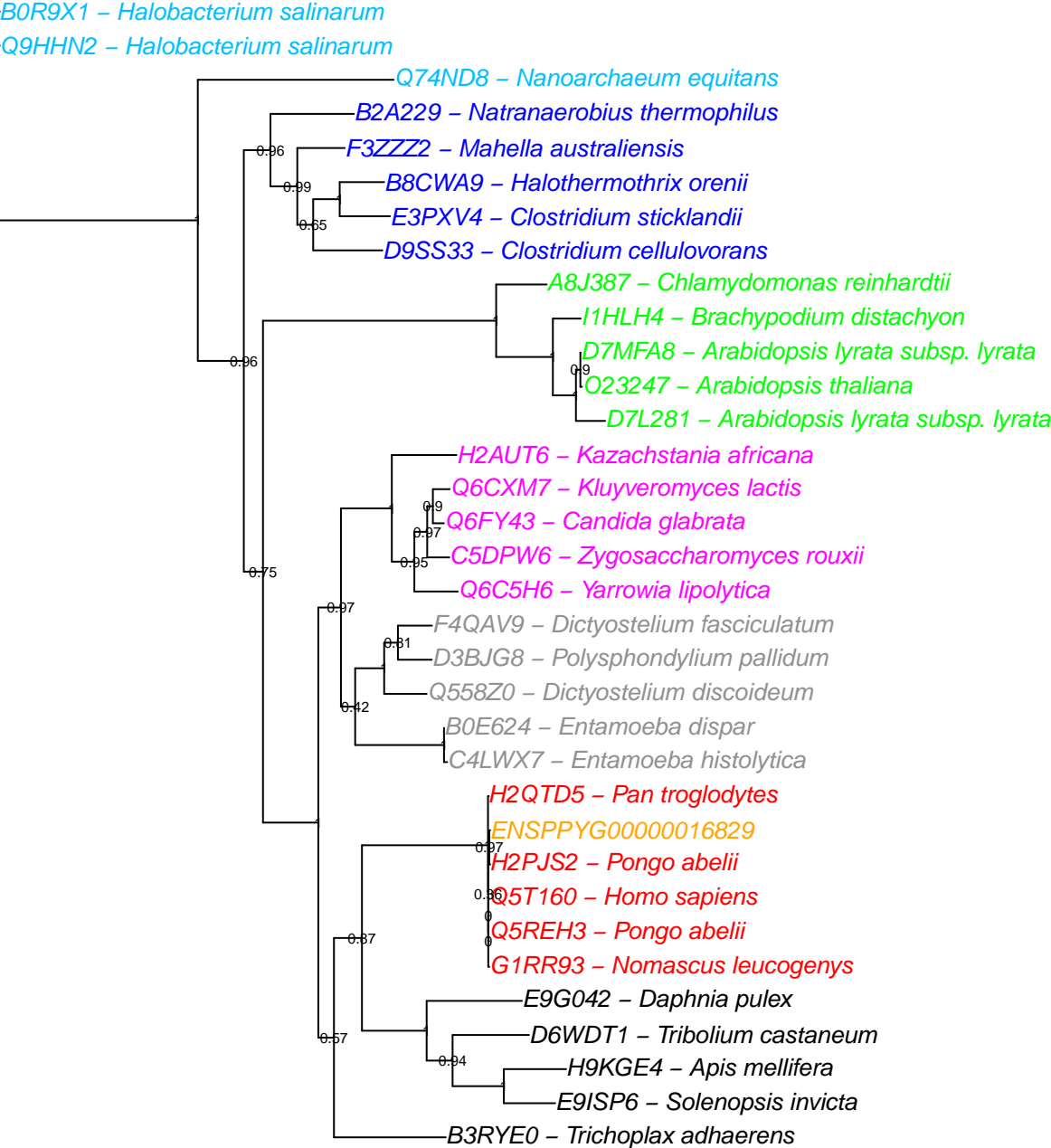


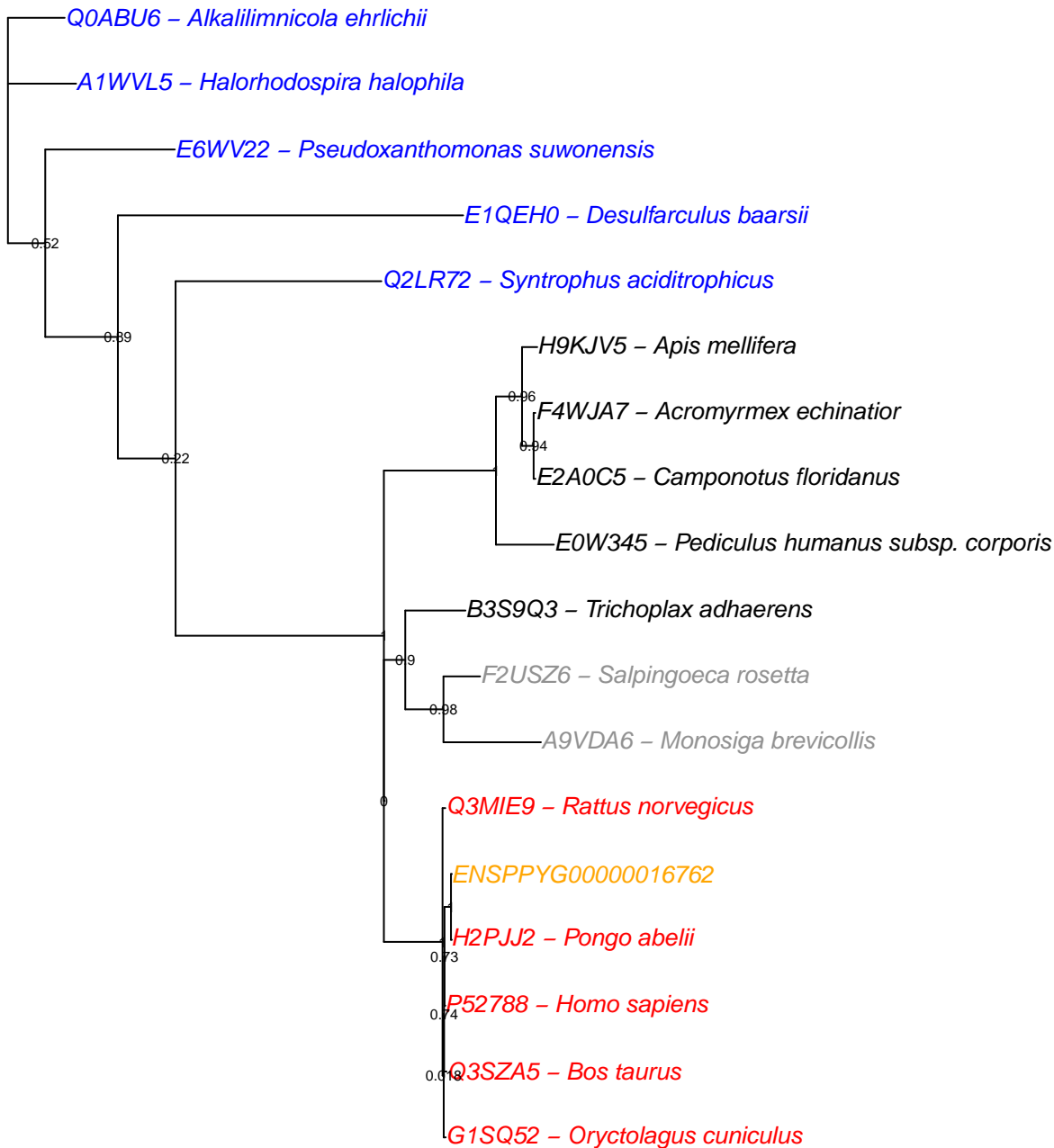


Phylogenetic tree showing relationships between various species, with bootstrap values indicated at the nodes. The tree is rooted at the top left and branches downwards. Species names are color-coded: purple for fungi, green for plants, red for mammals, and orange for invertebrates. Bootstrap values are shown at the nodes, indicating the confidence in the branching order.

- Q4WV08 – *Neosartorya fumigata* (purple)
- B8NSB3 – *Aspergillus flavus* (purple)
- B0CVL4 – *Laccaria bicolor* (purple)
- D8PXX0 – *Schizophyllum commune* (purple)
- F4P4F3 – *Batrachochytrium dendrobatidis* (purple)
- C1EIW8 – *Micromonas* sp. (green)
- G4YS12 – *Phytophthora sojae* (grey)
- D8S7L1 – *Selaginella moellendorffii* (green)
- A9TRN7 – *Physcomitrella patens* subsp. *patens* (green)
- D7THV1 – *Vitis vinifera* (green)
- O81645 – *Arabidopsis thaliana* (green)
- F2U4N4 – *Salpingoeca rosetta* (grey)
- A9VAW6 – *Monosiga brevicollis* (grey)
- A9VAY4 – *Monosiga brevicollis* (grey)
- E9C6I4 – *Capsaspora owczarzakii* (grey)
- B3S5C5 – *Trichoplax adhaerens* (grey)
- B3S5C6 – *Trichoplax adhaerens* (grey)
- B3RRZ6 – *Trichoplax adhaerens* (grey)
- Q9Y6U3 – *Homo sapiens* (red)
- H2QU73 – *Pan troglodytes* (red)
- ENSPPYG00000017773 (orange)
- H2PMT0 – *Pongo abelii* (red)
- G3S6U0 – *Gorilla gorilla gorilla* (red)
- G3RHT9 – *Gorilla gorilla gorilla* (red)
- E9FXU5 – *Daphnia pulex* (grey)
- Q177K7 – *Aedes aegypti* (grey)







B5DX69 – *Drosophila pseudoobscura pseudoobscura*

B4GEL8 – *Drosophila persimilis*

ENSPPYG00000016075

H2PHG6 – *Pongo abelii*

G6CR48 – *Danaus plexippus*

D8TLD1 – *Volvox carteri*

Q03400 – *Plasmodium falciparum*

E4PUK7 – *Mycoplasma leachii*

B5ZUU6 – *Rhizobium leguminosarum* bv. *trifolii*

Q7Z2K8 – *Homo sapiens*

G3RVL2 – *Gorilla gorilla gorilla*

F7CTE5 – *Callithrix jacchus*

F7CTI5 – *Callithrix jacchus*

0.93

0.71

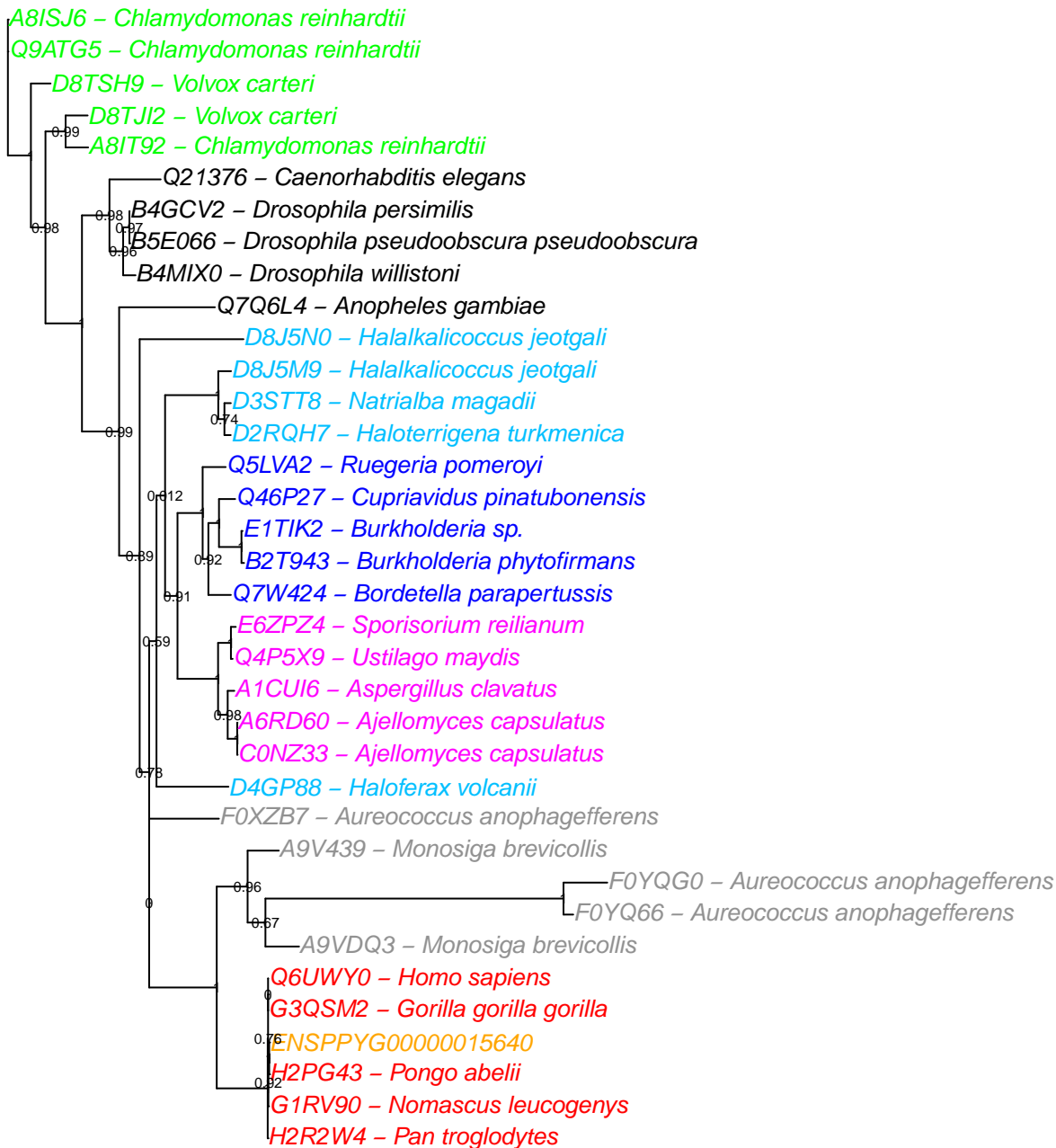
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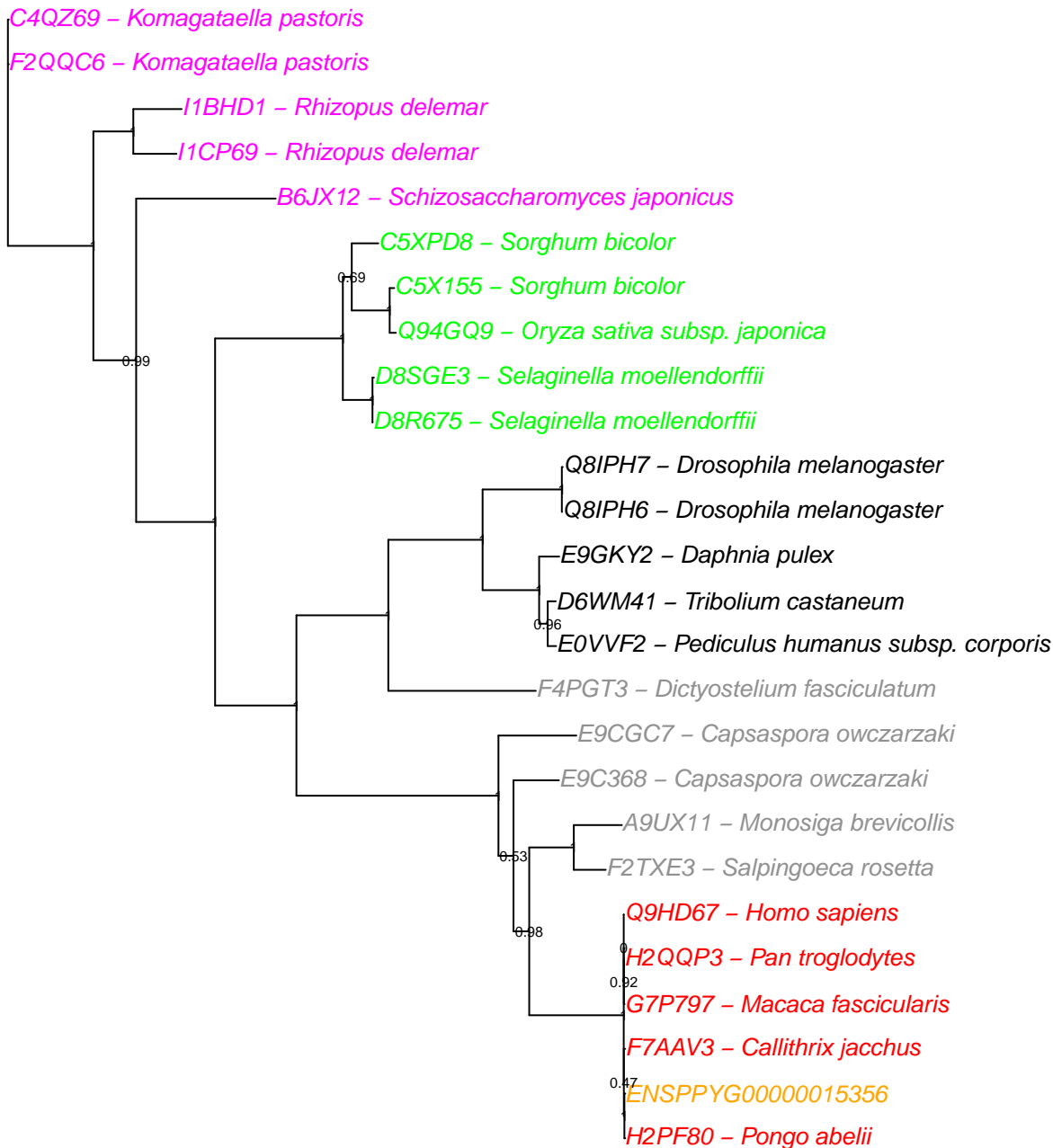
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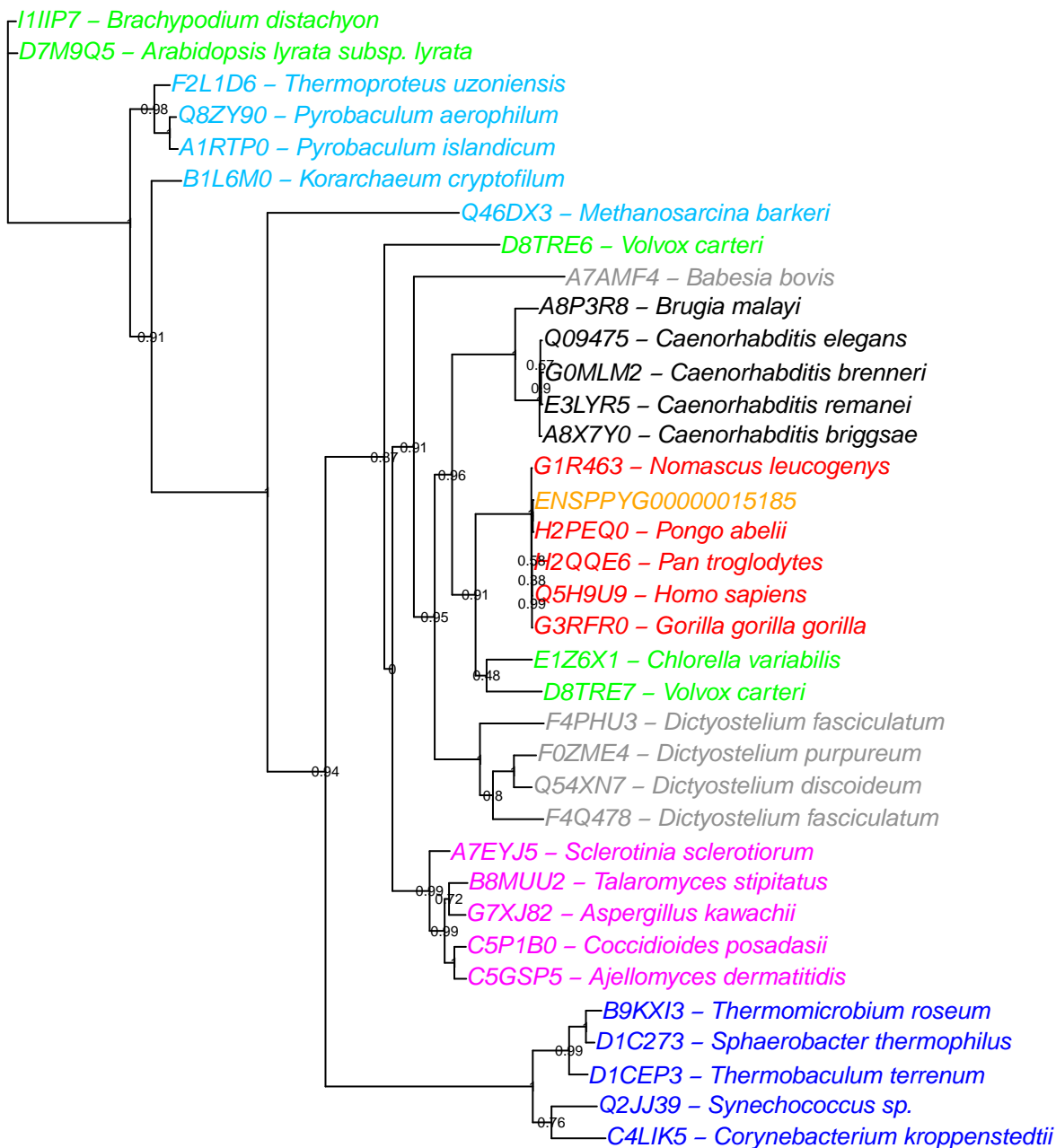
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0.91

