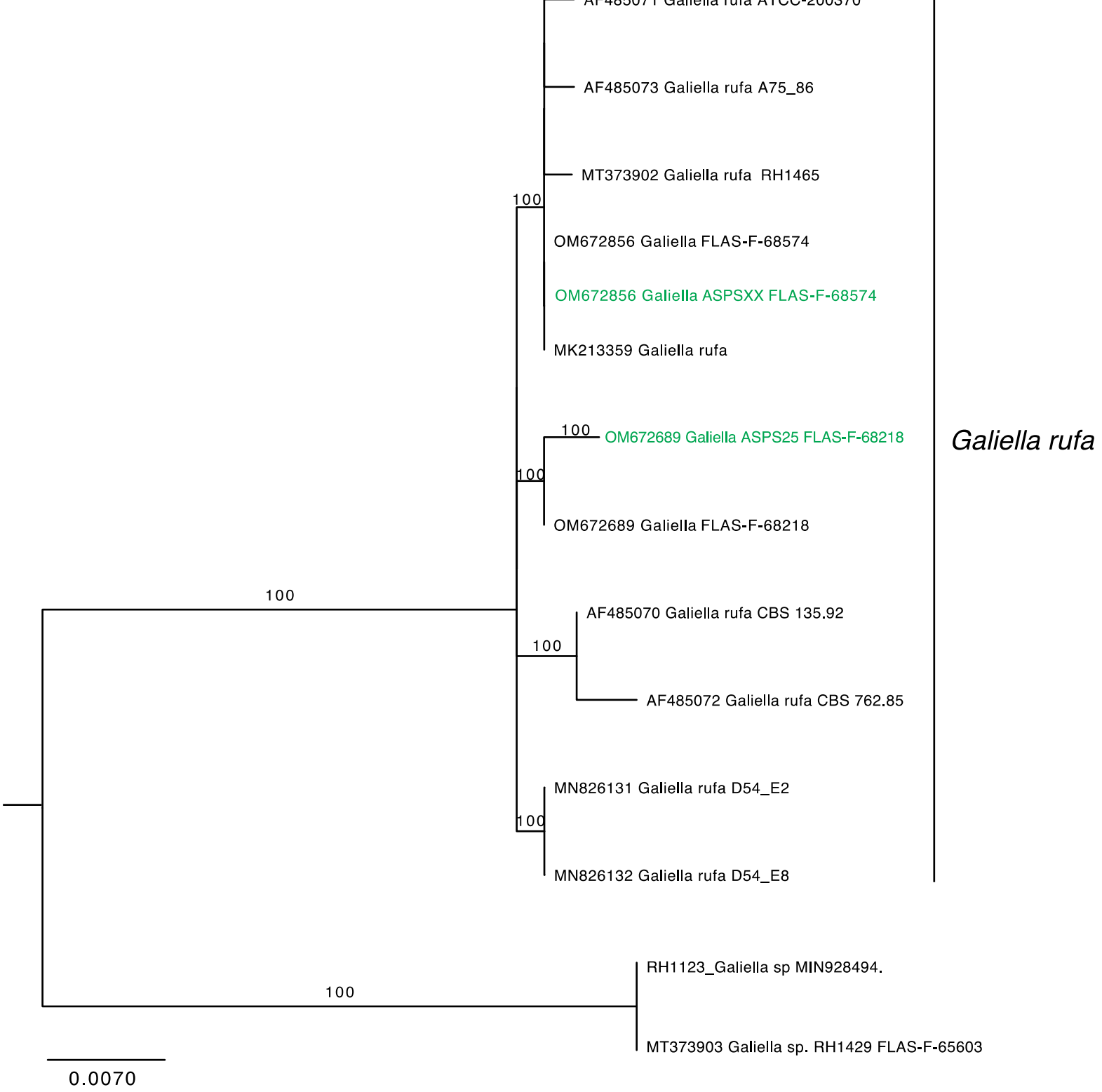
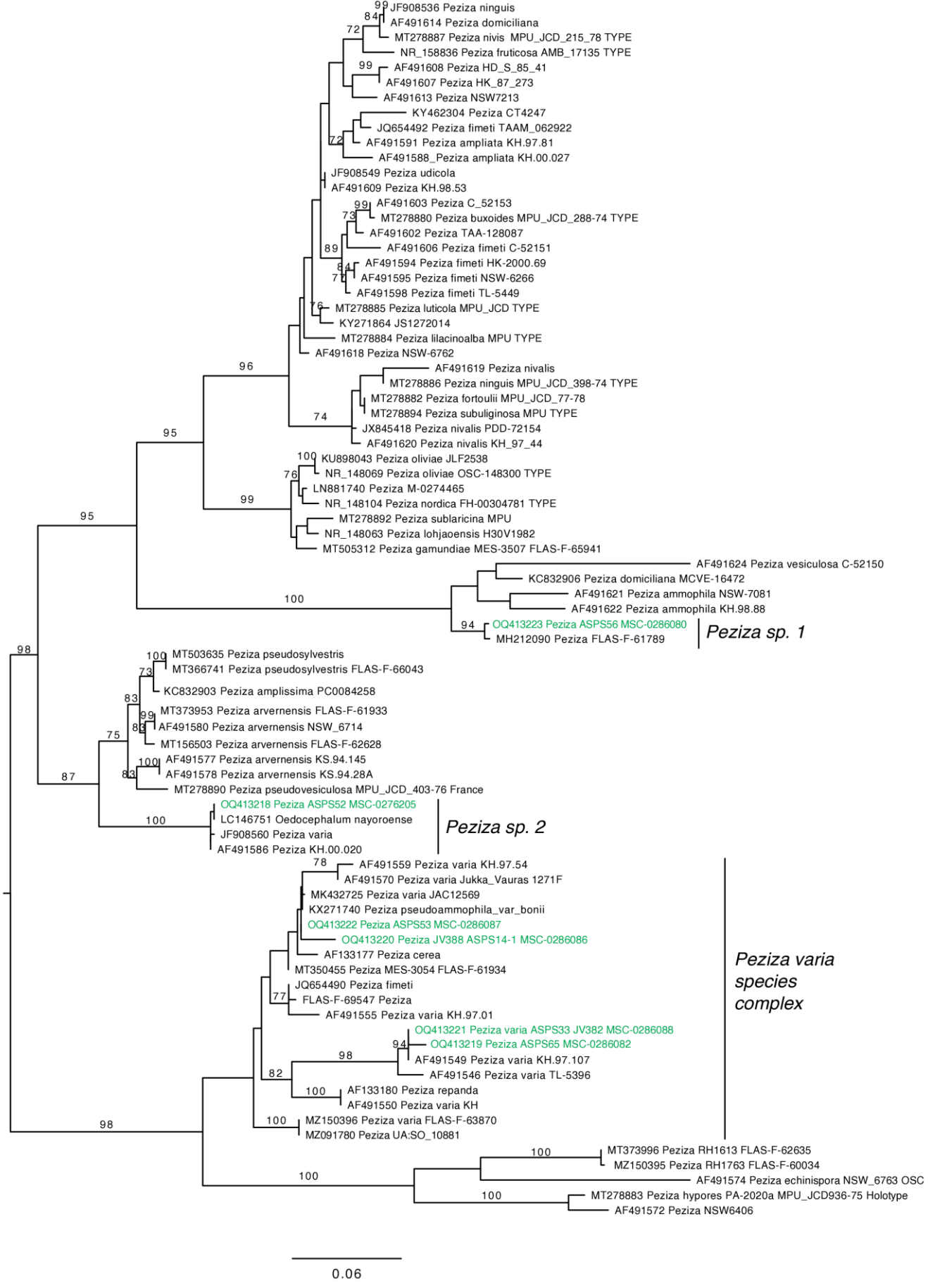
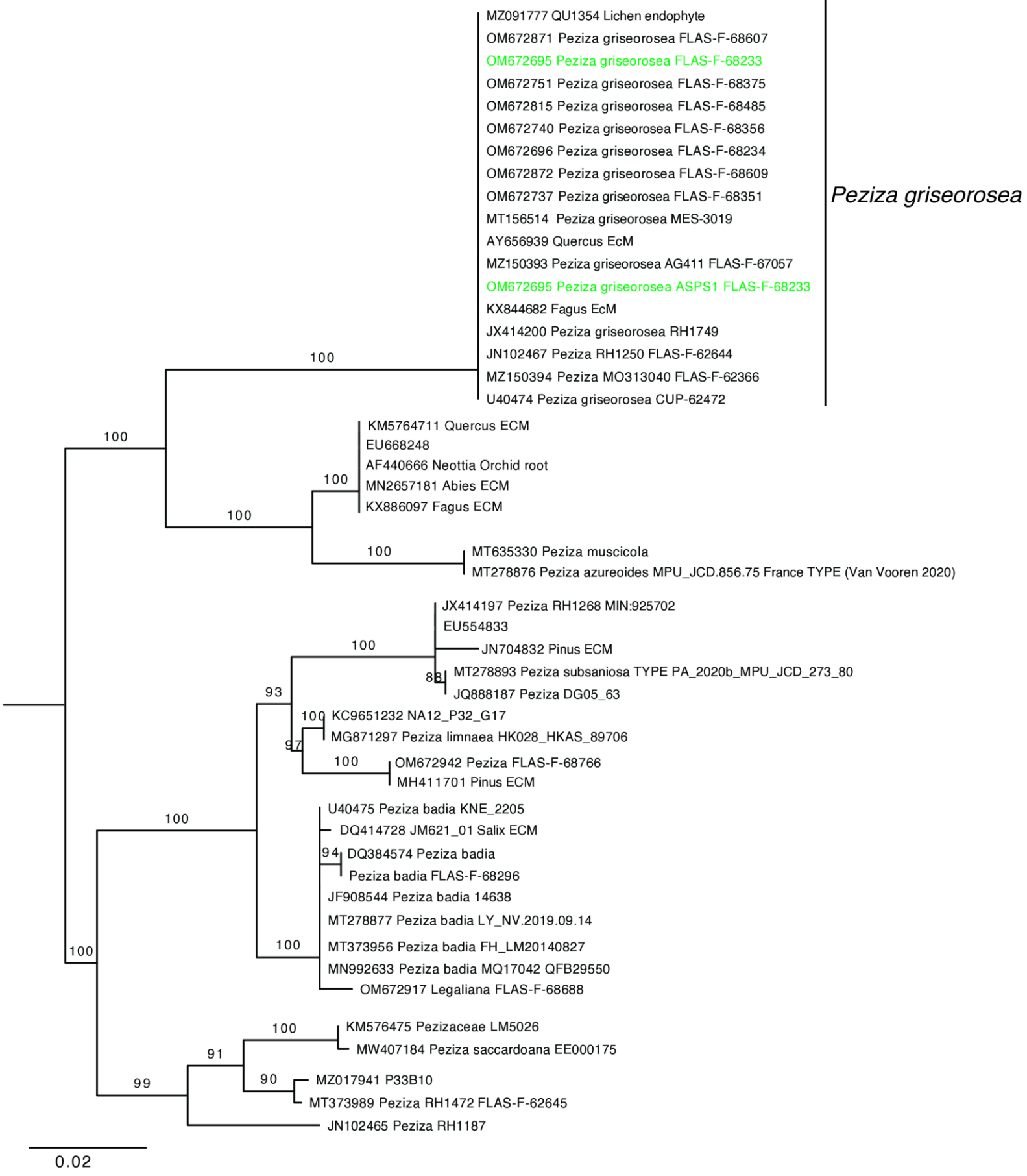


Supplementary Figure S1. Most likely RAxML phylogenetic tree showing placement of single-spore isolates among other *Galiella* isolates. Significant support is denoted by bootstrap values ≥70% at nodes. Green taxa represent isolates that germinated and grew in axenic culture for this study.