0

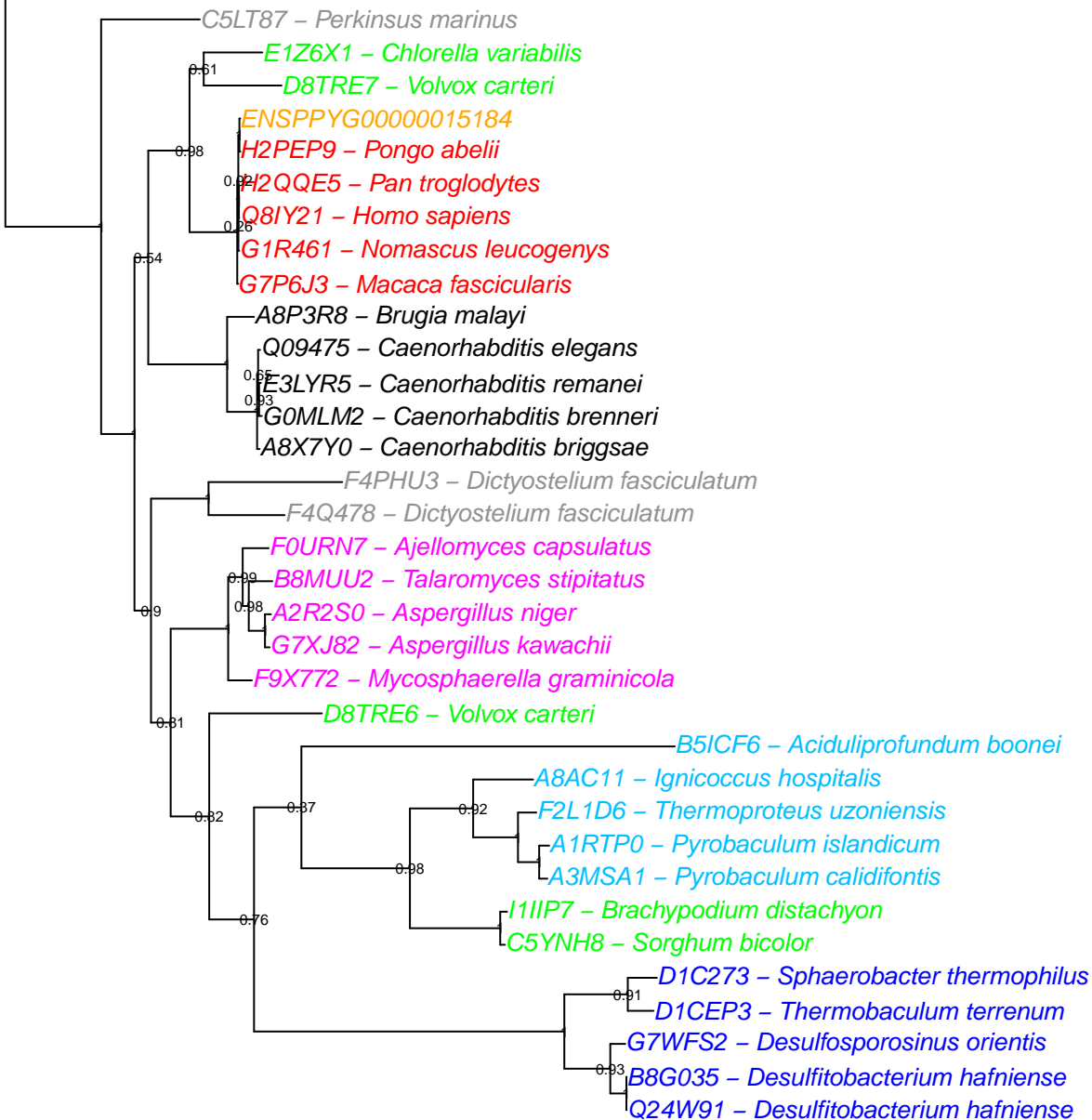


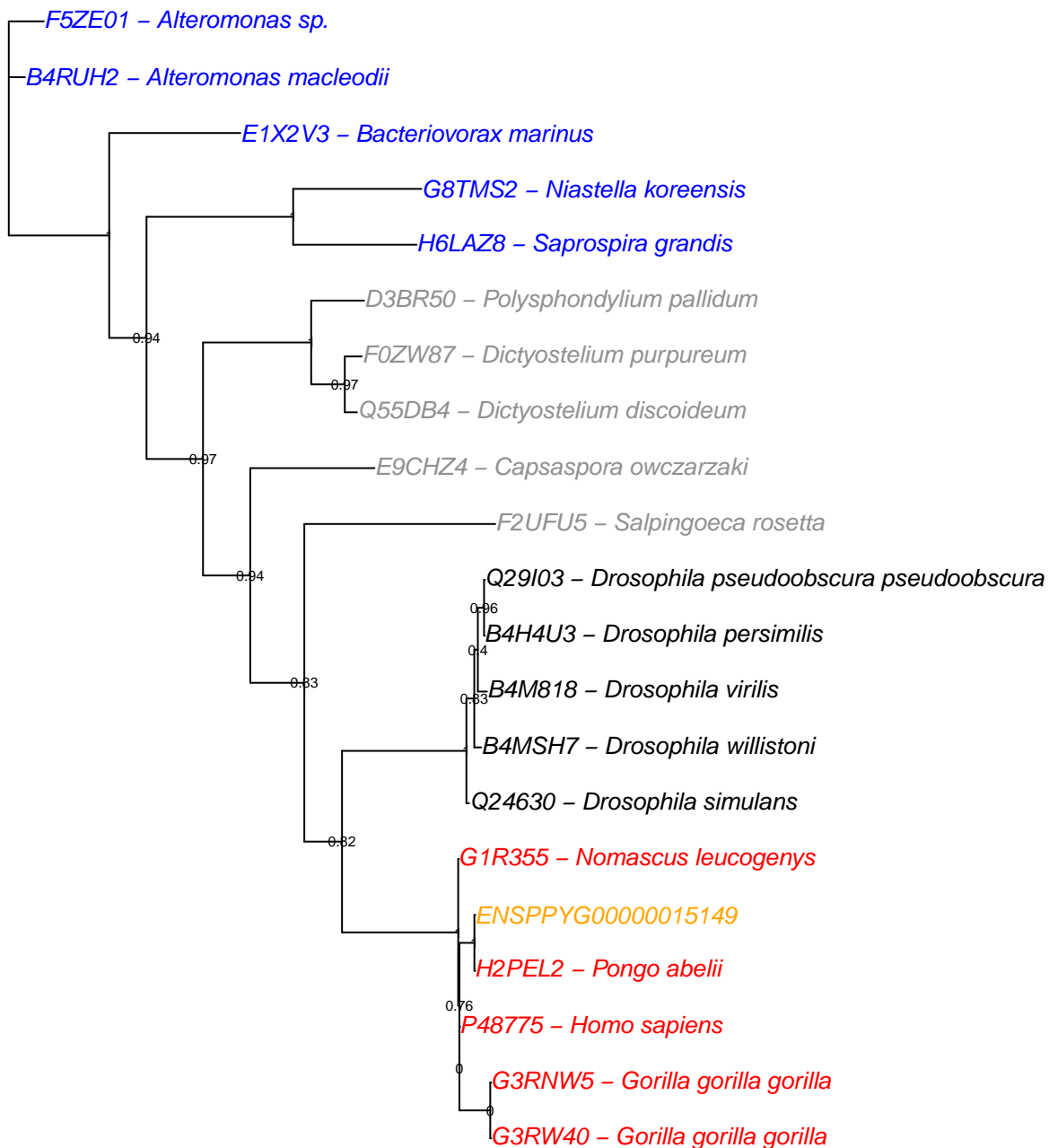


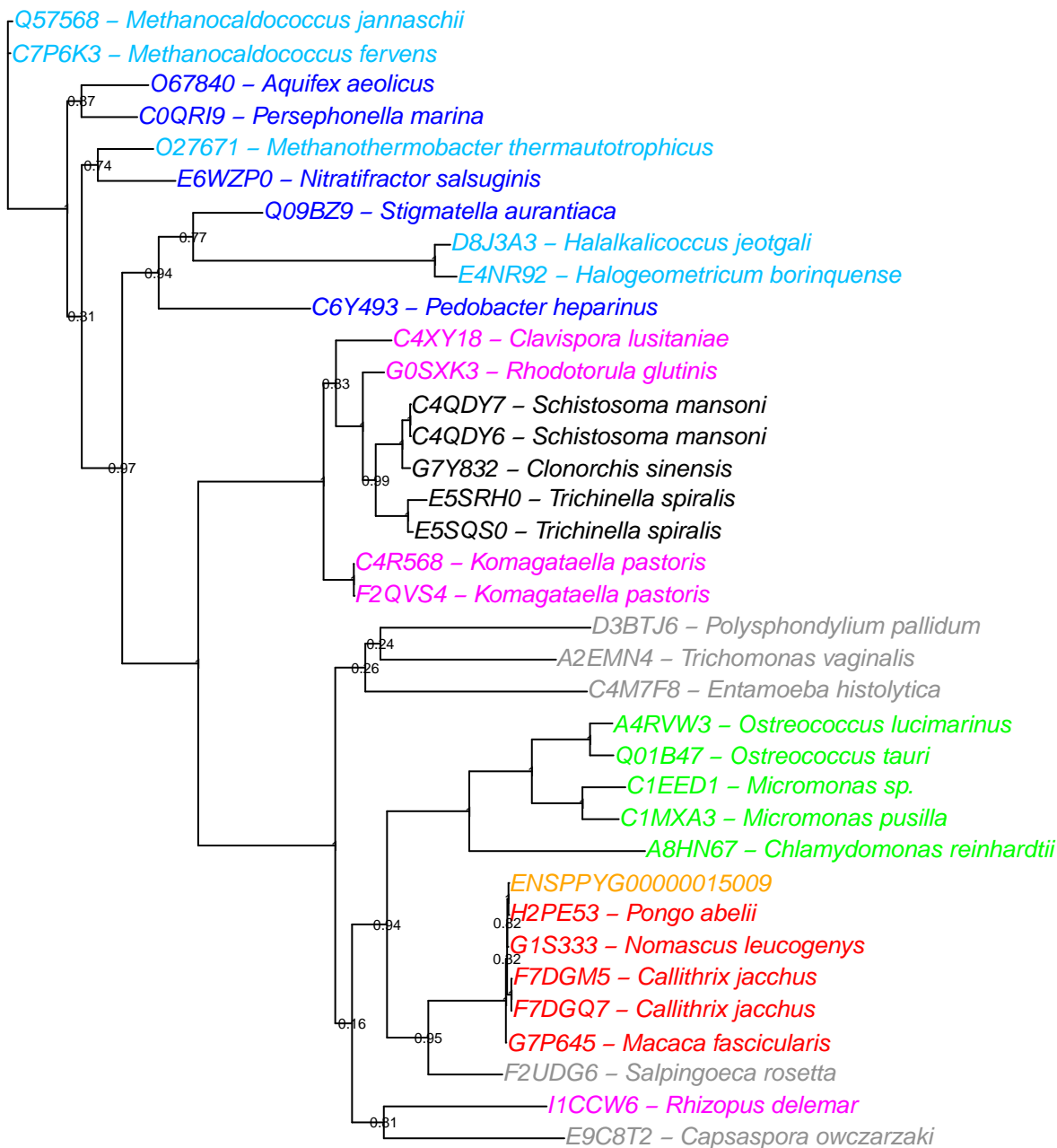


Q5CMX5 – *Cryptosporidium hominis*

Q5CRN9 – *Cryptosporidium parvum*







F4W4T1 – *Acromyrmex echinator*

E9IK94 – *Solenopsis invicta*

ENSPPYG00000014422

H2PCE3 – *Pongo abelii*

0.91

H2QP01 – *Pan troglodytes*

0.99

P40197 – *Homo sapiens*

F6X4B0 – *Macaca mulatta*

F7IGY1 – *Callithrix jacchus*

Q16ET9 – *Aedes aegypti*

E9CJE9 – *Capsaspora owczarzaki*

0.99

E9CIL3 – *Capsaspora owczarzaki*

0.79

E9CCF2 – *Capsaspora owczarzaki*

0.98

E9CF02 – *Capsaspora owczarzaki*

0.24

D7G7F2 – *Ectocarpus siliculosus*

C5MGN3 – *Candida tropicalis*

0.66

A3LSN1 – *Scheffersomyces stipitis*

G3BBH8 – *Candida tenuis*

Q72U35 – *Leptospira interrogans* serogroup Icterohaemorrhagiae serovar copenhageni

Q72U33 – *Leptospira interrogans* serogroup Icterohaemorrhagiae serovar copenhageni

Q8F119 – *Leptospira interrogans* serogroup Icterohaemorrhagiae serovar Lai

G7QHL9 – *Leptospira interrogans* serogroup Icterohaemorrhagiae serovar Lai

D8TSG8 – *Volvox carteri*

0.98

C1FI76 – *Micromonas* sp.

0.99

C1FHV9 – *Micromonas* sp.

0.26

C1FER3 – *Micromonas* sp.

0.96

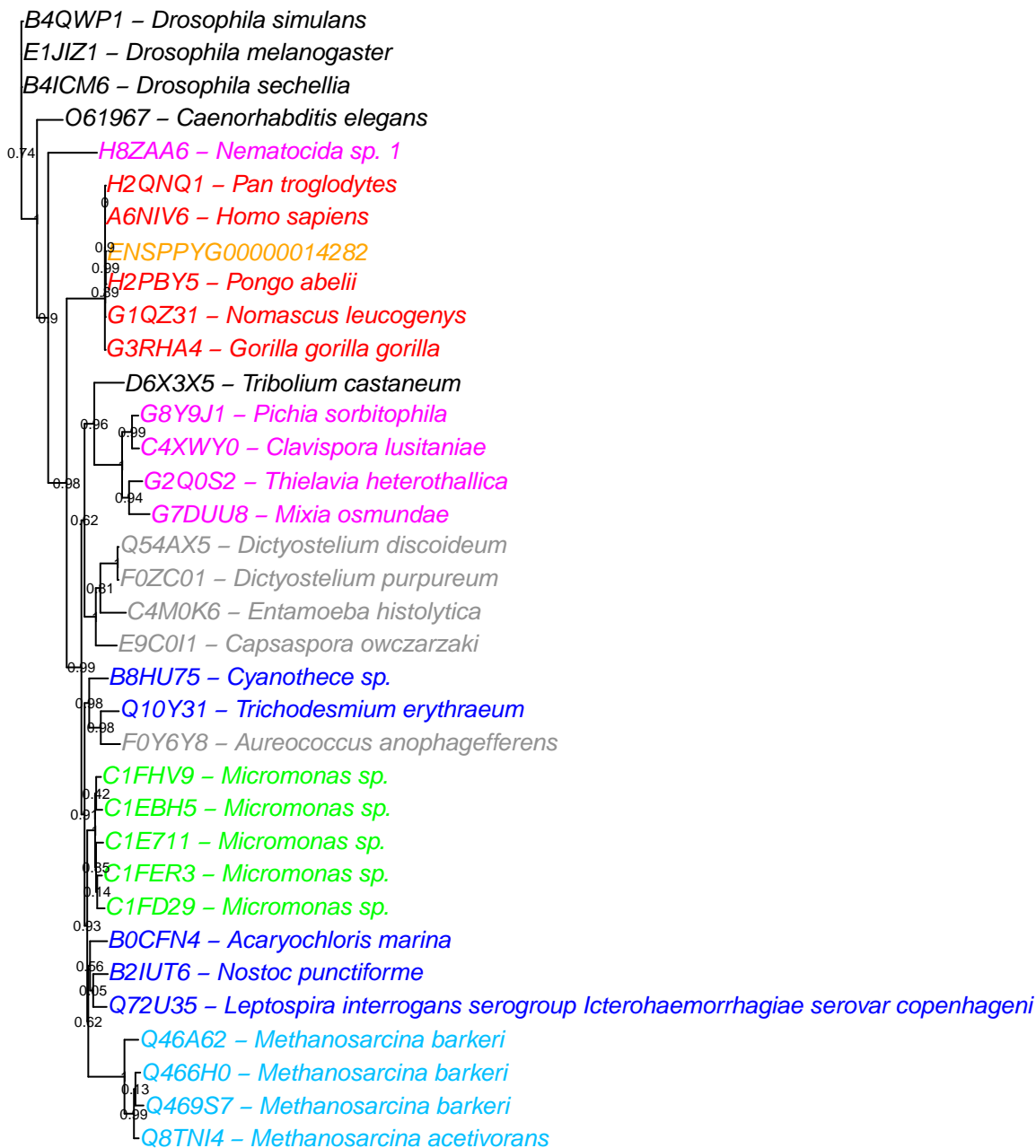
B2IXB5 – *Nostoc punctiforme*

D7KLX6 – *Arabidopsis lyrata* subsp. *lyrata*

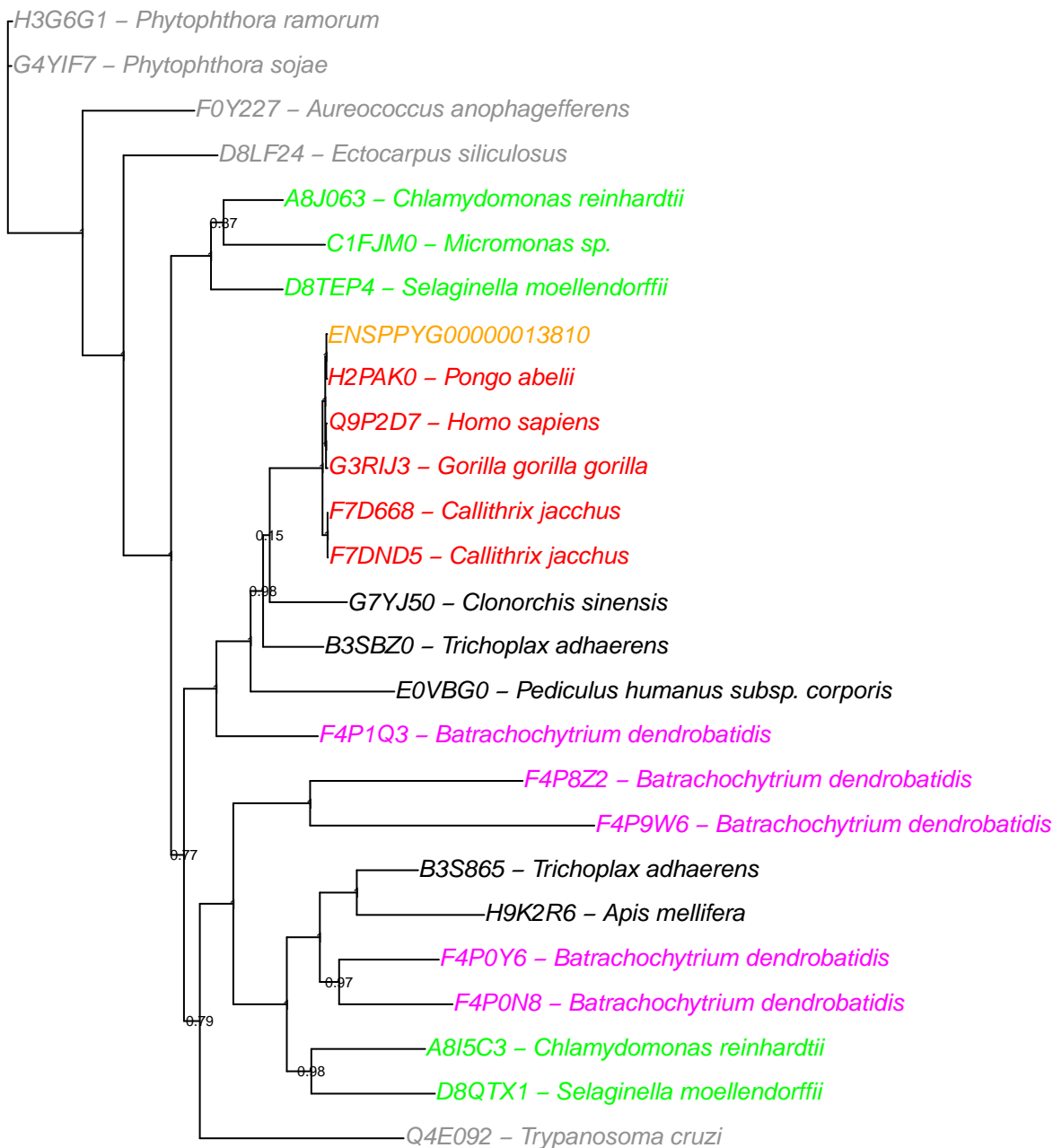
Q17K70 – *Aedes aegypti*

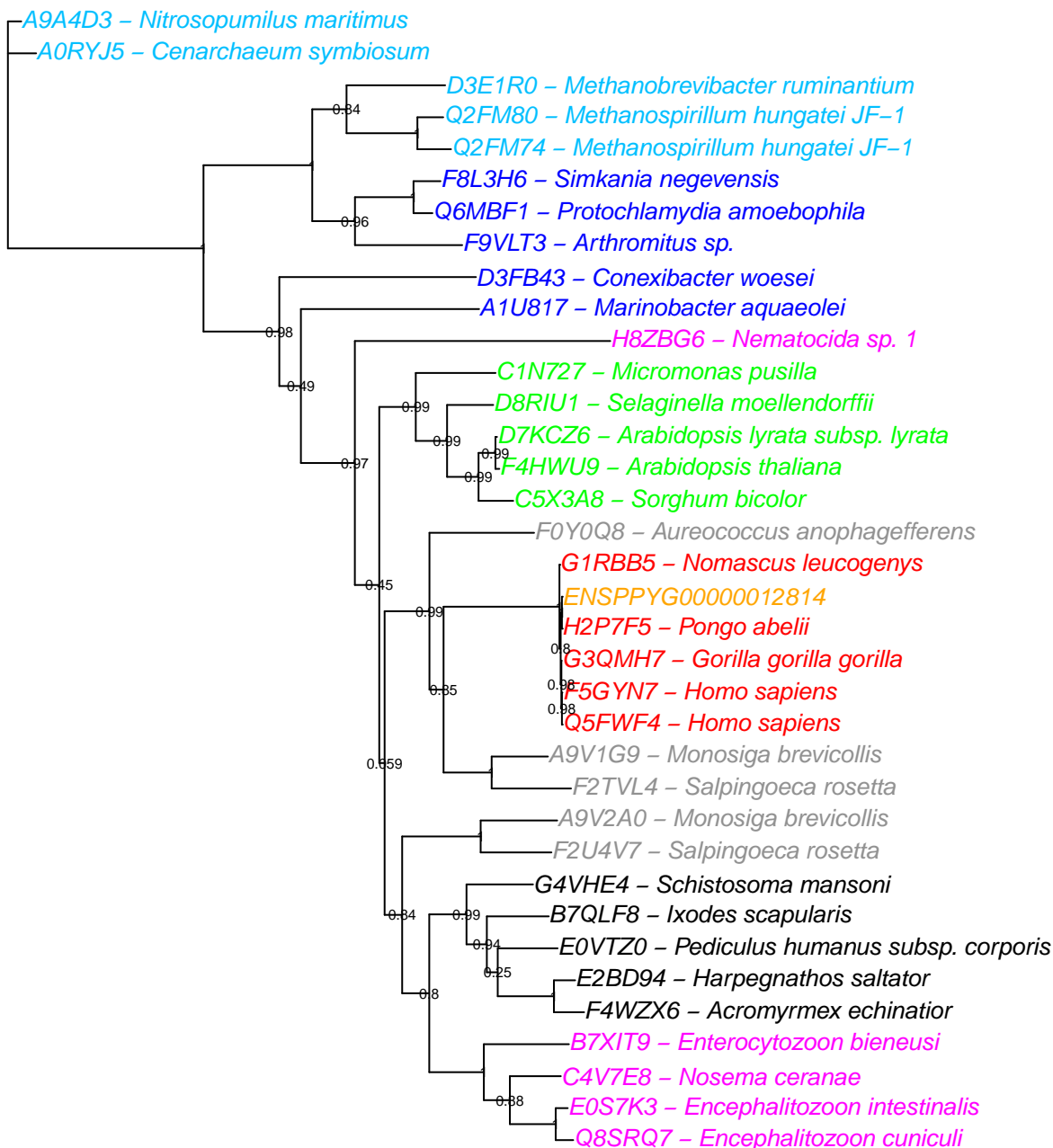
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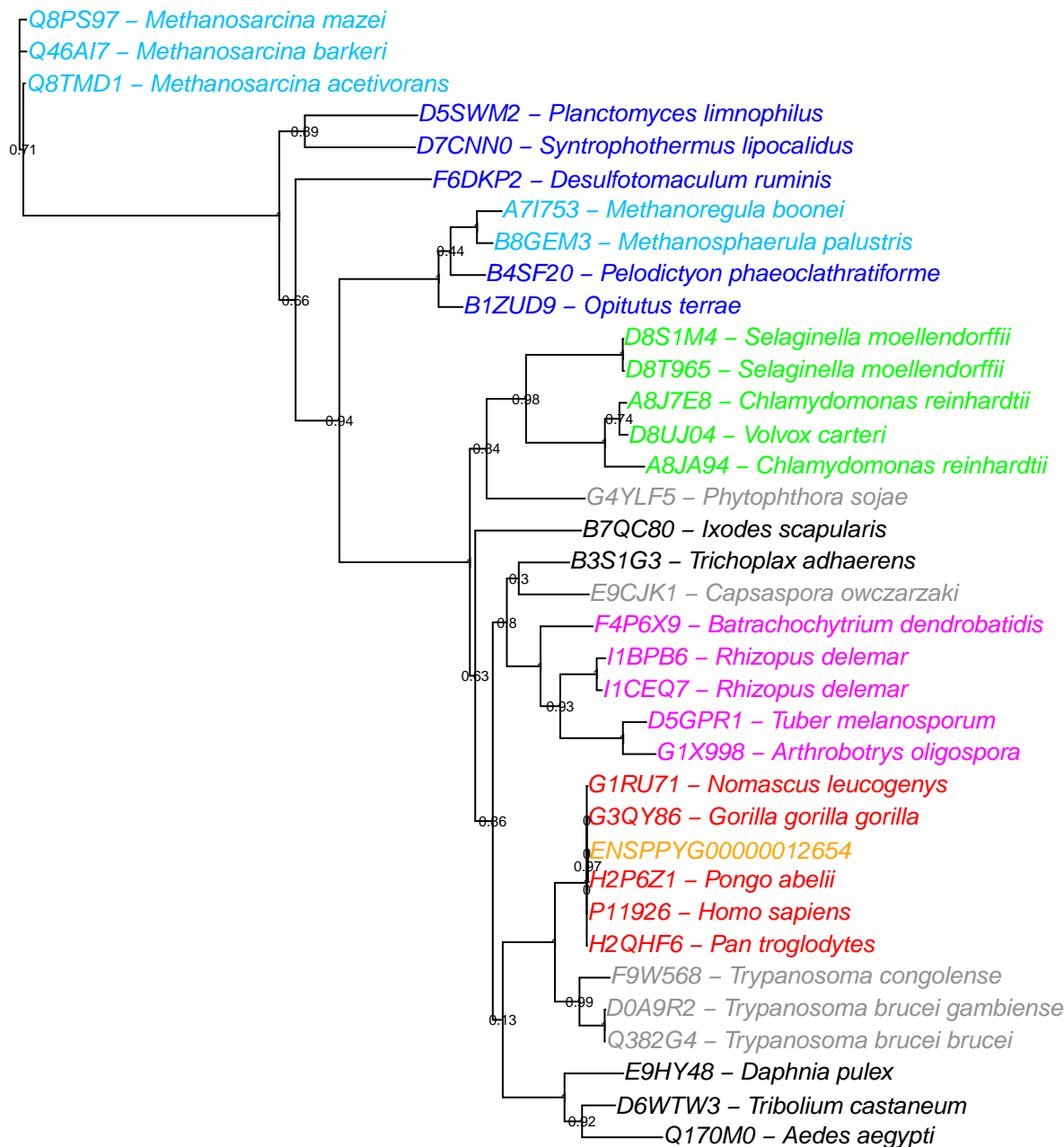
F4W961 – *Acromyrmex echinator*

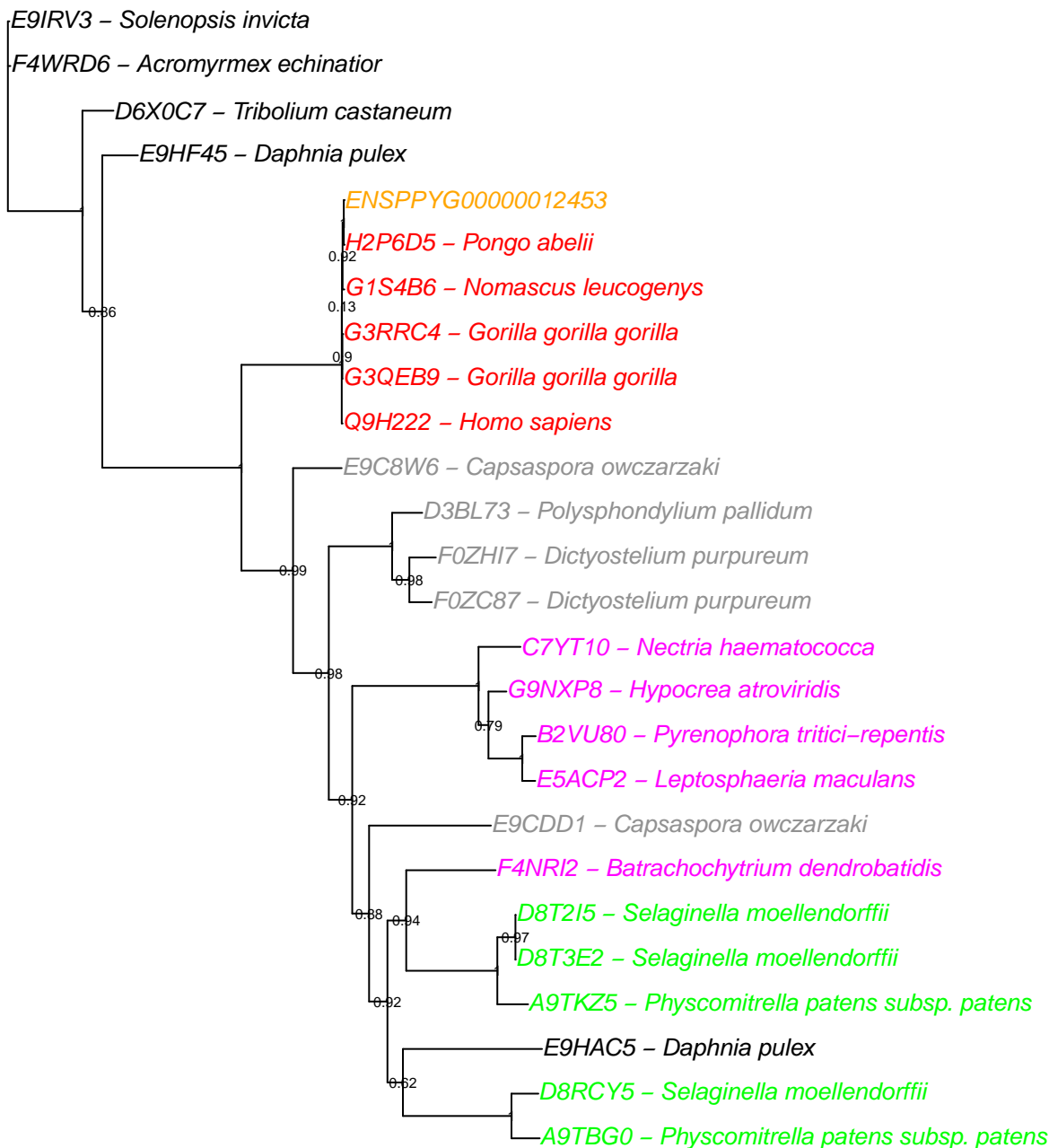


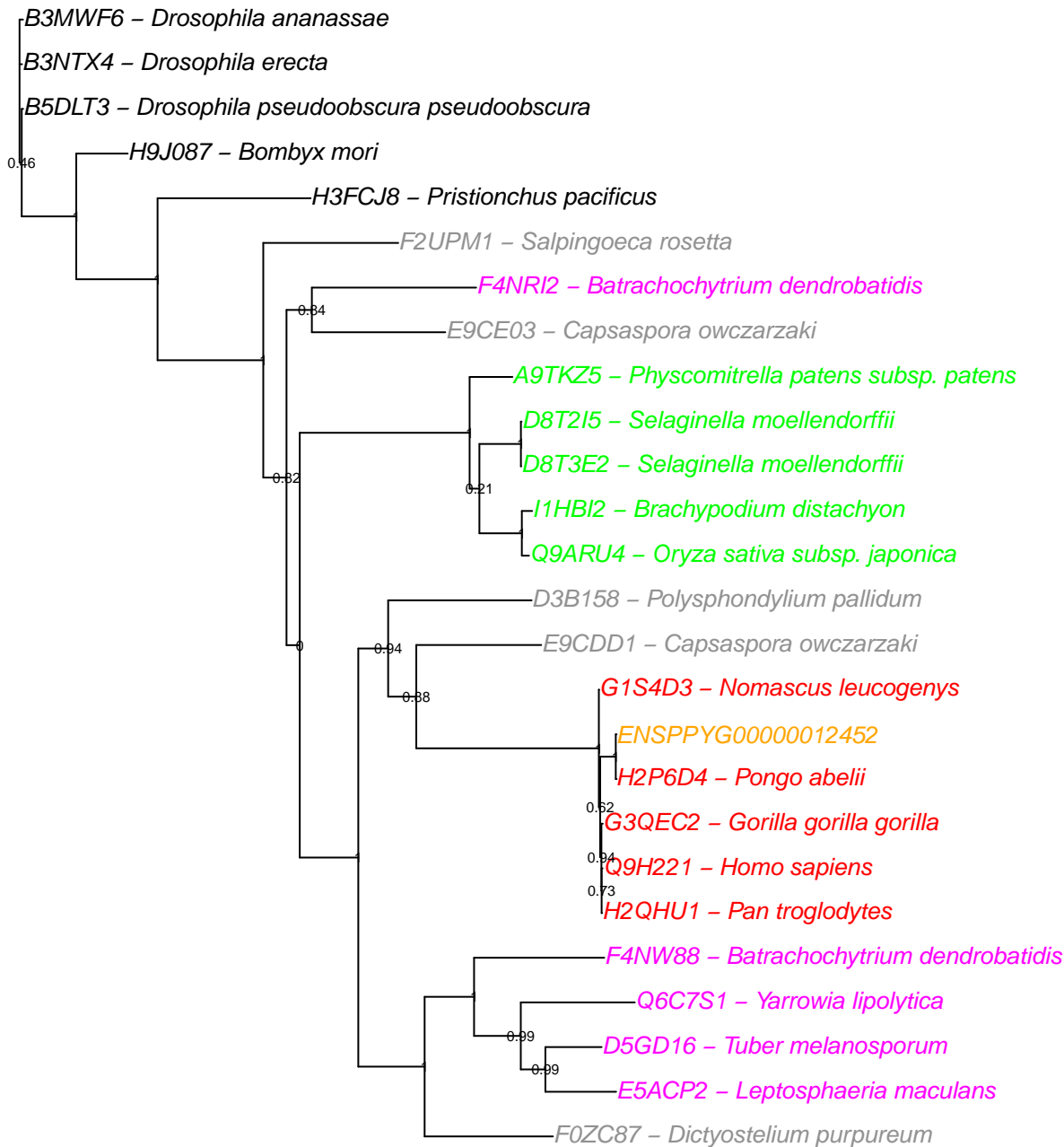


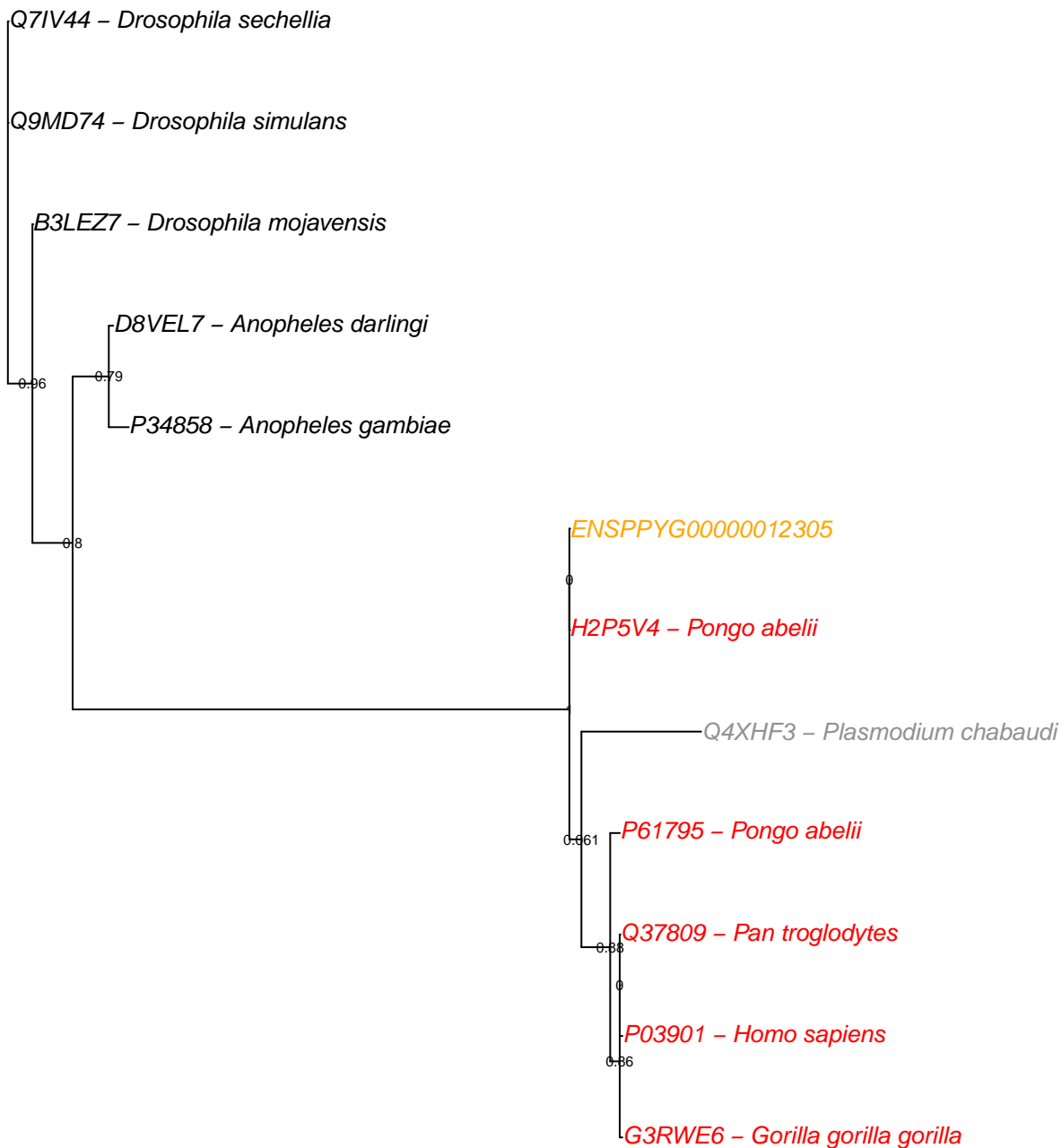


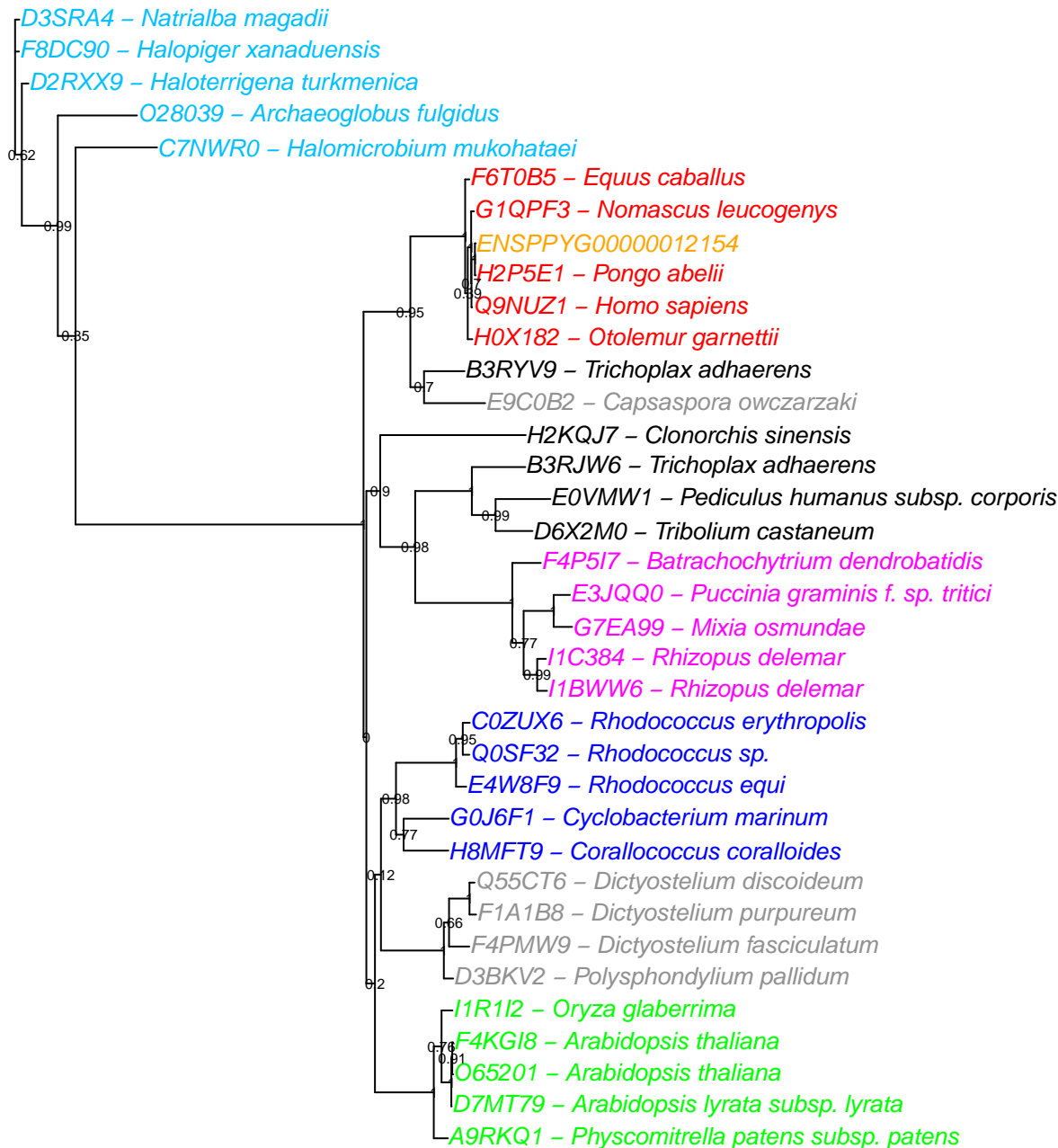












B4U180 – *Streptococcus equi* subsp. zooepidemicus

C0MEB5 – *Streptococcus equi* subsp. zooepidemicus

F8IPN2 – *Streptococcus equi* subsp. zooepidemicus

A0PYT8 – *Clostridium novyi*

H9IT08 – *Bombyx mori*

D6WNE7 – *Tribolium castaneum*

H9J0P9 – *Bombyx mori*

H7C0V4 – *Homo sapiens*

H2R734 – *Pan troglodytes*

ENSPPYG00000011597

H2P3N9 – *Pongo abelii*

Q9BZR6 – *Homo sapiens*

G3QTA6 – *Gorilla gorilla gorilla*

B2IXB5 – *Nostoc punctiforme*

C1FHV9 – *Micromonas* sp.

C1DZD8 – *Micromonas* sp.