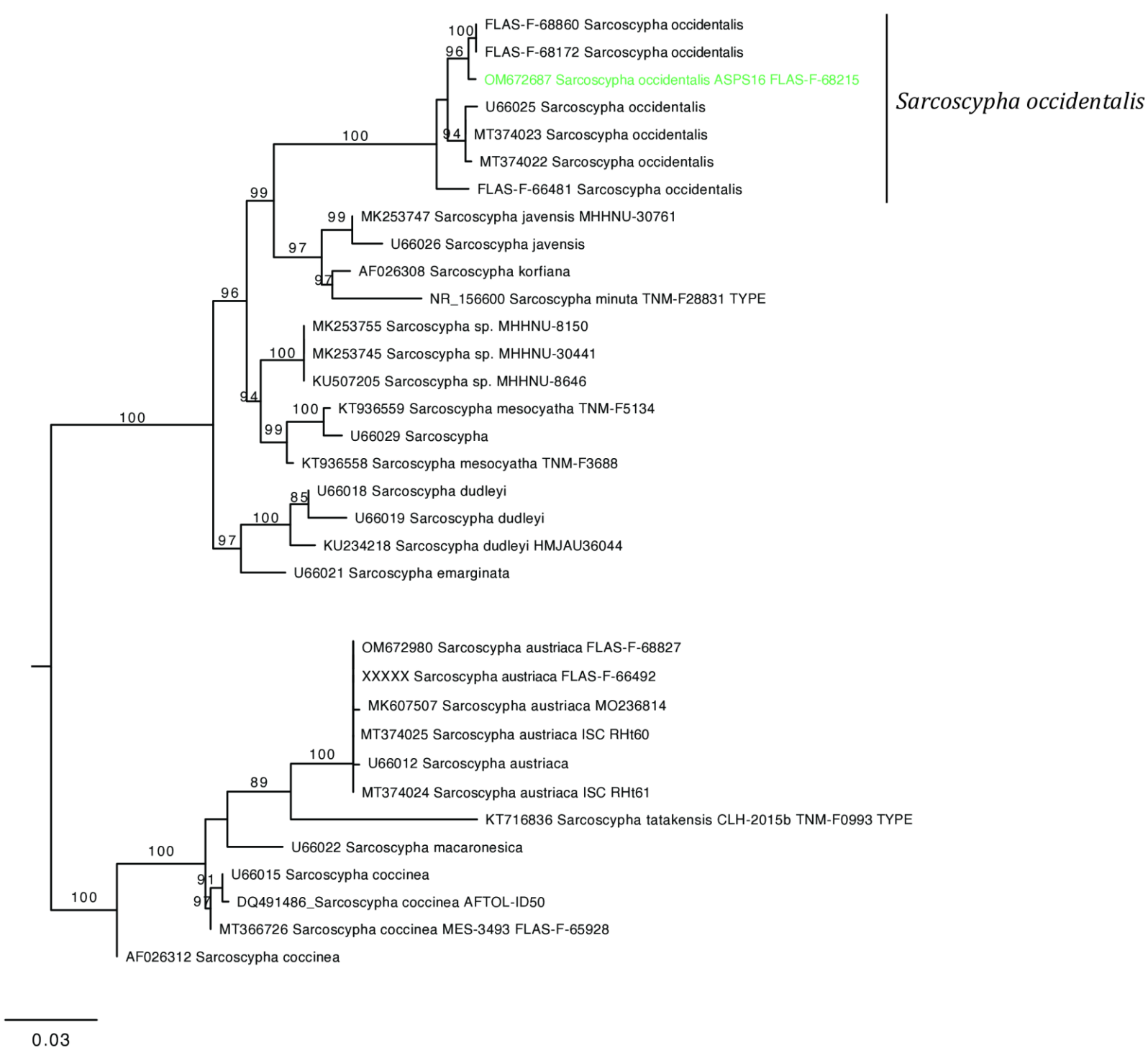


Supplementary Figure S2. Most likely RAxML phylogenetic tree showing placement of single-spore isolates among other *Peziza* isolates. Significant support is denoted by bootstrap values ≥70% at nodes. Green taxa represent isolates that germinated and grew in axenic culture for this study.

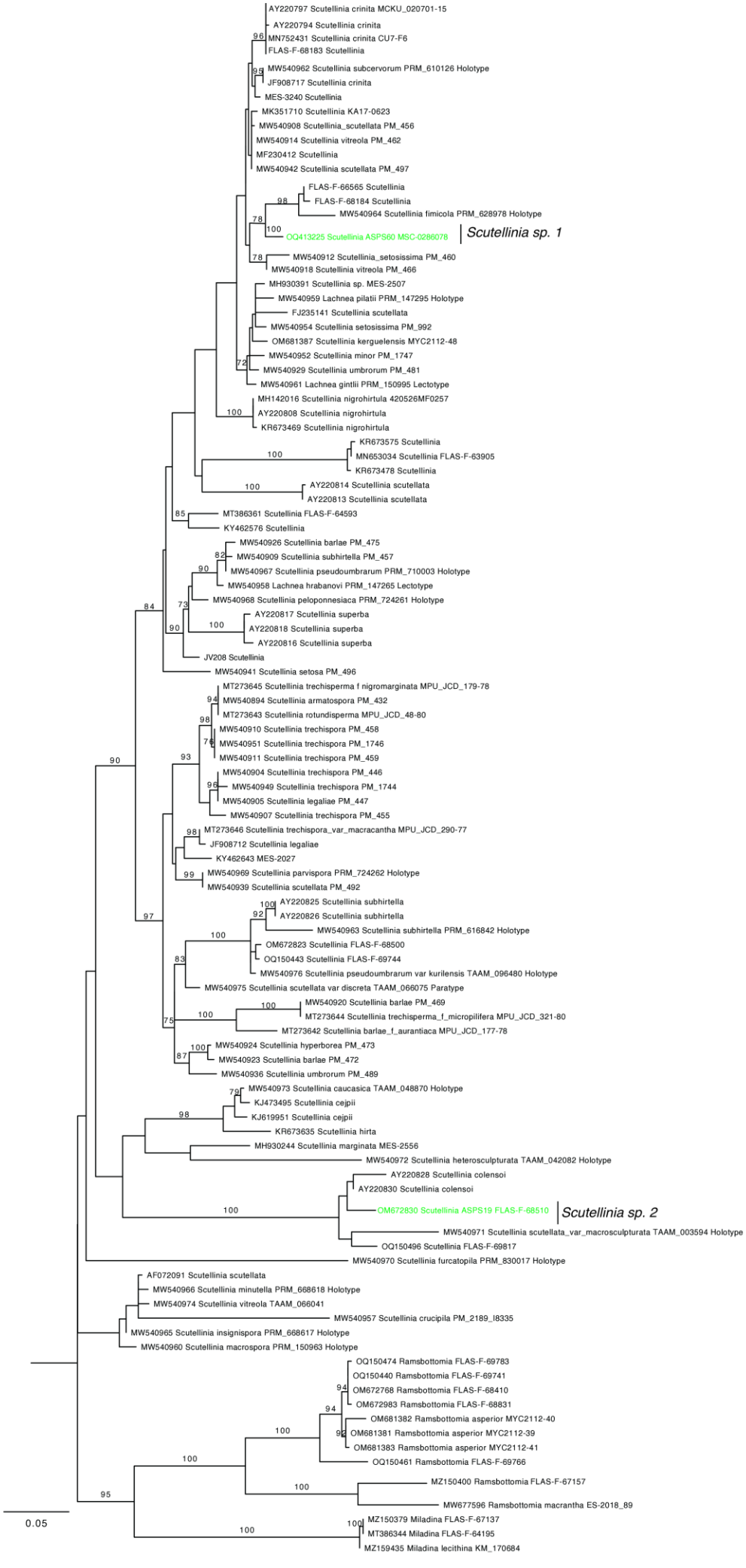


Supplementary Figure S3. Most likely RAxML phylogenetic tree showing placement of single-spore isolates among other *Peziza griseorosea* isolates. Significant support is denoted by bootstrap values ≥70% at nodes. Green taxa represent isolates that germinated and grew in axenic culture for this study.