E9CIL4 – *Capsaspora owczarzaki*

E9CIK9 – *Capsaspora owczarzaki*

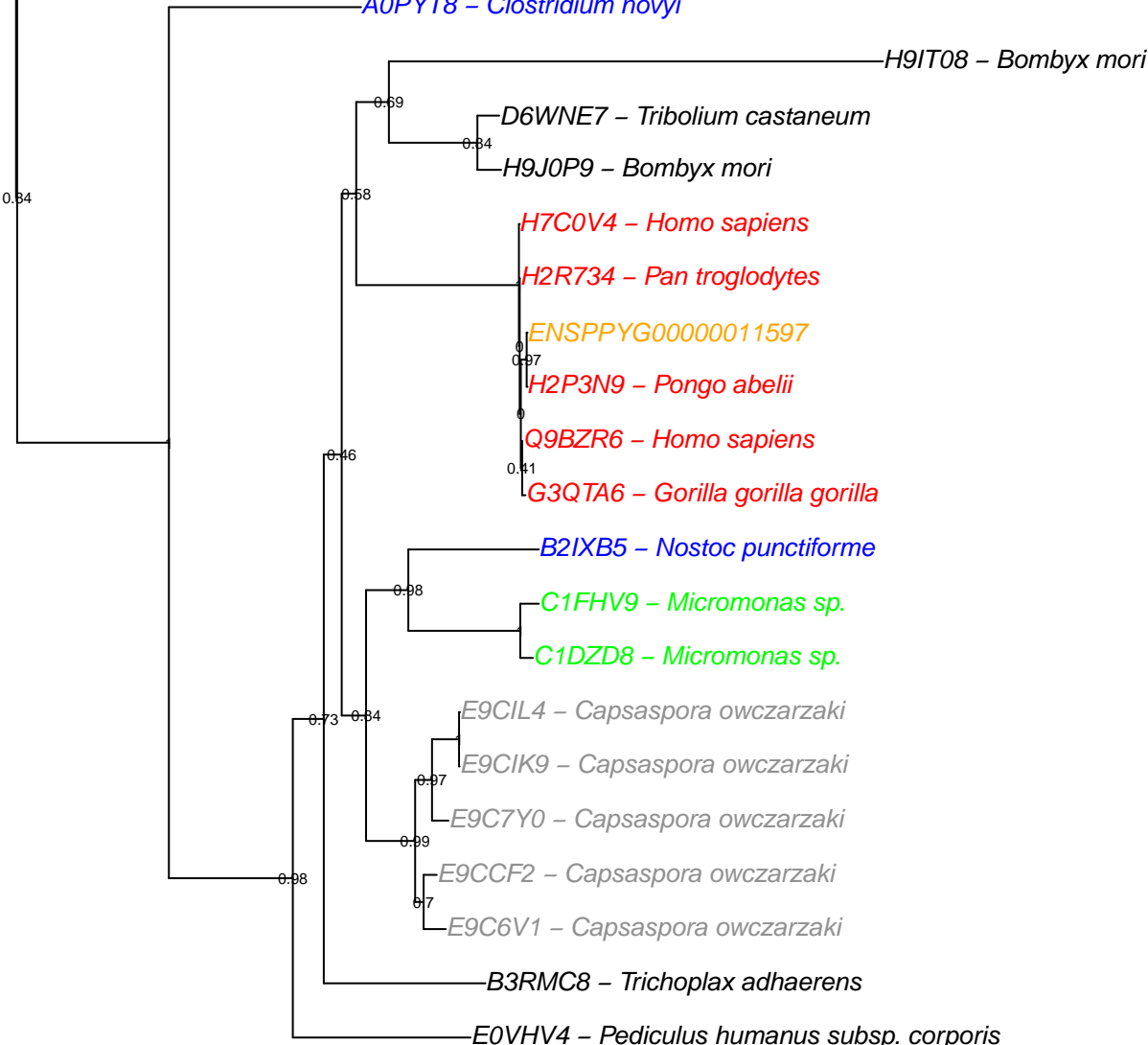
E9C7Y0 – *Capsaspora owczarzaki*

E9CCF2 – *Capsaspora owczarzaki*

E9C6V1 – *Capsaspora owczarzaki*

B3RMC8 – *Trichoplax adhaerens*

E0VHV4 – *Pediculus humanus* subsp. corporis



Q6YYZ1 – *Oryza sativa* subsp. *japonica*

I1QLFL2 – *Oryza glaberrima*

D7KU66 – *Arabidopsis lyrata* subsp. *lyrata*

Q9CAE3 – *Arabidopsis thaliana*

G6DGN7 – *Danaus plexippus*

B3M4Q6 – *Drosophila ananassae*

Q2M0W7 – *Drosophila pseudoobscura pseudoobscura*

B4GR01 – *Drosophila persimilis*

Q01CE3 – *Ostreococcus tauri*

F0ZWJ7 – *Dictyostelium purpureum*

Q2UGR5 – *Aspergillus oryzae*

D3T0G7 – *Natrialba magadii*

I1SAC1 – *Gibberella zeae*

H1VNL5 – *Colletotrichum higginsianum*

B2AEF4 – *Podospora anserina*

ENSPPYG00000010269

H2NZQ2 – *Pongo abelii*

G3R3Z5 – *Gorilla gorilla gorilla*

G3RPA7 – *Gorilla gorilla gorilla*

Q96RQ9 – *Homo sapiens*

F6PJF4 – *Macaca mulatta*

B3RTE0 – *Trichoplax adhaerens*

C0ZGN6 – *Brevibacillus brevis*

C1EQK0 – *Bacillus cereus*

A0RCT5 – *Bacillus thuringiensis*

O34363 – *Bacillus subtilis*

E8V8U8 – *Bacillus subtilis*

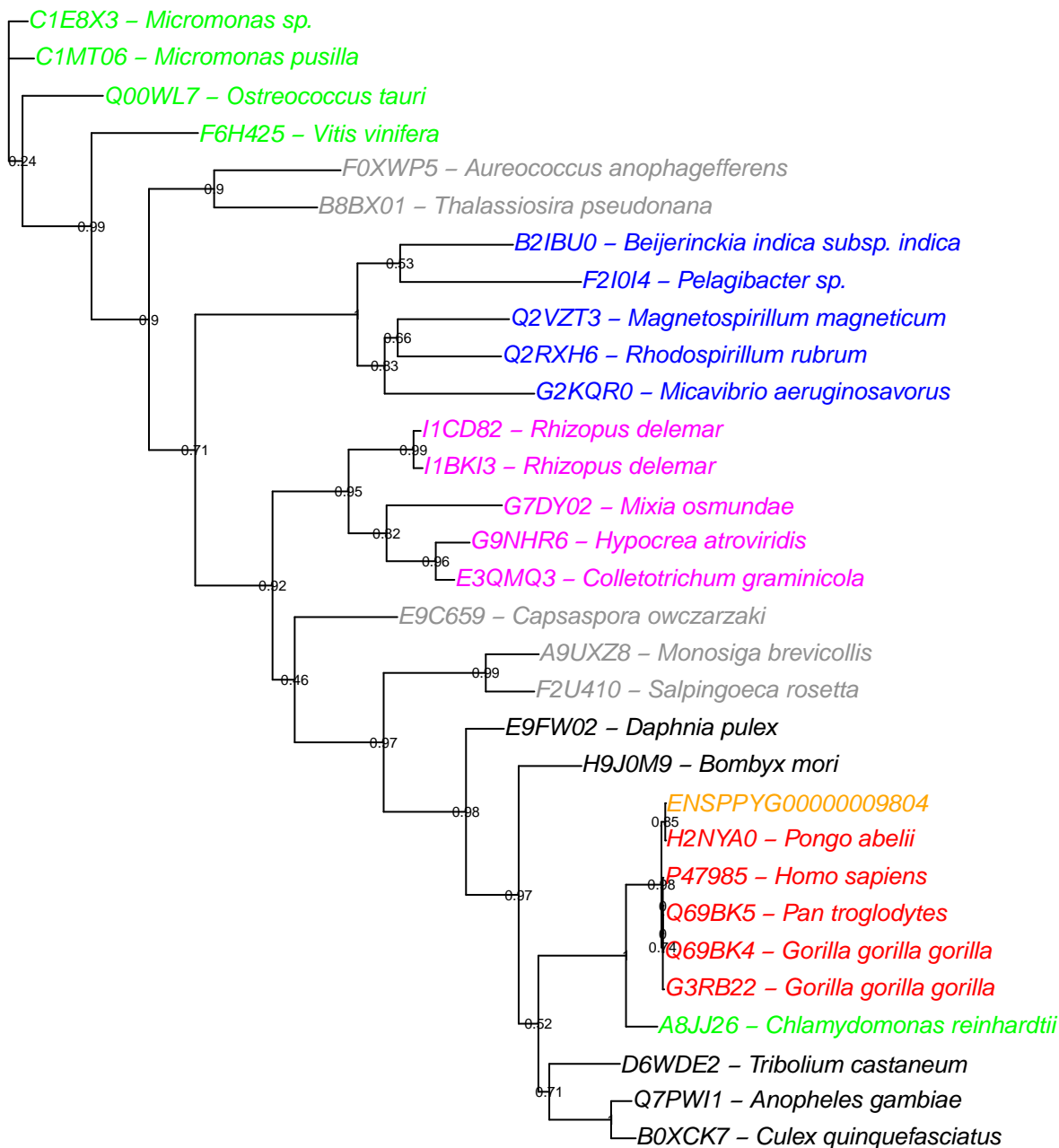
G4TAF0 – *Piriformospora indica*

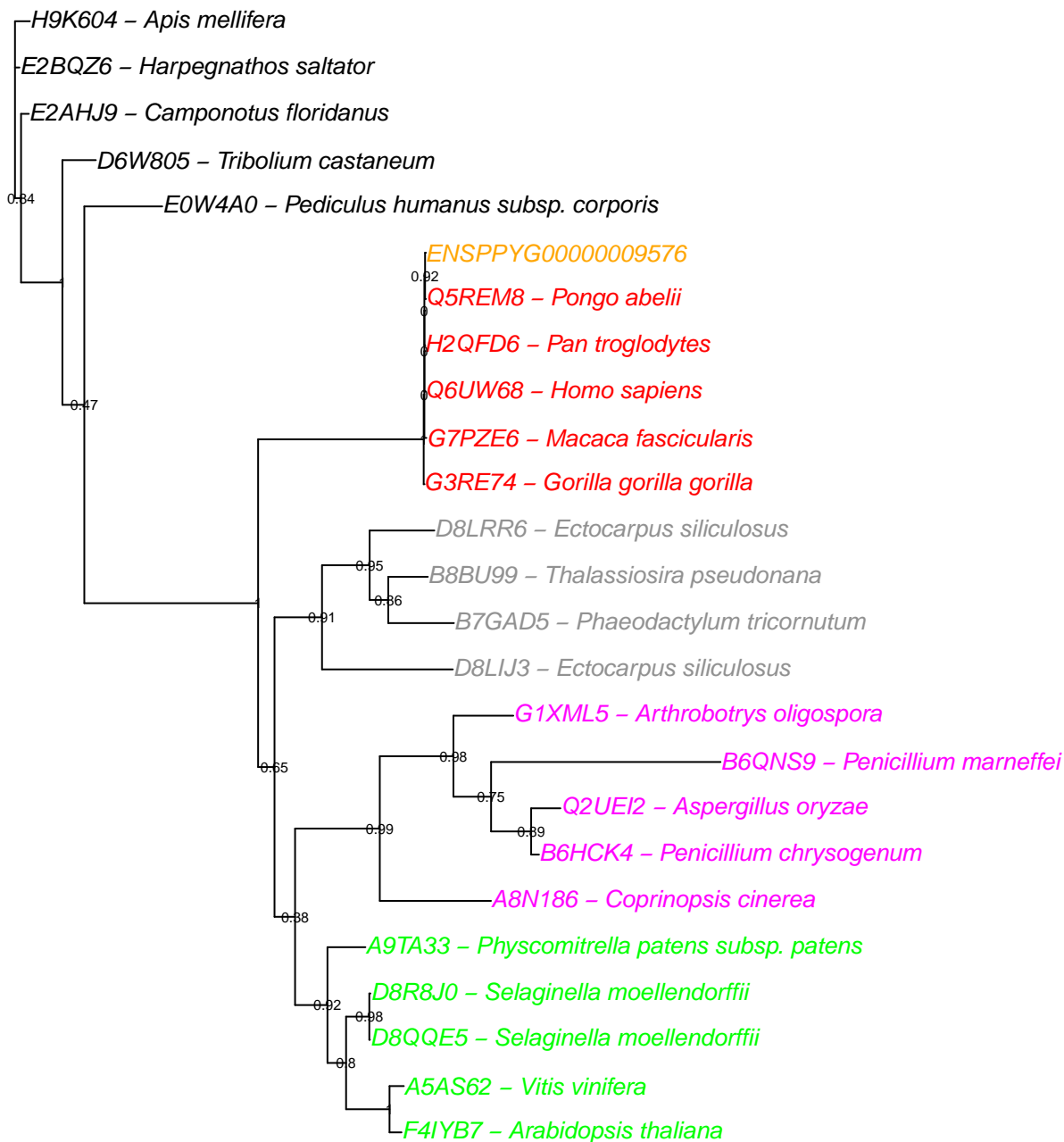
F4Q7Z5 – *Dictyostelium fasciculatum*

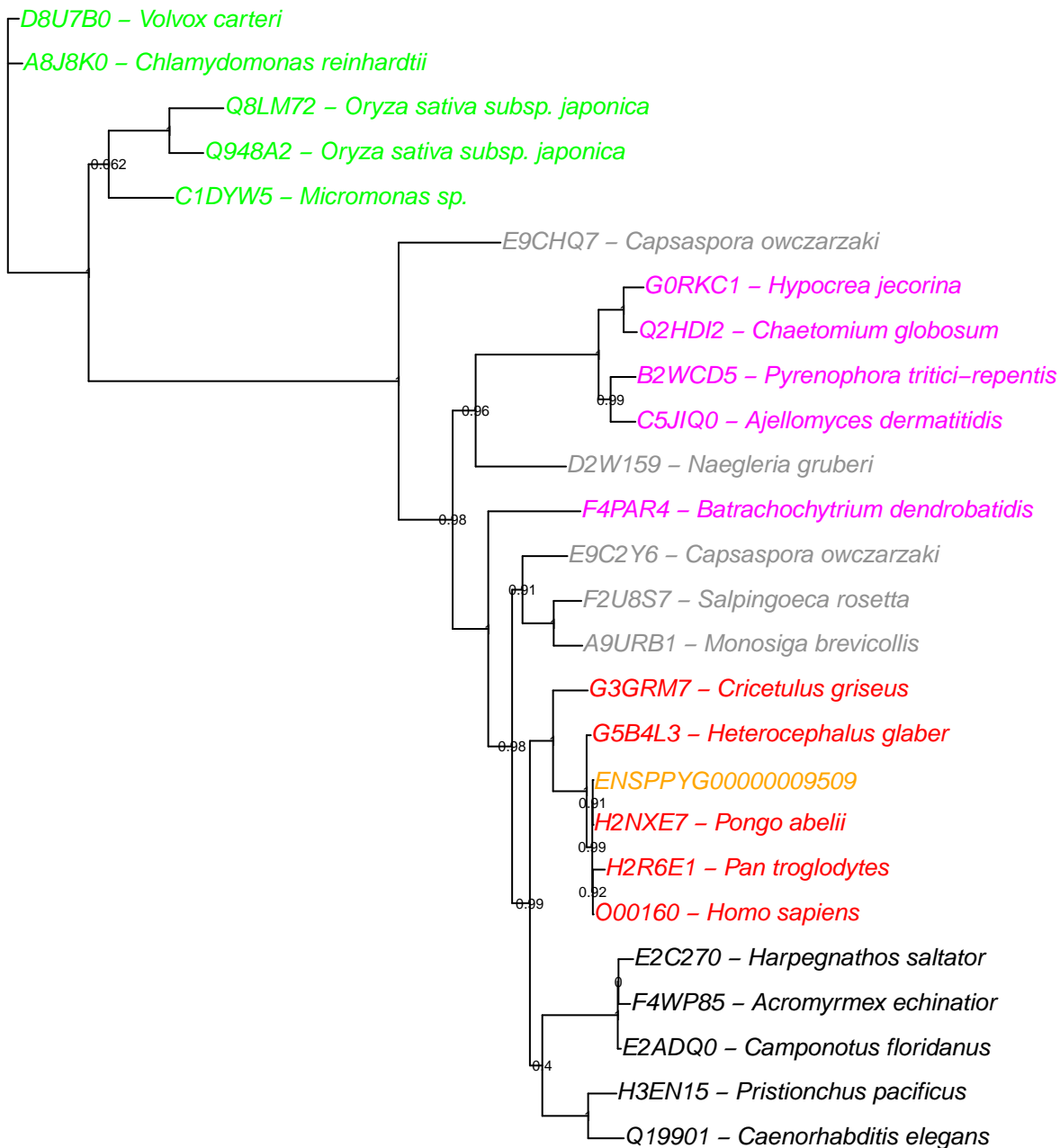
Q54EW2 – *Dictyostelium discoideum*

F0ZQG0 – *Dictyostelium purpureum*

F0ZQF9 – *Dictyostelium purpureum*







-C5FKP4 – *Arthroderma otae*

E9F6J5 – *Metarhizium anisopliae*

A9SJW0 – *Physcomitrella patens* subsp. *patens*

A9RQJ6 – *Physcomitrella patens* subsp. *patens*

D8SJF8 – Selaginella moellendorffii

D8RS41 – *Selaginella moellendorffii*

-D2VNS8 – *Naegleria gruberi*

-E9H186 – *Daphnia pulex*

-B7Q0E8 - Ixodes scapularis

—B7PKZ6 – *Ixodes scapularis*

—B7P4B2 – *Ixodes scapularis*

-G0QR80 – *Ichthyophthirius multifiliis*

23MN9 – *Tetrahymena thermophila*23MN7 – *Tetrahymena thermophila*23MN8 – *Tetrahymena thermophila*

-B3S279 – *Trichoplax adhaerens*

H2QEN1 – Pan troglodytes

ENSPPYG00000009222

H2NWI5 – *Pongo abelii*

G1RCG6 – *Nomascus leucogenys*

G3SJ51 – *Gorilla gorilla gorilla*

P05120 – Homo sapiens

– Q8TNN7 – *Methanosarcina acetivorans*

E1RK57 – *Methanoplanus petrolearius*

E1RK56 – *Methanoplanus petrolearius*

—B8GG16 – *Methanosphaerula palustris*

—A3CSP3 – *Methanoculleus marisnigri*

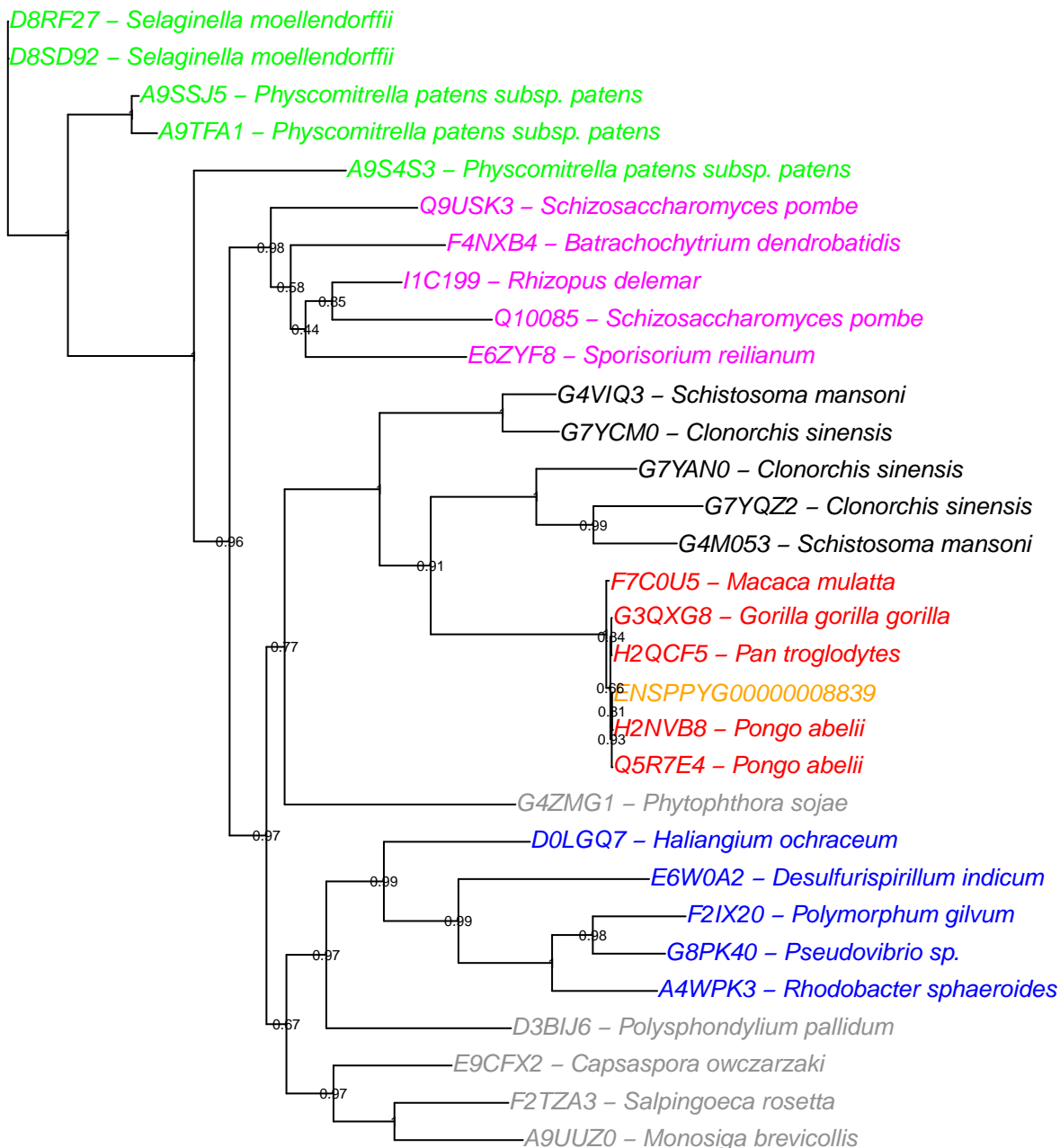
A9GEN7 – Sorangium cellulosum

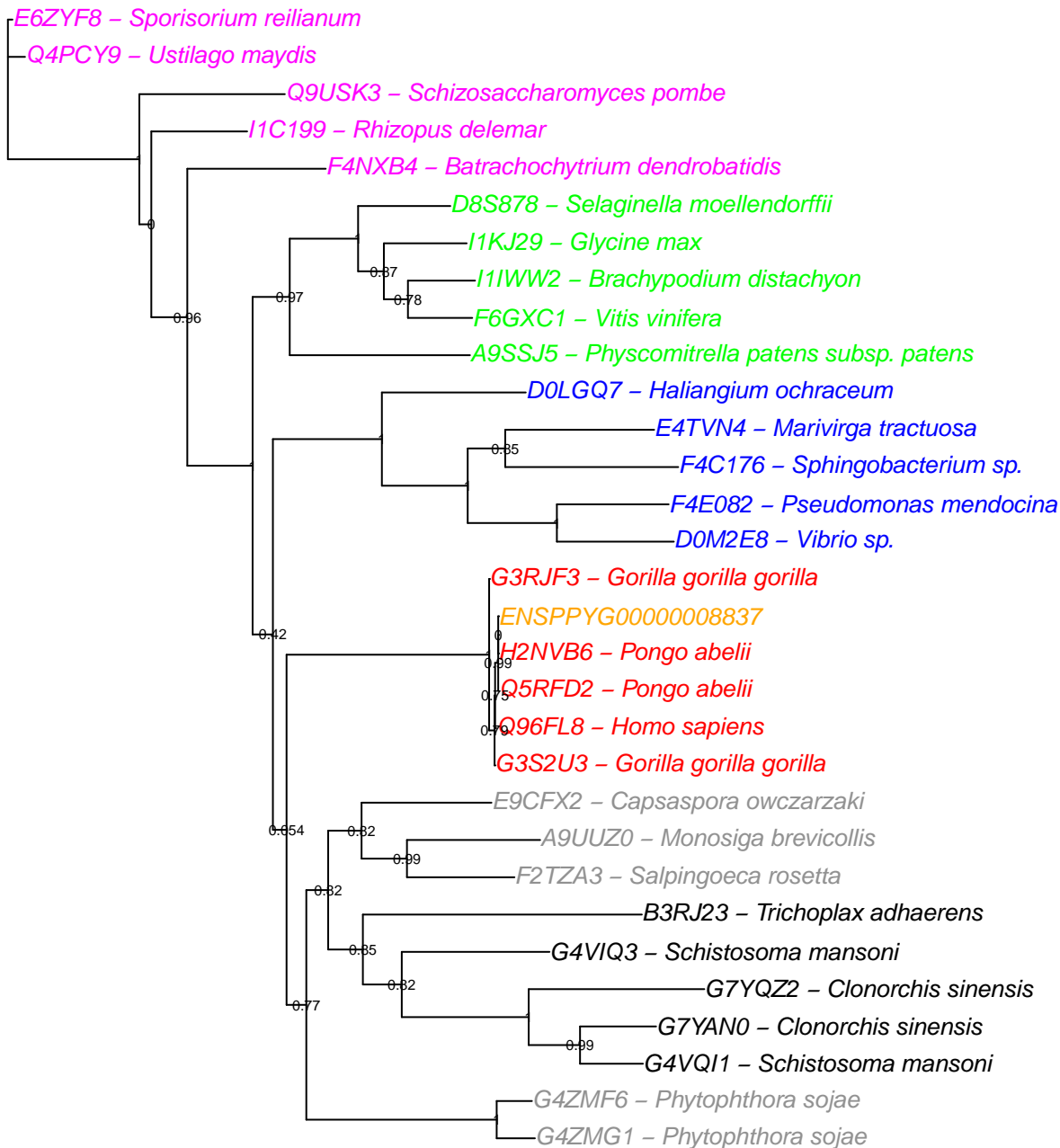
B5YAA6 – *Dictyoglomus thermophilum*

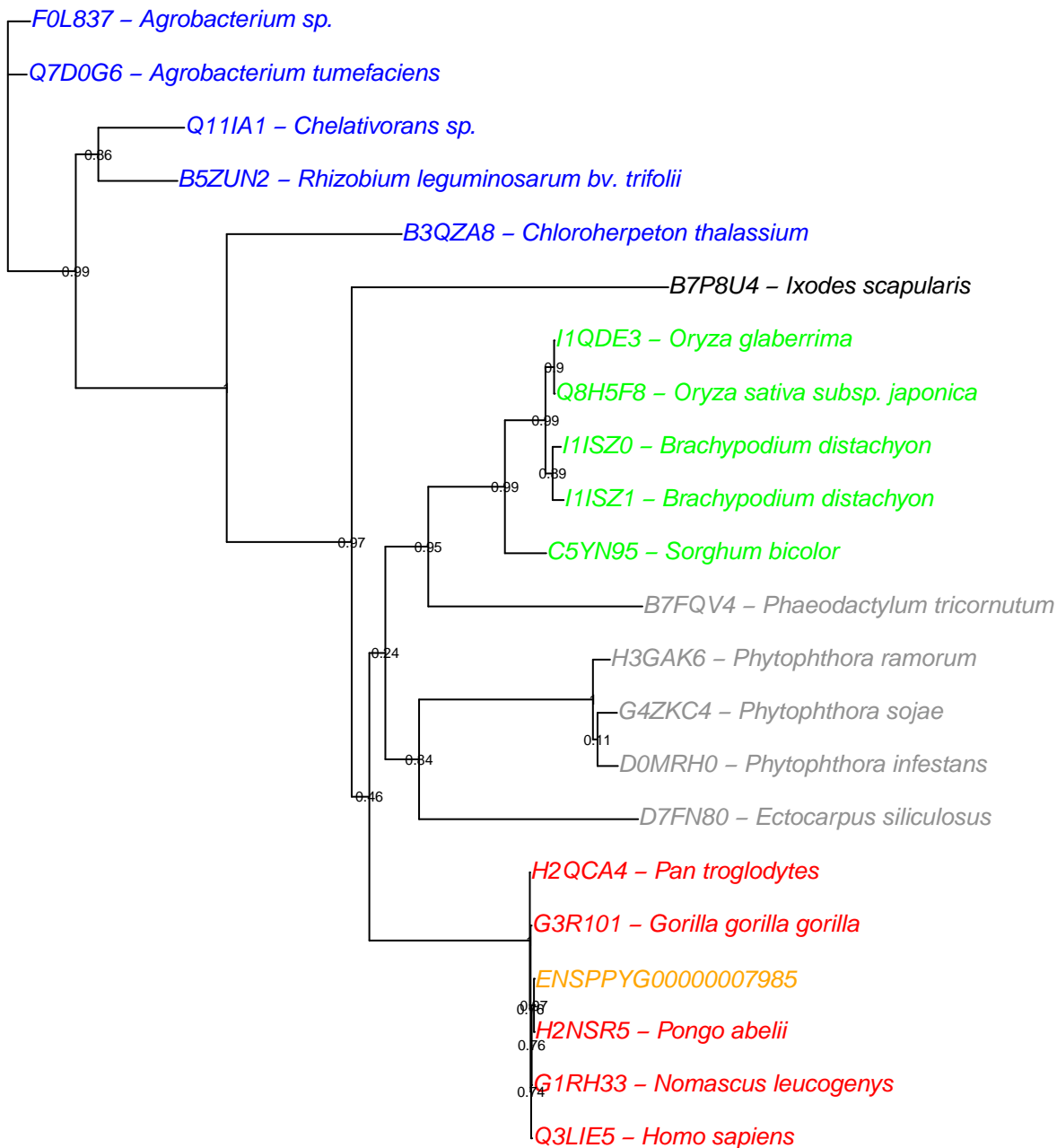
B8E367 – *Dictyoglomus turgidum*

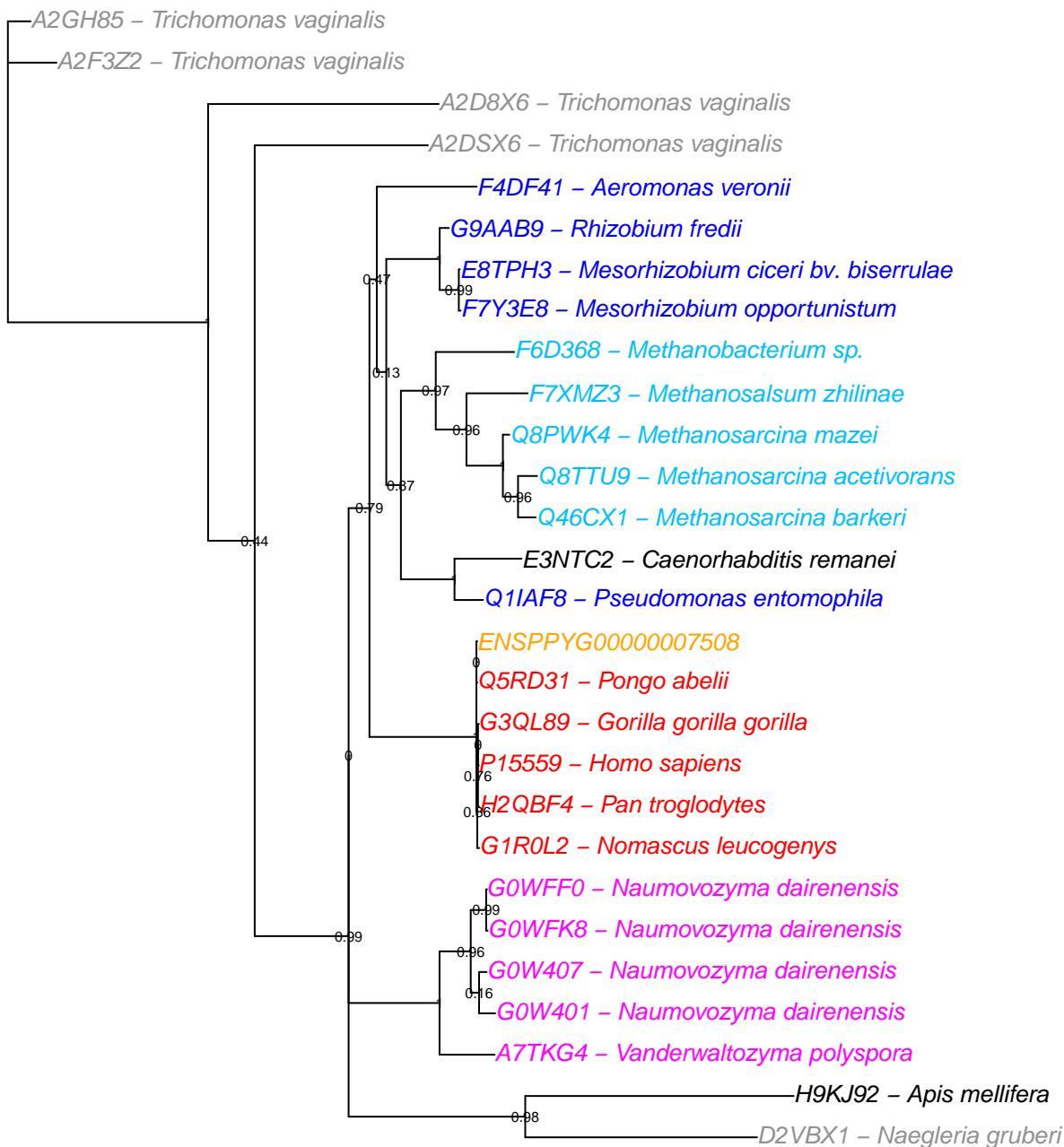
B2V5S5 – Sulfurihydrogenibium sp.

-F8C5E0 – *Thermodesulfobacterium geofontis*









B4U0D4 – *Streptococcus equi* subsp. *zooepidemicus*

F8IM73 – *Streptococcus equi* subsp. *zooepidemicus*

C0MF69 – *Streptococcus equi* subsp. *zooepidemicus*

E4SPX6 – *Streptococcus thermophilus*

Q03MS9 – *Streptococcus thermophilus*

B2B6A1 – *Podospira anserina*

ENSPPYG00000007496

G3QNI4 – *Gorilla gorilla gorilla*

H2QBE6 – *Pan troglodytes*

Q00219 – *Homo sapiens*

G1R027 – *Nomascus leucogenys*

G7Q1H5 – *Macaca fascicularis*

I1C447 – *Rhizopus delemar*

F9FZM0 – *Fusarium oxysporum*

B8PCC4 – *Postia placenta*

B8PKM3 – *Postia placenta*

E4NTD4 – *Halogeometricum borinquense*

D3SVK8 – *Natrialba magadii*

B8BZ32 – *Thalassiosira pseudonana*

B5YNX7 – *Thalassiosira pseudonana*

B8C4Q2 – *Thalassiosira pseudonana*

A8PV21 – *Brugia malayi*

H3FIF0 – *Pristionchus pacificus*

G5ECD6 – *Caenorhabditis elegans*

H2VHT5 – *Caenorhabditis japonica*

G0P120 – *Caenorhabditis brenneri*

D8LPB5 – *Ectocarpus siliculosus*

D7G7X6 – *Ectocarpus siliculosus*

Q97YM4 – *Sulfolobus solfataricus*

F4G0D4 – *Metallosphaera cuprina*

A4YDN3 – *Metallosphaera sedula*

0.77

0.79

0.85

0.82

0.76

0.79

0.98

0.98

0.69

0.95

0.78

0.98

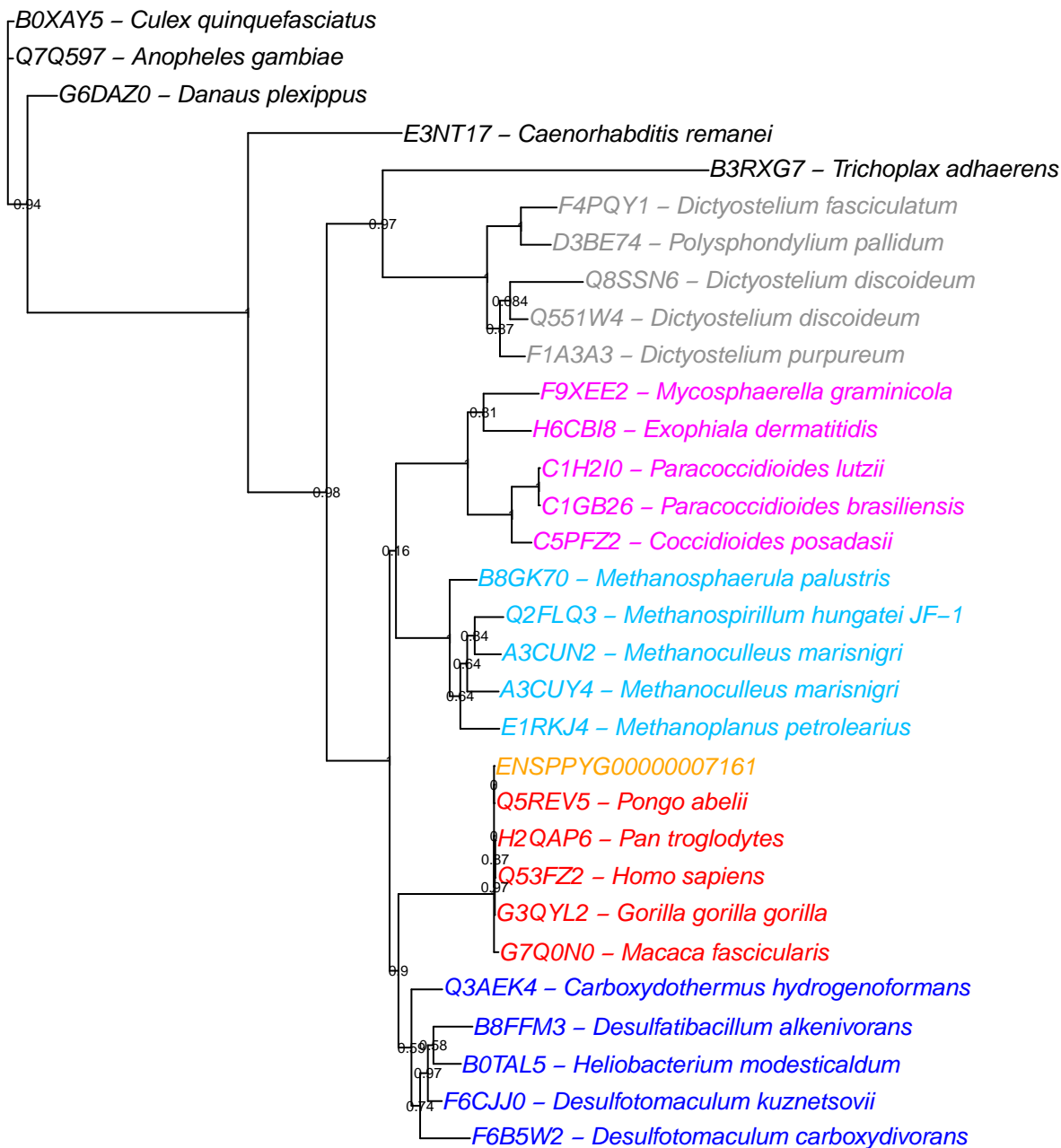
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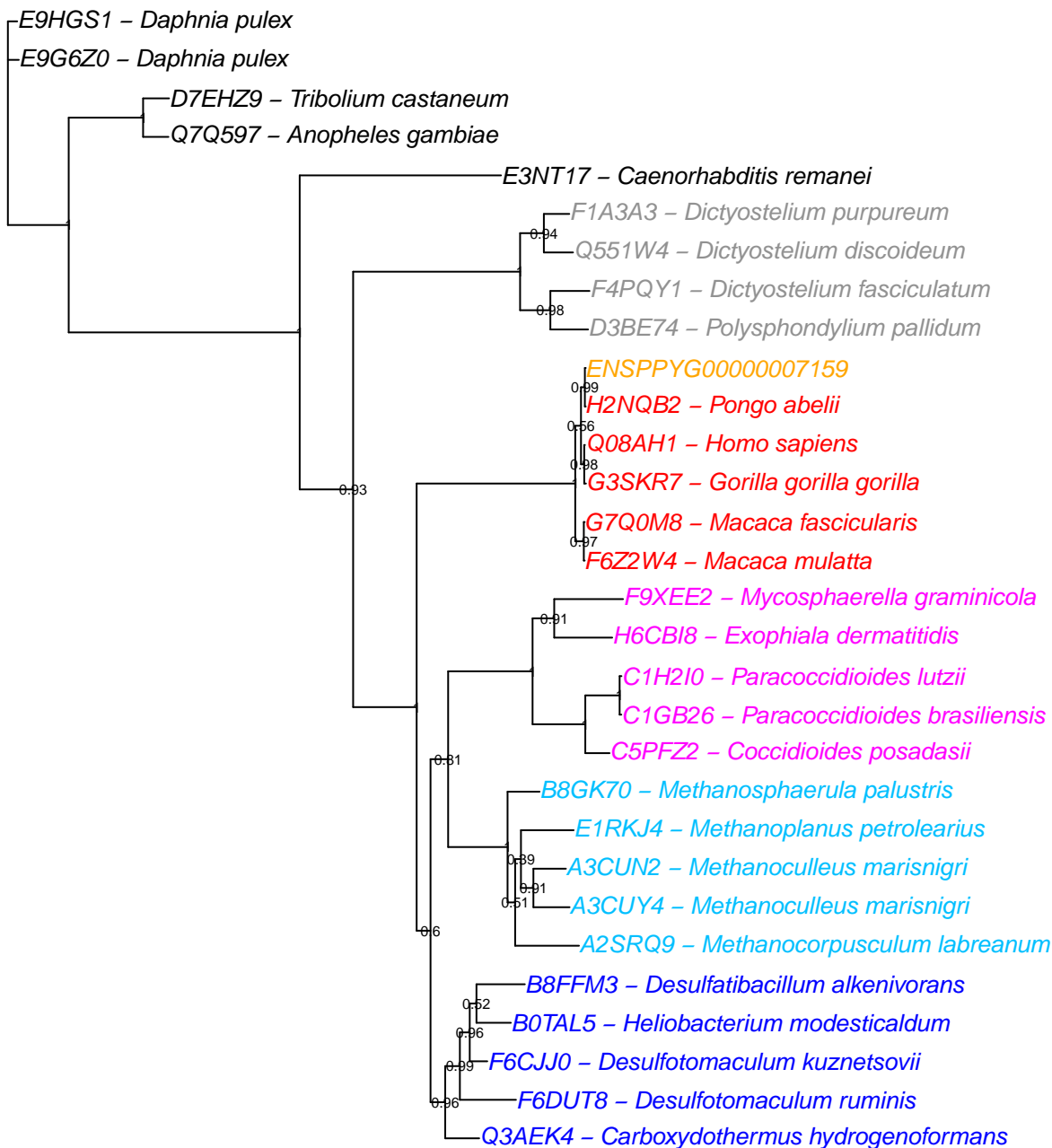
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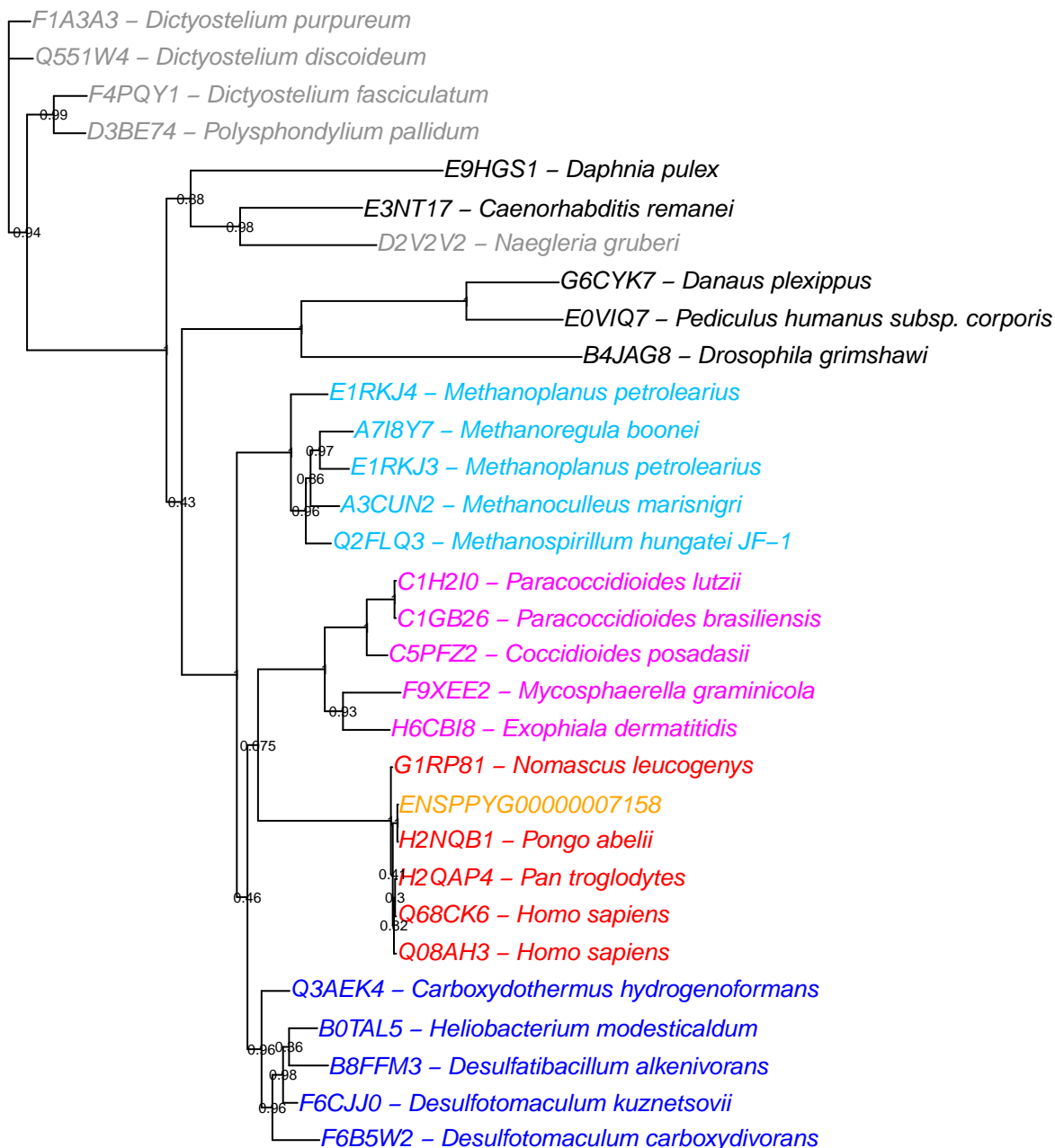
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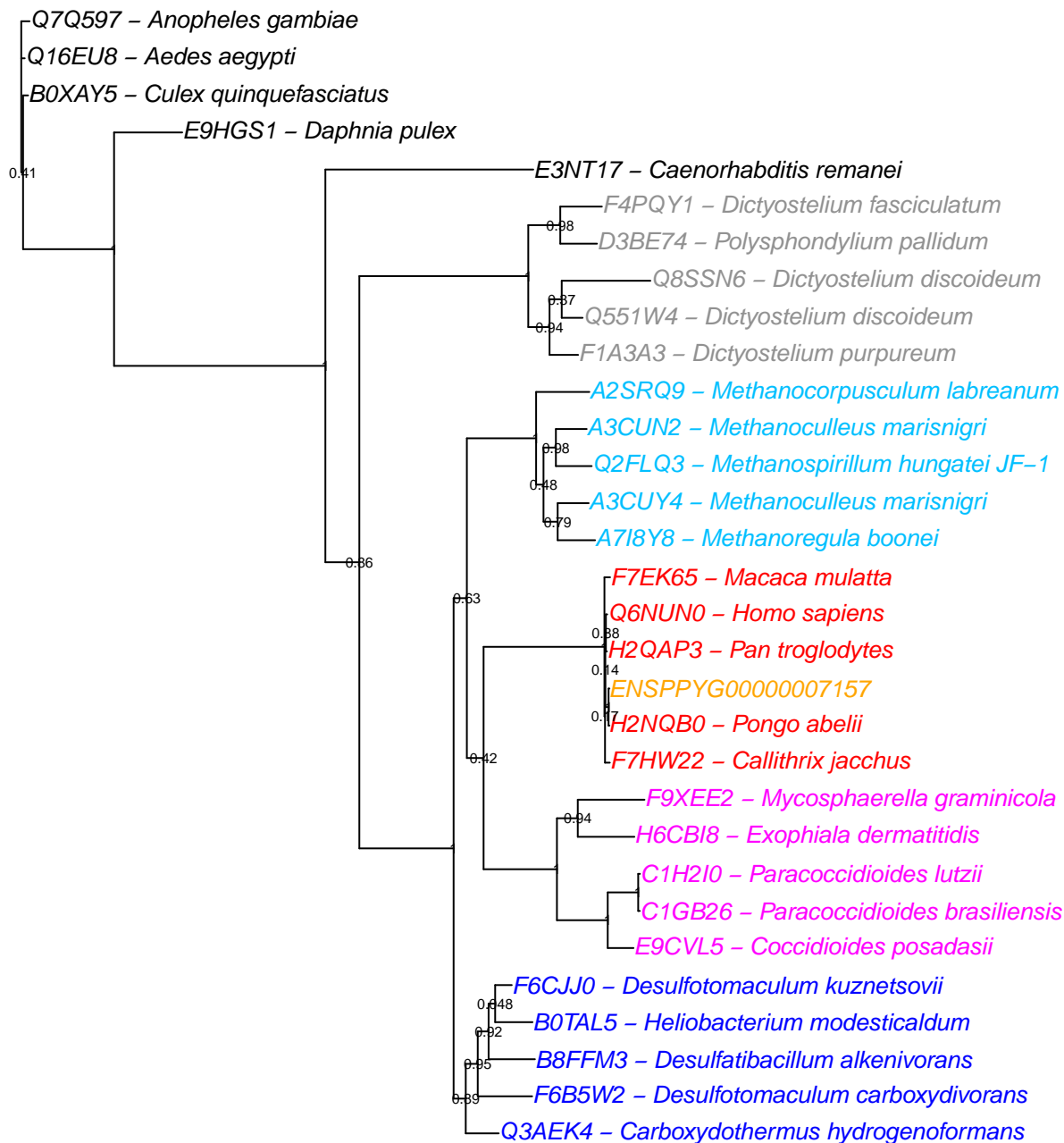
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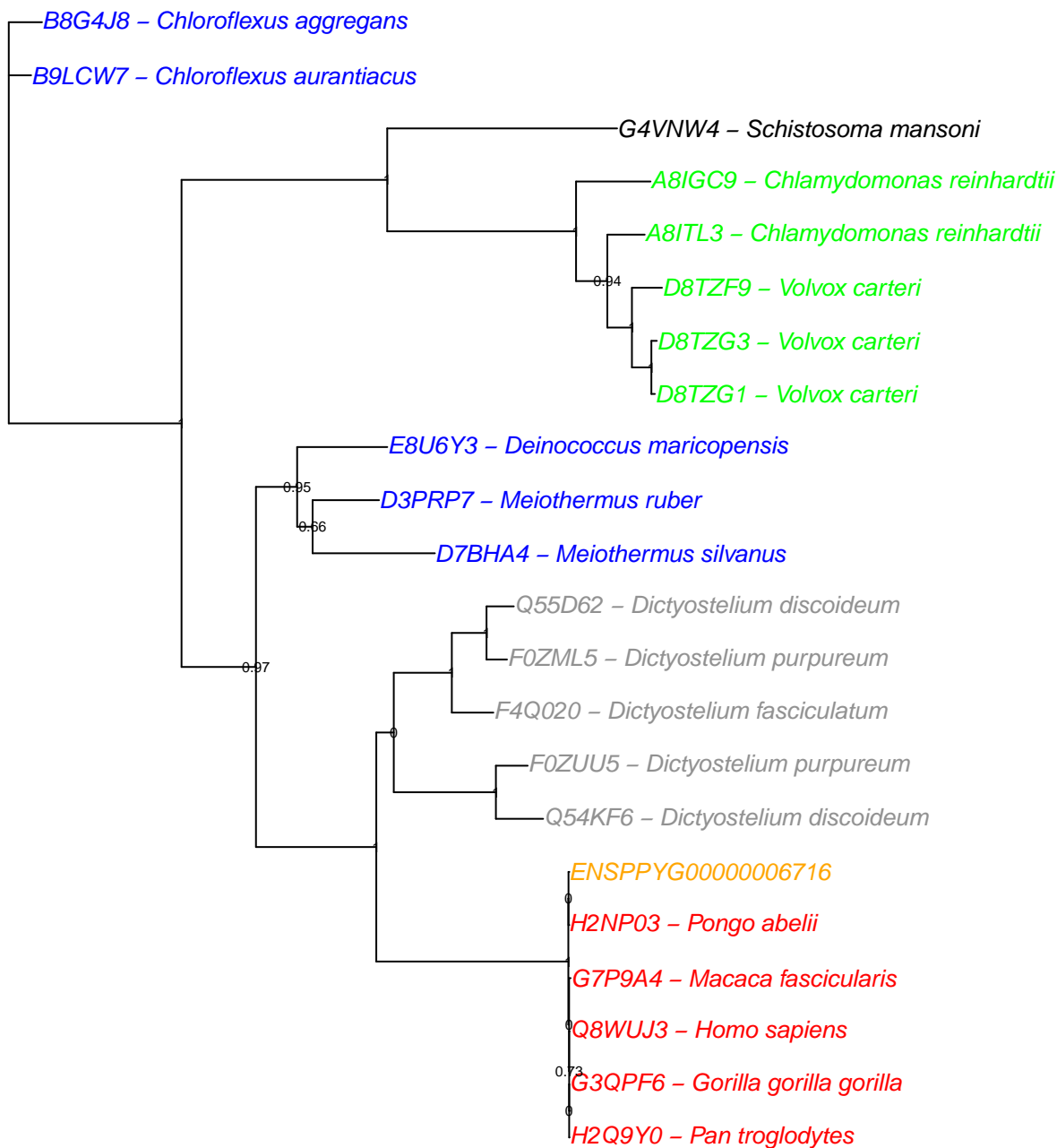
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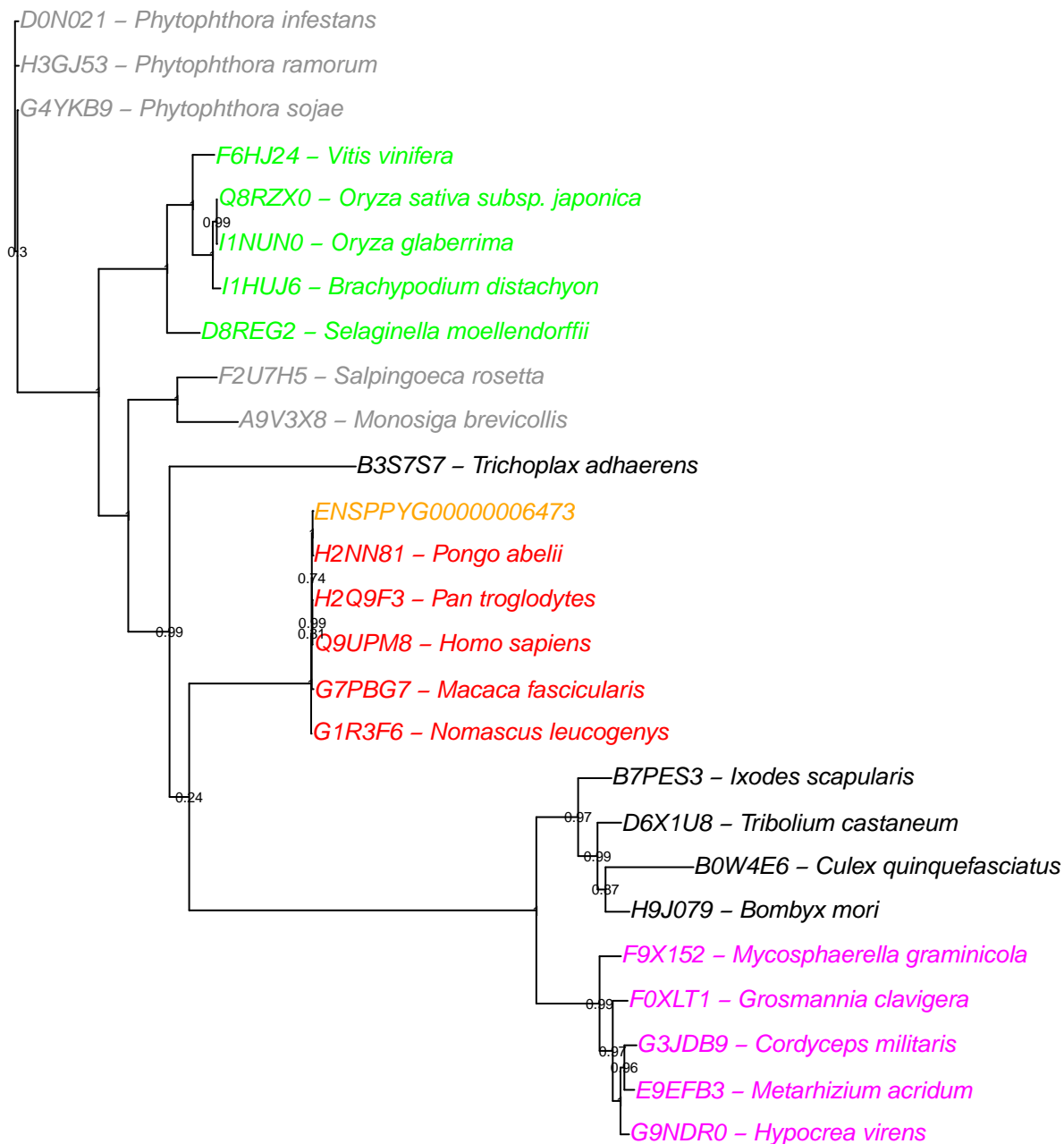


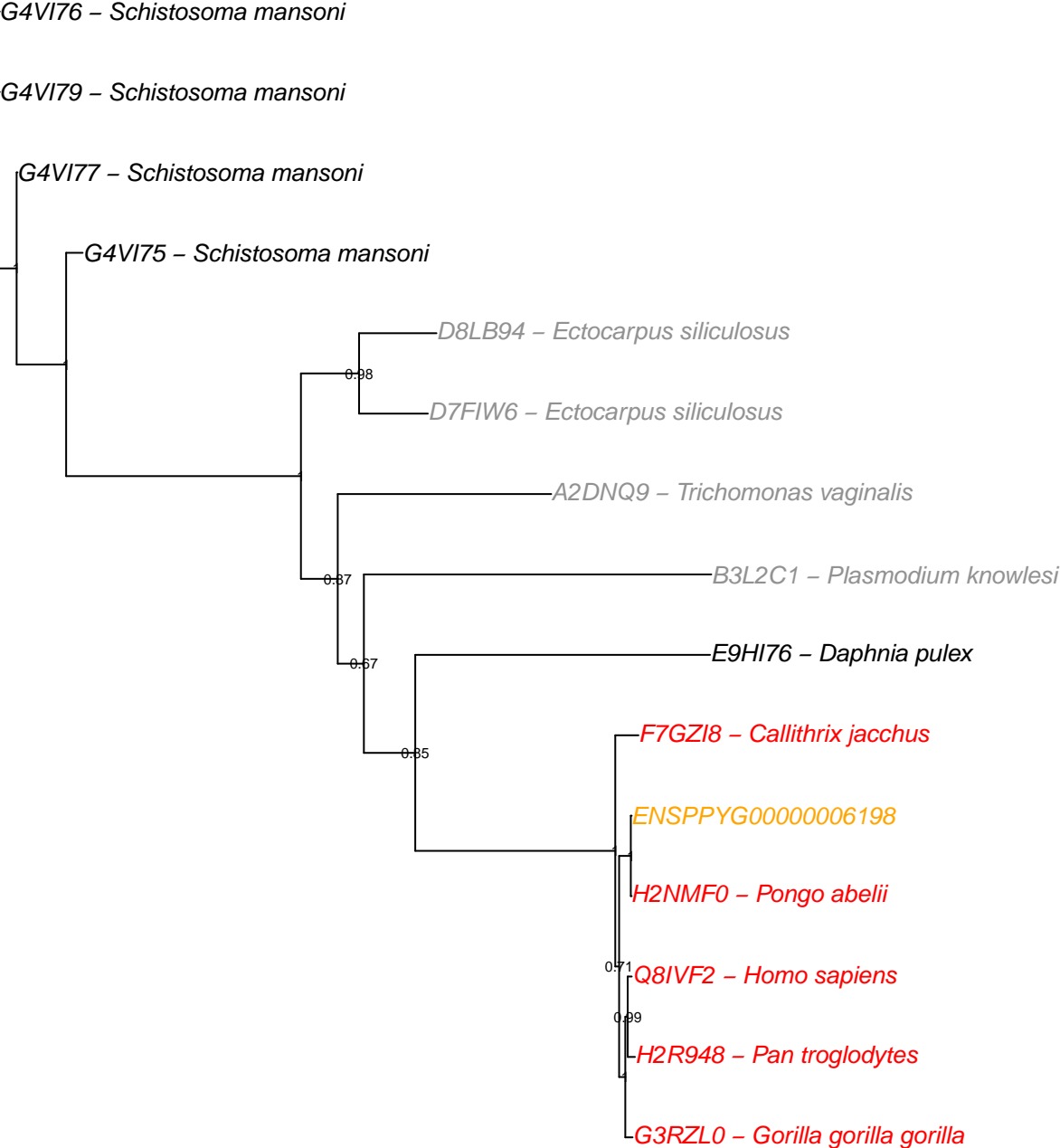


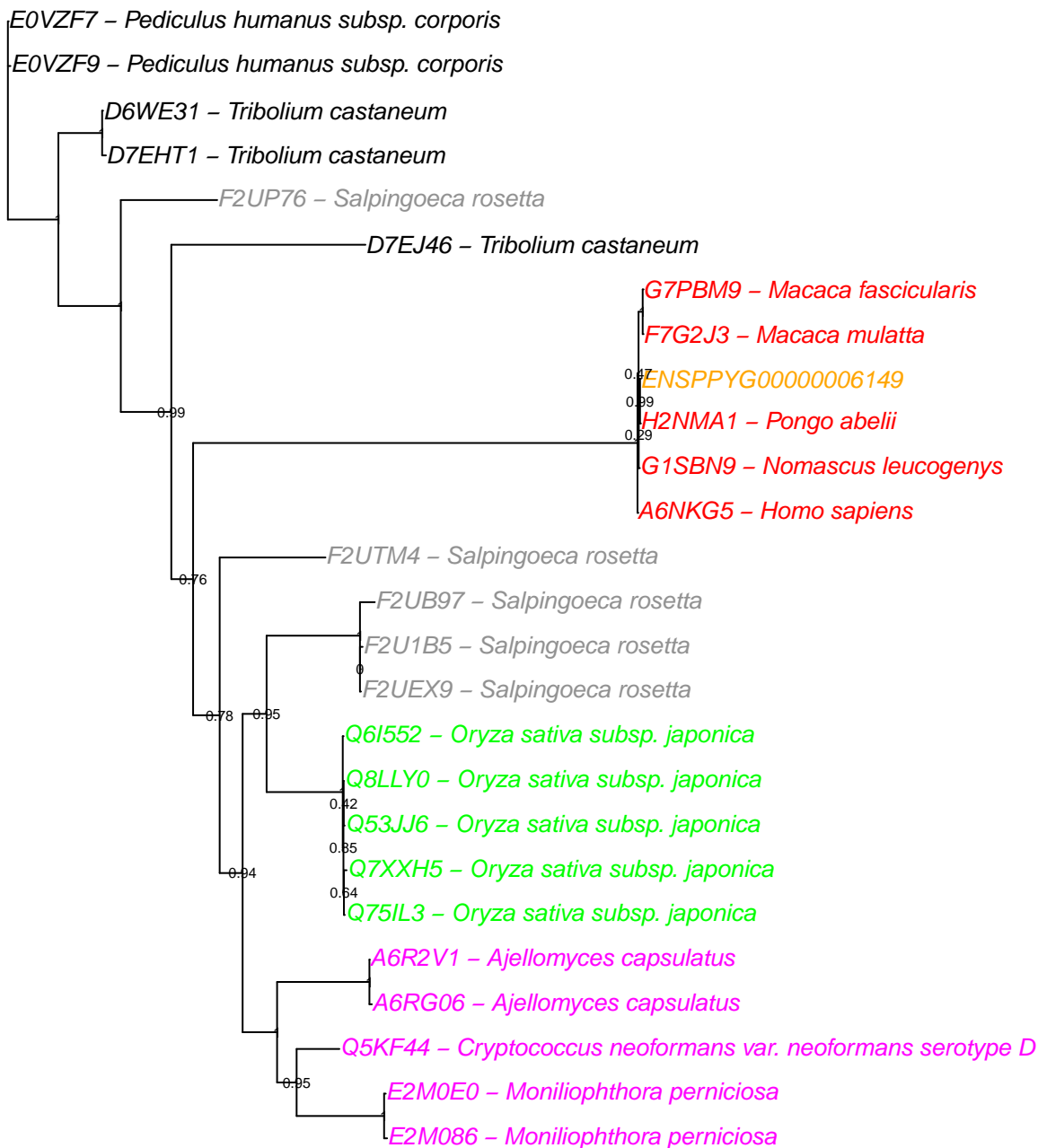


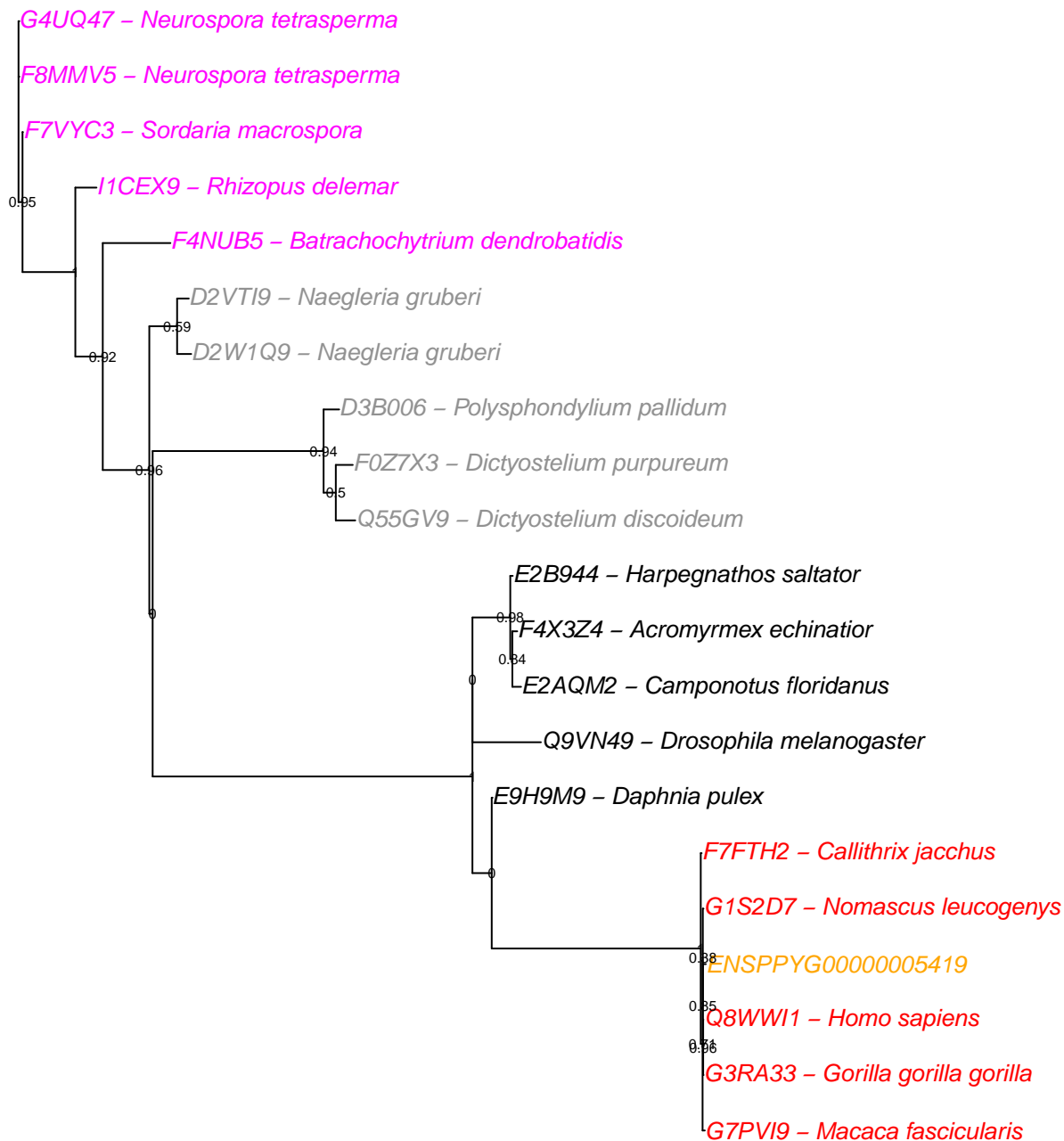


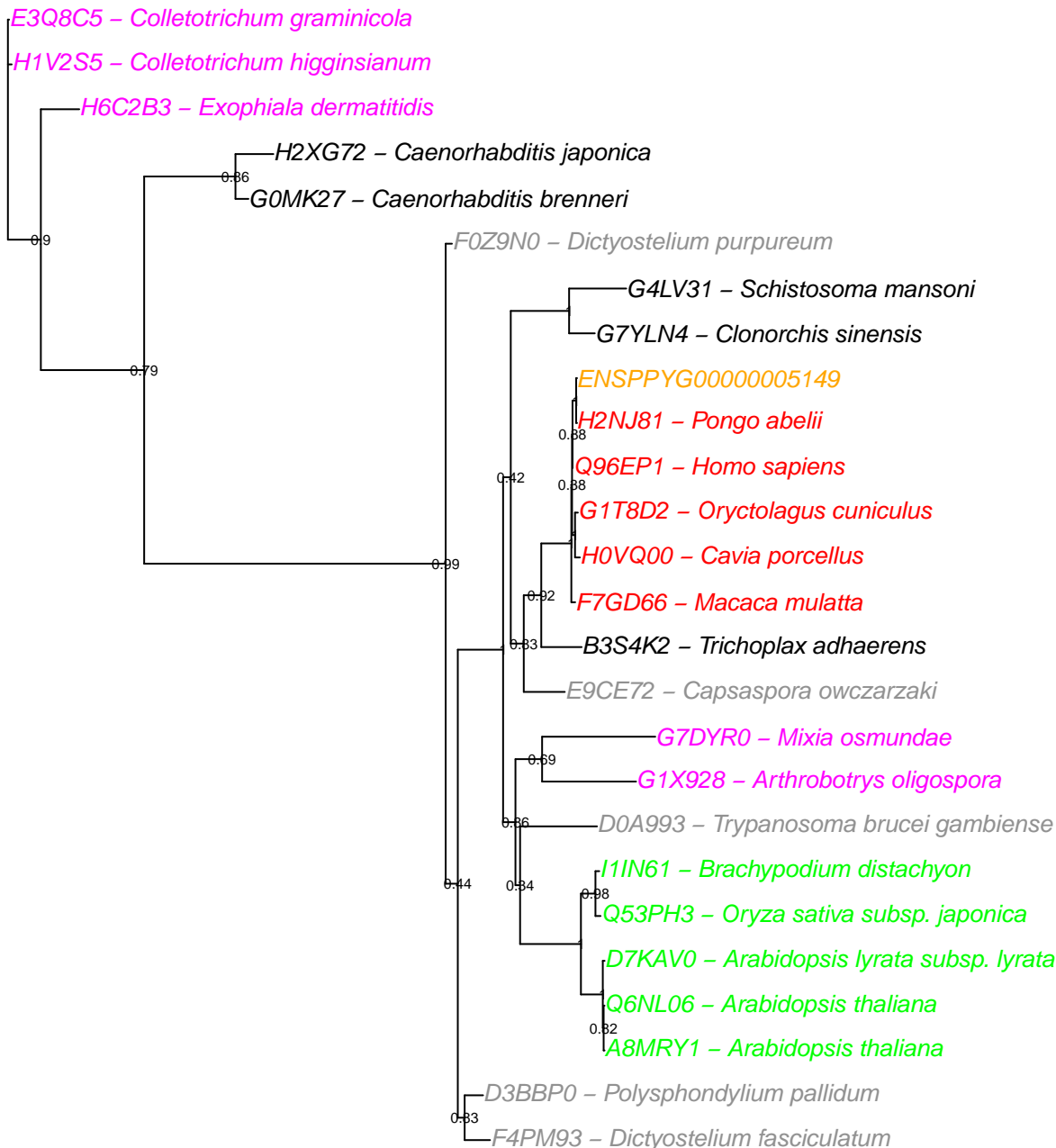


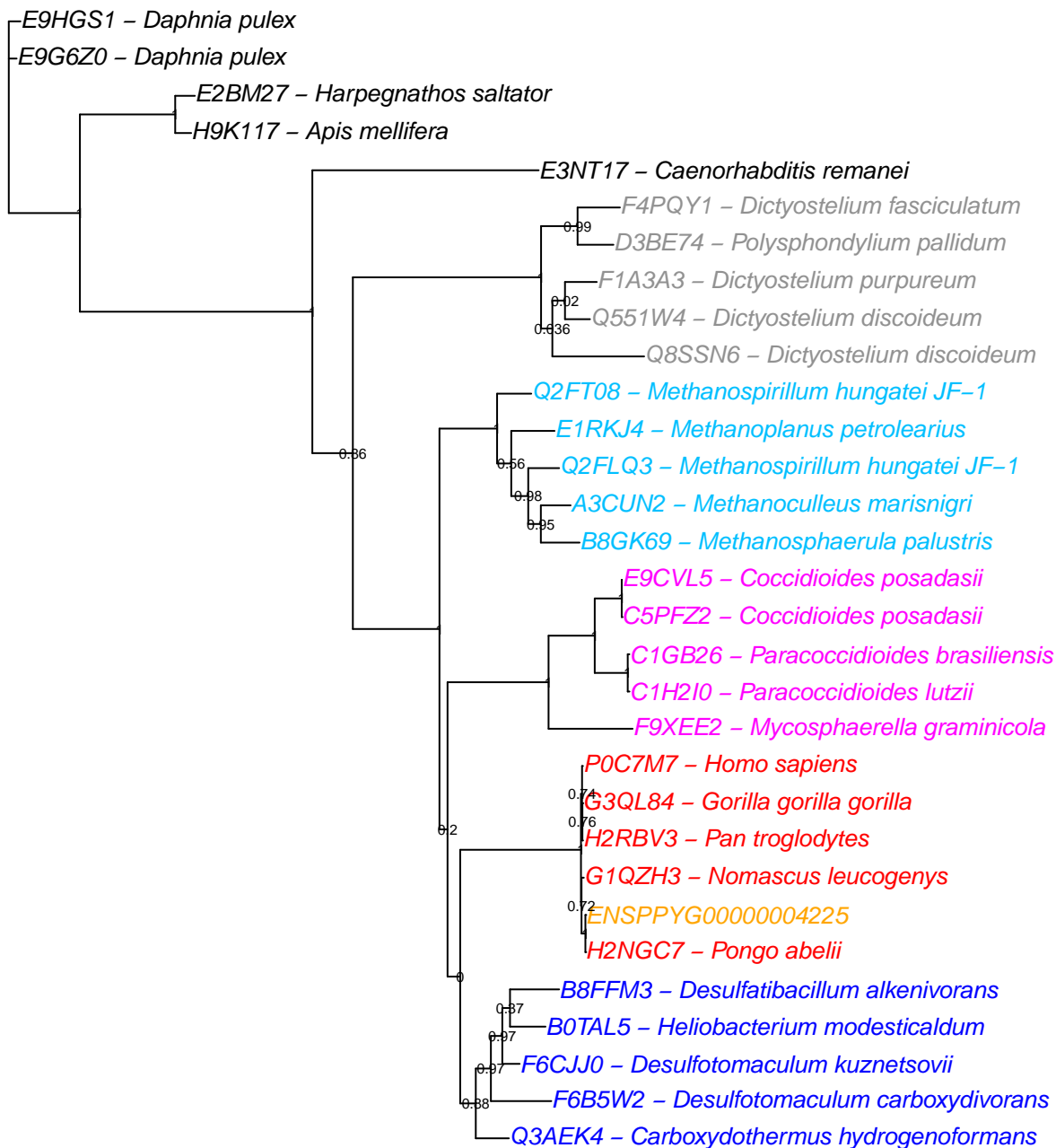








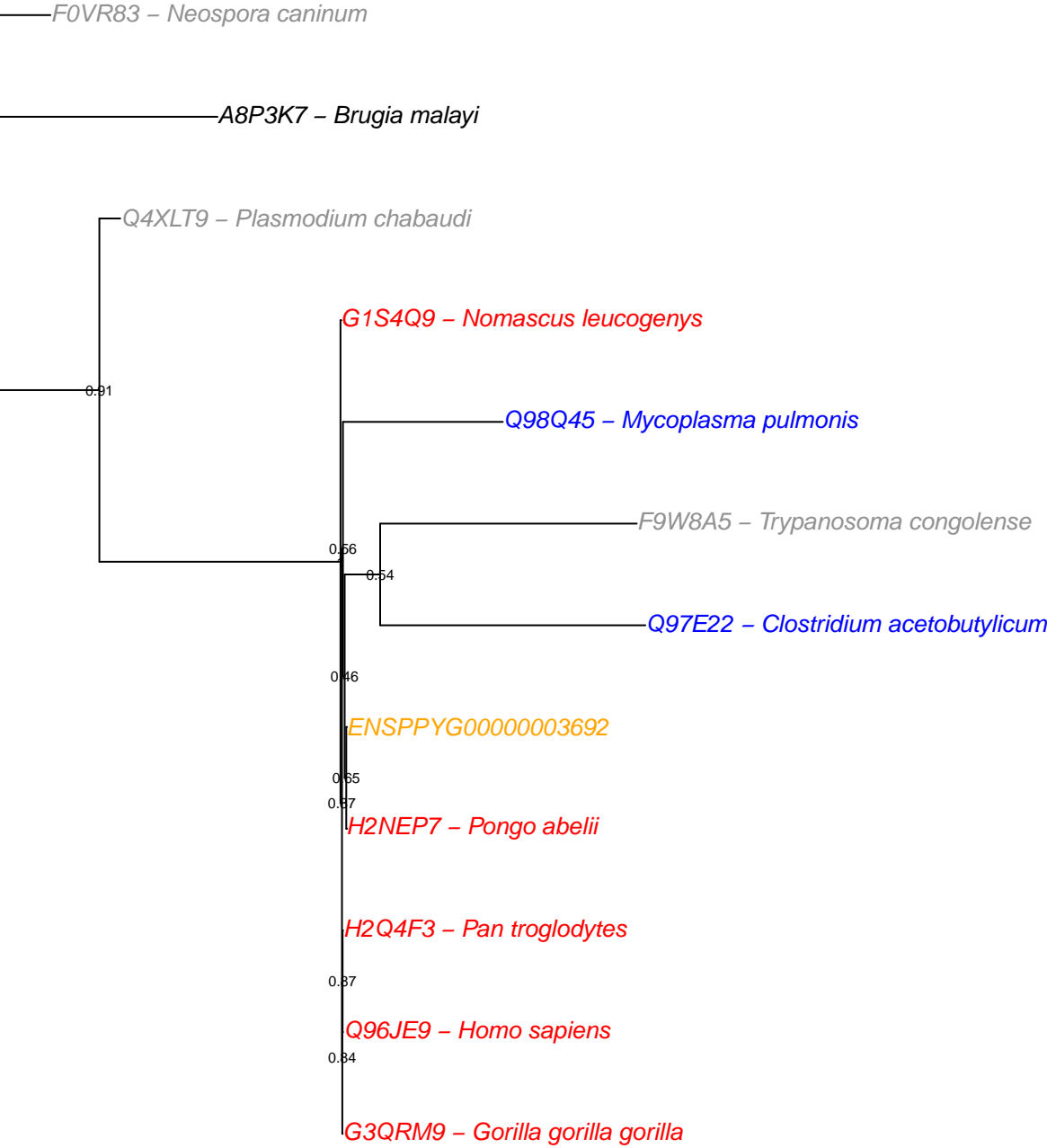




C5M1Q2 – *Perkinsus marinus*

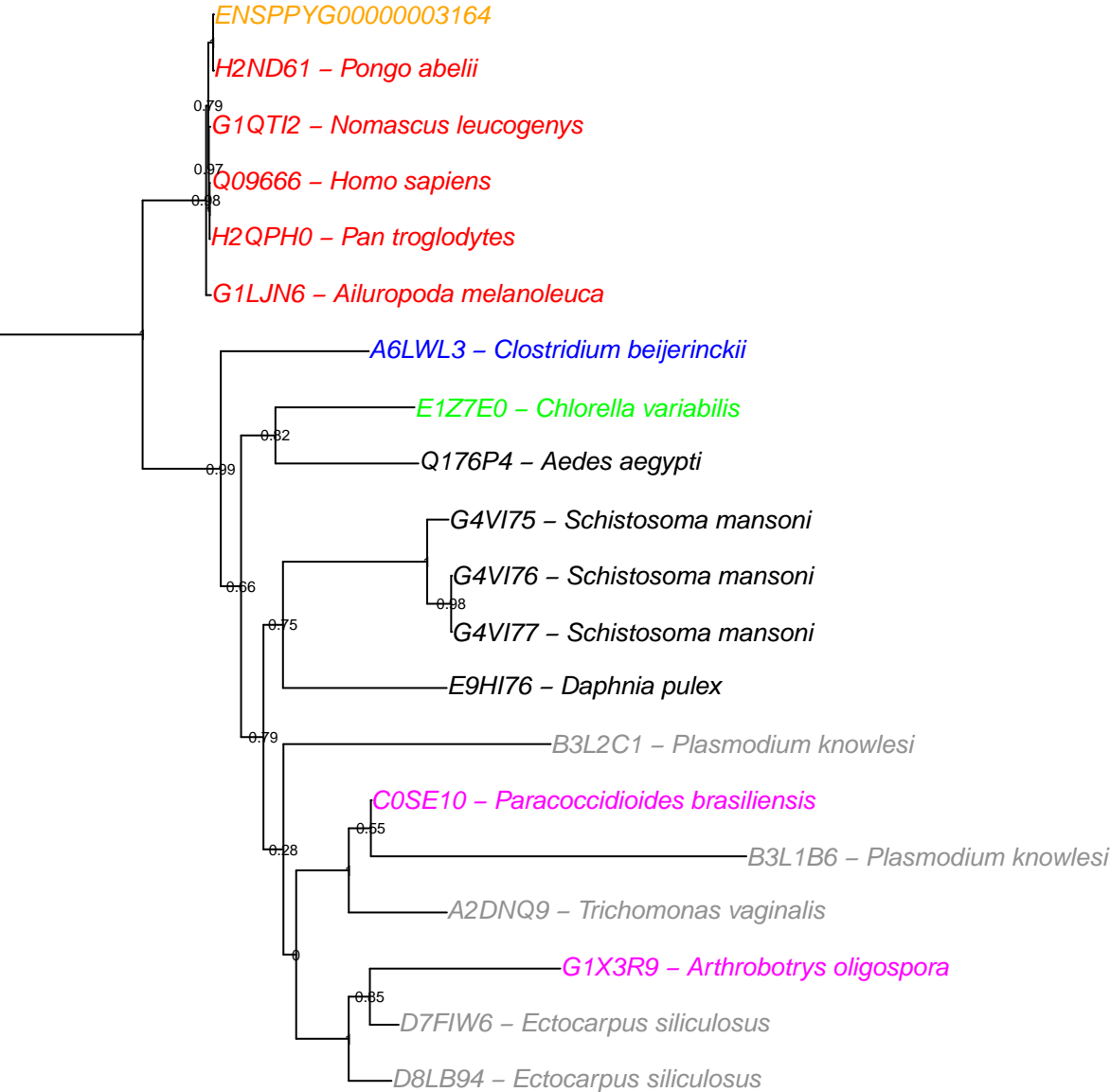
C5LL96 – *Perkinsus marinus*

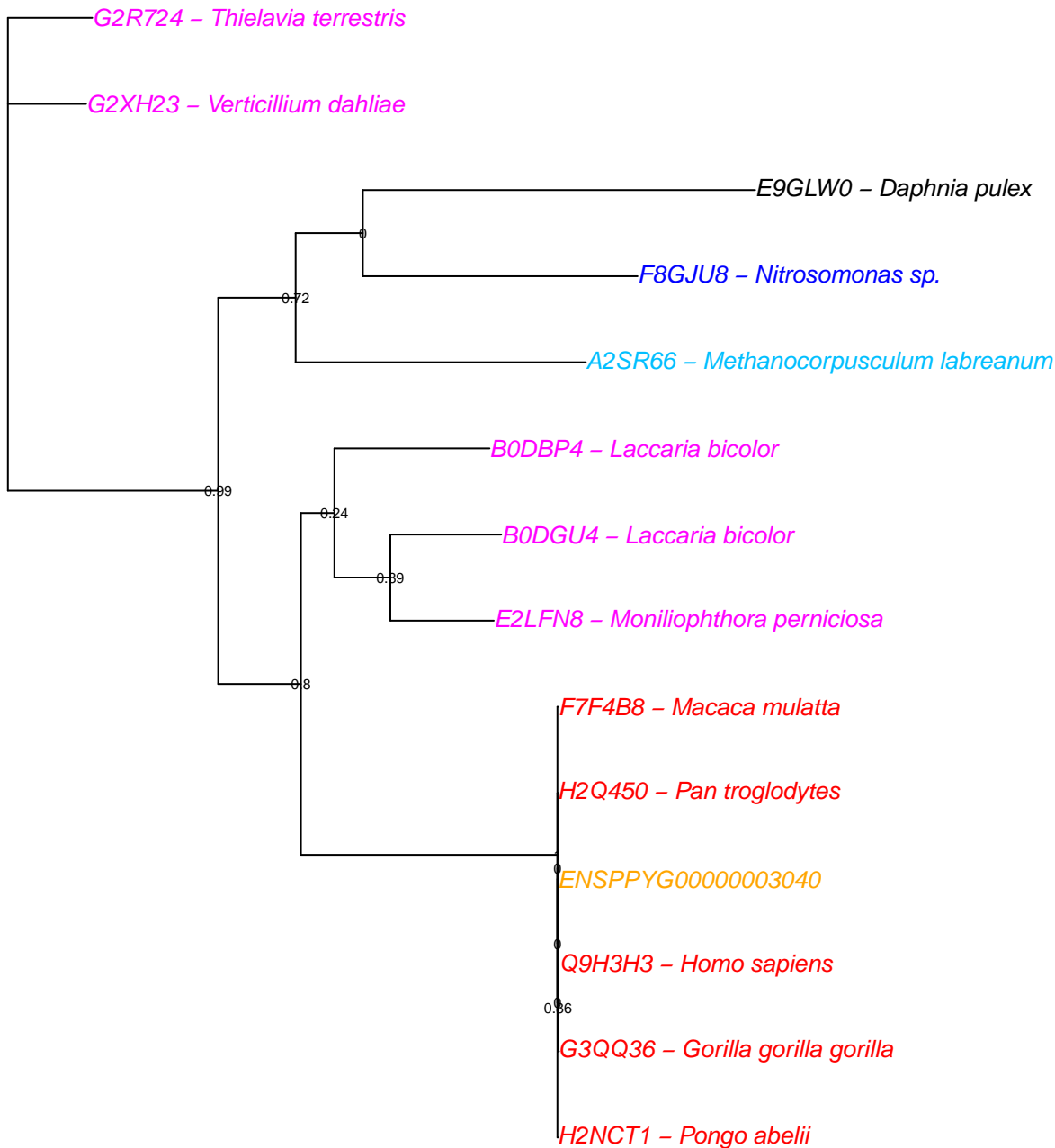


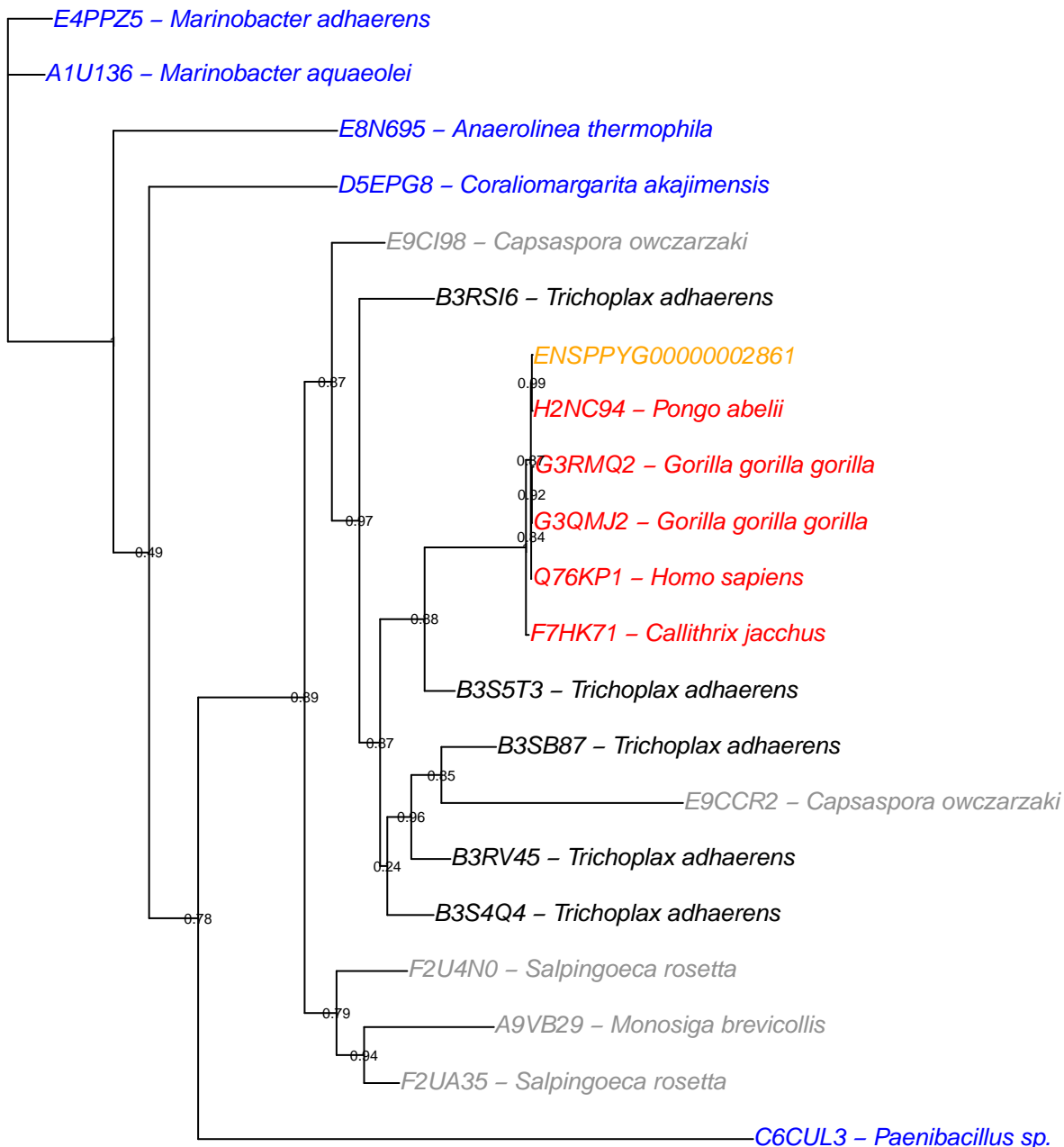


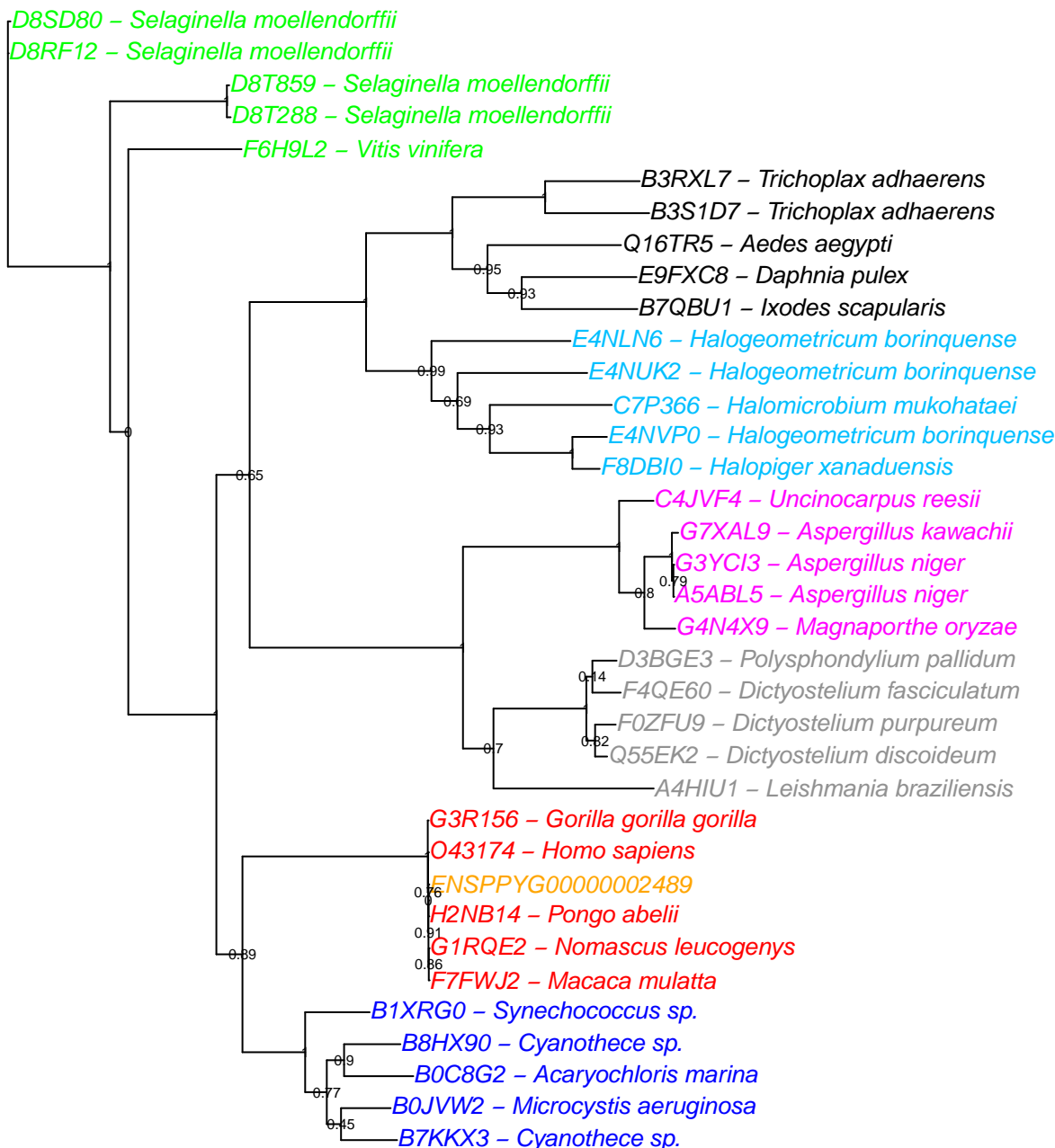
A5VKZ1 – *Lactobacillus reuteri*

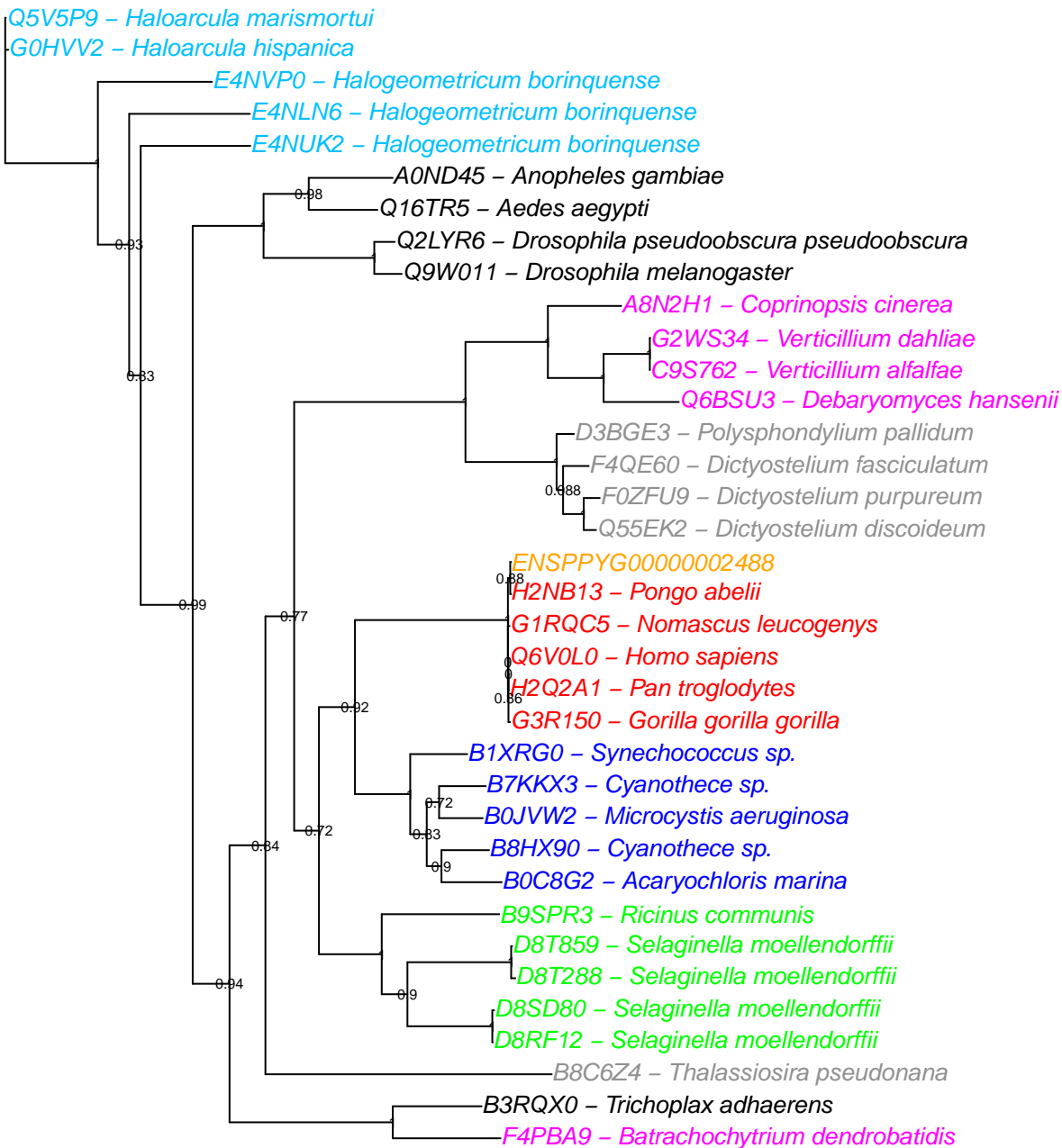
B2G8C6 – *Lactobacillus reuteri*



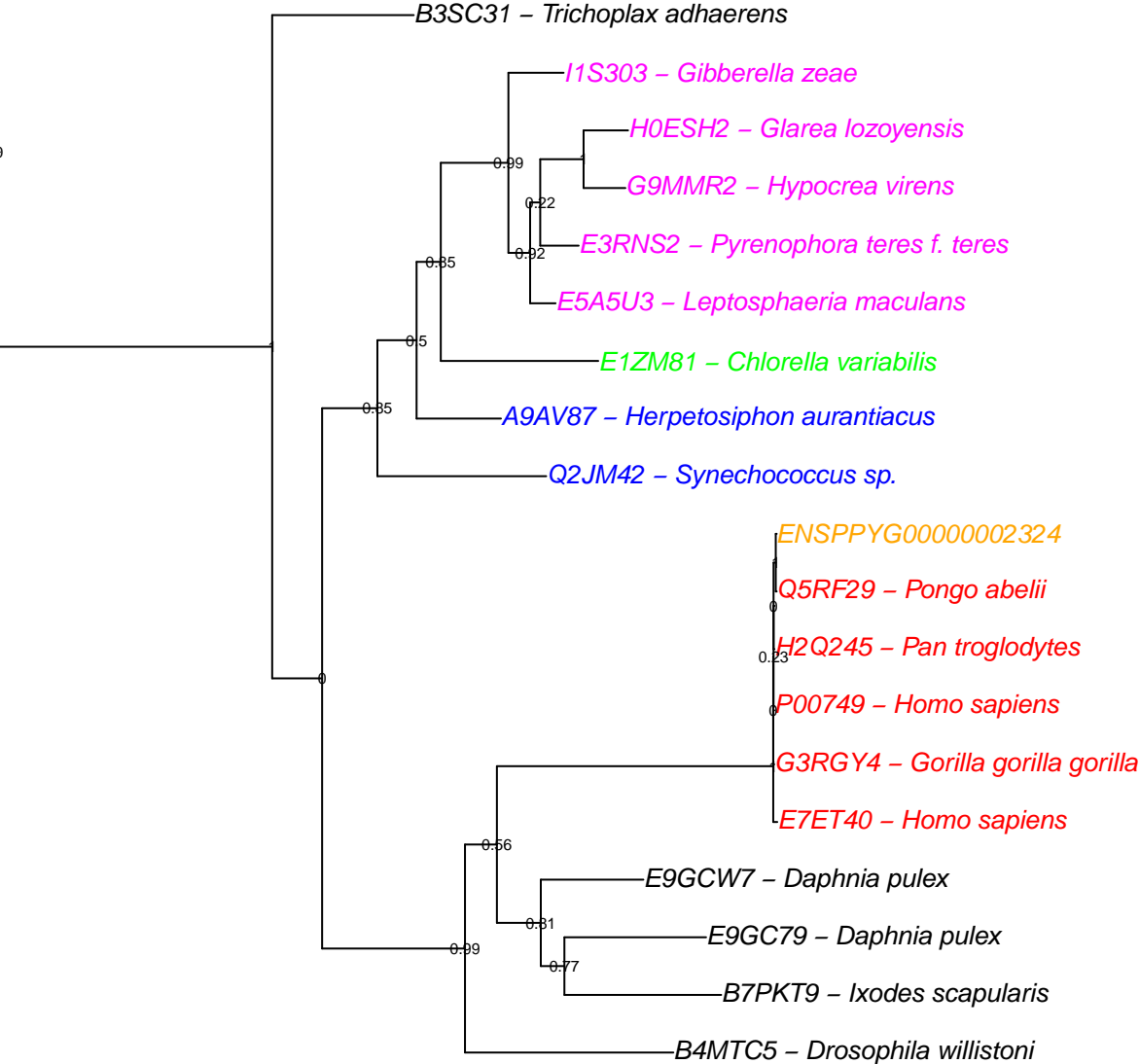


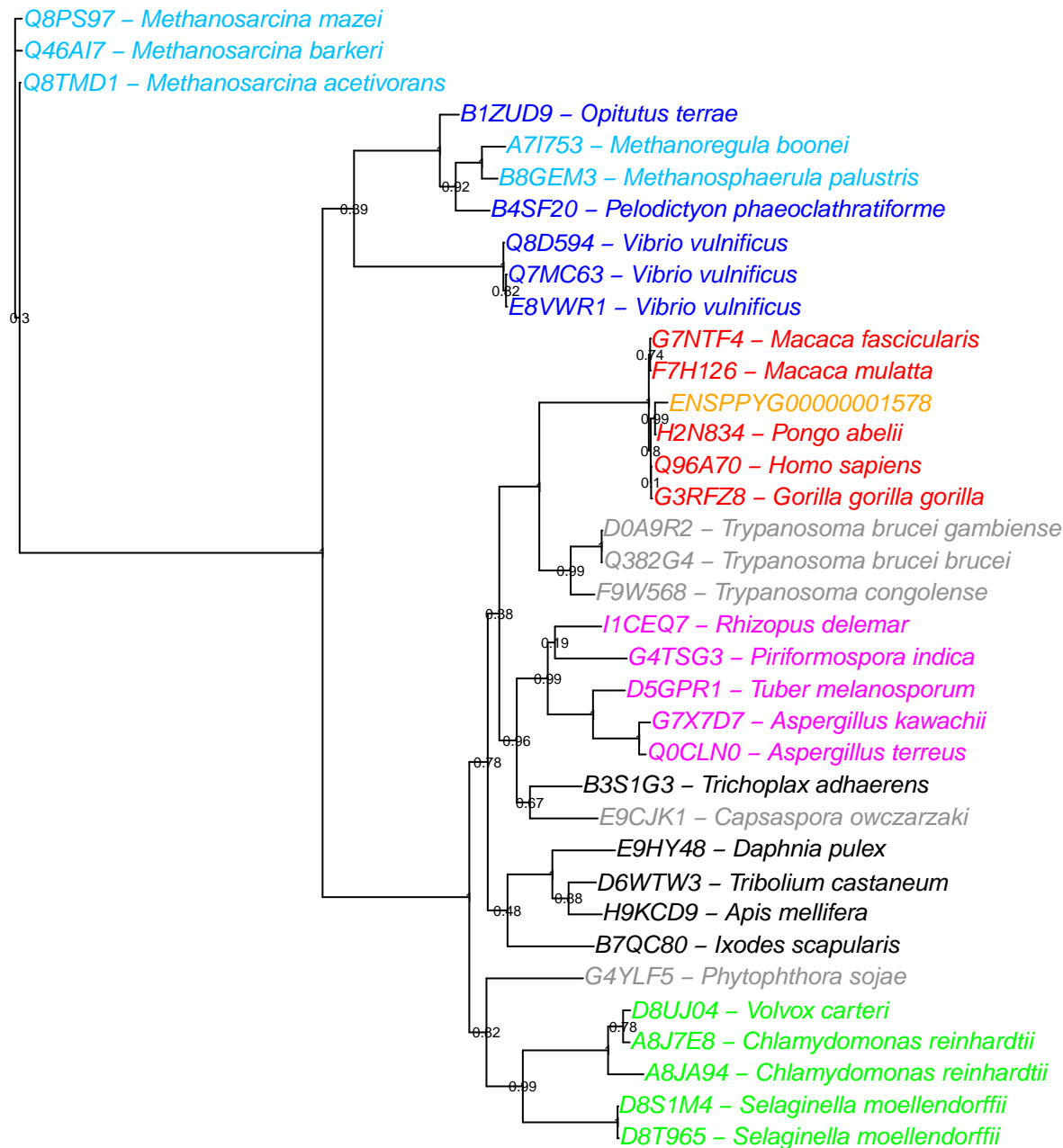


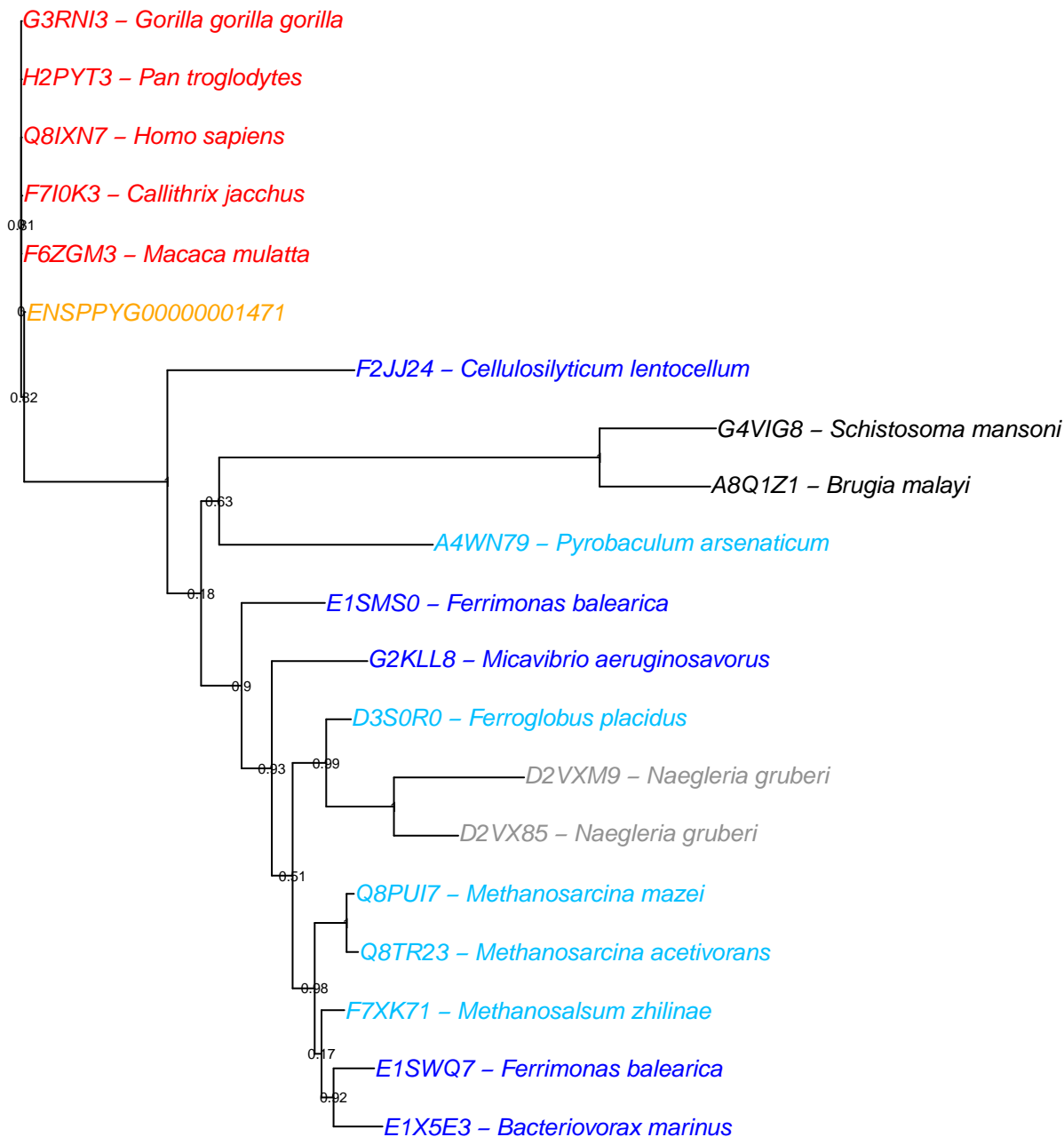


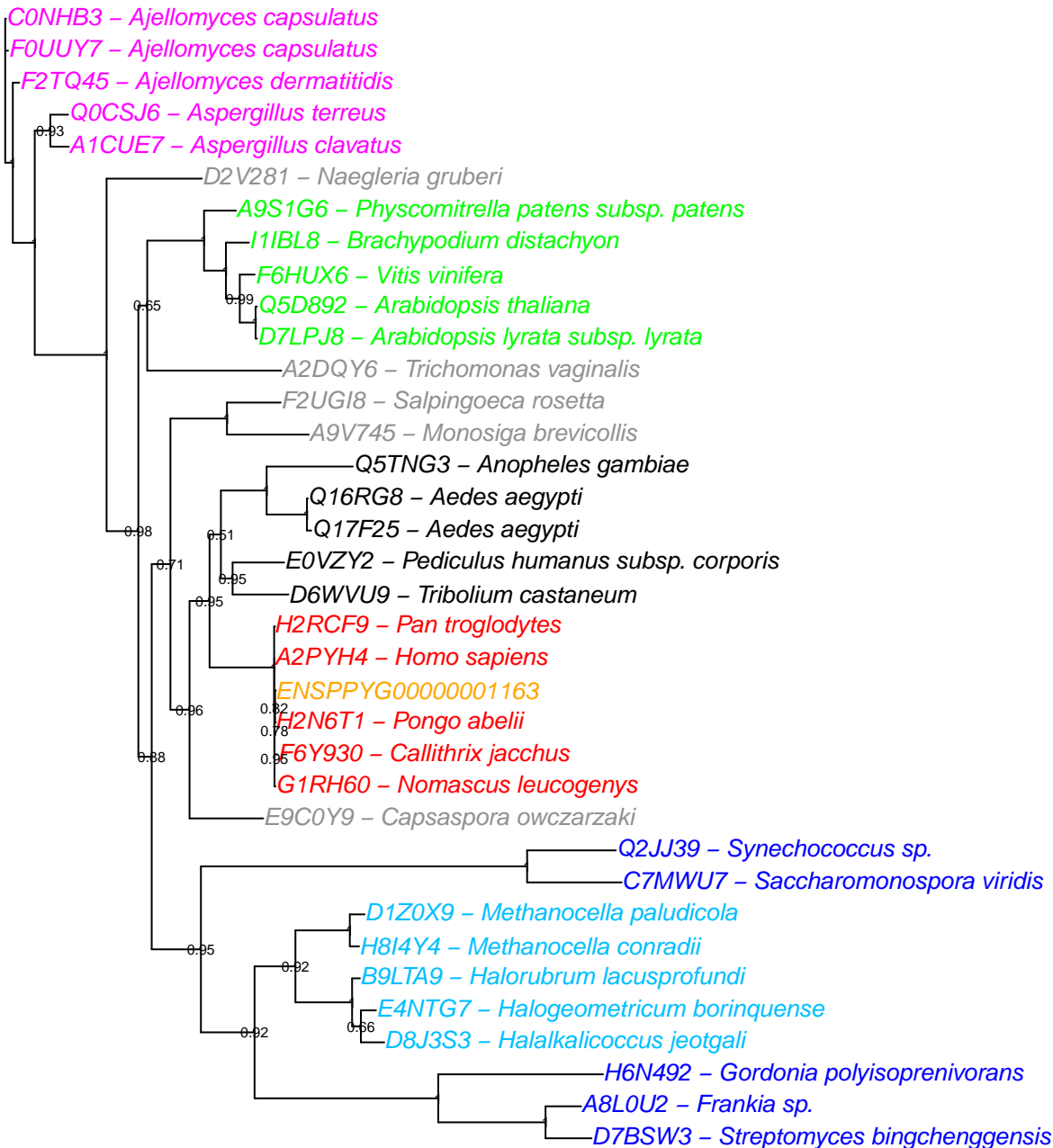


Q8DA23 – *Vibrio vulnificus*
Q7MK56 – *Vibrio vulnificus*
E8VQK2 – *Vibrio vulnificus*









E4NXN9 – *Bifidobacterium bifidum*

E3EMY9 – *Bifidobacterium bifidum*

G0LBE5 – *Zobellia galactanivorans*
F0RAV0 – *Cellulophaga lytica*
A5FKH2 – *Flavobacterium johnsoniae*

ENSPPYG00000000406
H2N4C9 – *Pongo abelii*
F7FI22 – *Macaca mulatta*
F7FI27 – *Macaca mulatta*
F6SEI3 – *Callithrix jacchus*
F7BAF1 – *Callithrix jacchus*

B3MF90 – *Drosophila ananassae*
B4P7G6 – *Drosophila yakuba*
E0VQL3 – *Pediculus humanus subsp. corporis*
E9G2F8 – *Daphnia pulex*
B3S8W6 – *Trichoplax adhaerens*
E9CCM8 – *Capsaspora owczarzaki*
A9UT59 – *Monosiga brevicollis*

F4P7S3 – *Batrachochytrium dendrobatidis*
I1CNE1 – *Rhizopus delemar*
D8Q297 – *Schizophyllum commune*
Q5KG83 – *Cryptococcus neoformans* var. *neoformans* serotype D
F5HED7 – *Cryptococcus neoformans* var. *neoformans* serotype D

A8IX41 – *Chlamydomonas reinhardtii*
E1Z2N1 – *Chlorella variabilis*
Q01CR1 – *Ostreococcus tauri*
A4RUB9 – *Ostreococcus lucimarinus*
C1E3K6 – *Micromonas* sp.

B7GA81 – *Phaeodactylum tricornutum*
G4Z142 – *Phytophthora sojae*
F0Z8Y9 – *Dictyostelium purpureum*