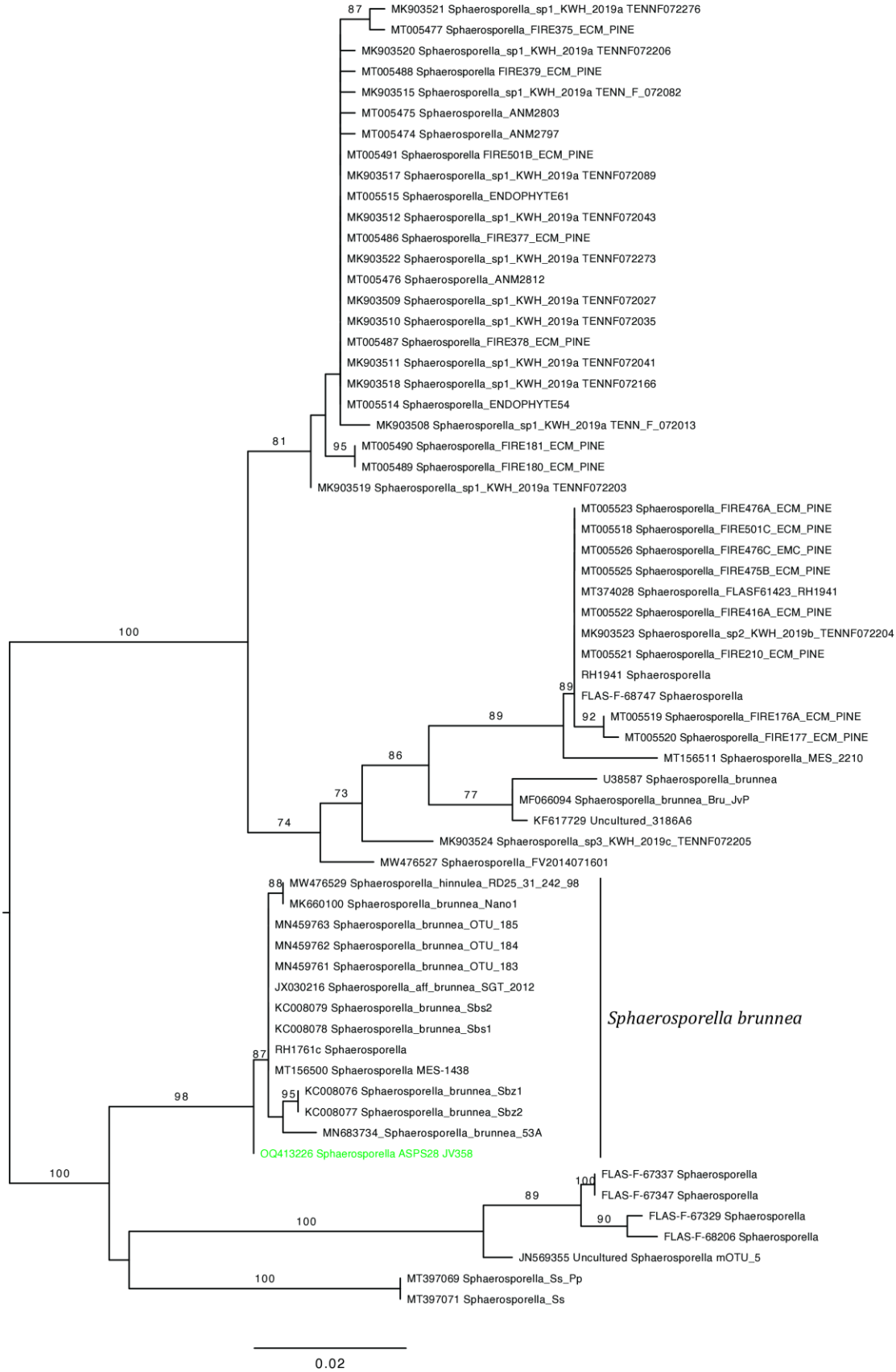
Supplementary Figure S4. Most likely RAxML phylogenetic tree showing placement of single-spore isolates among other *Phylloscypha* isolates. Significant support is denoted by bootstrap values ≥70% at nodes. Green taxa represent isolates that germinated and grew in axenic culture for this study.



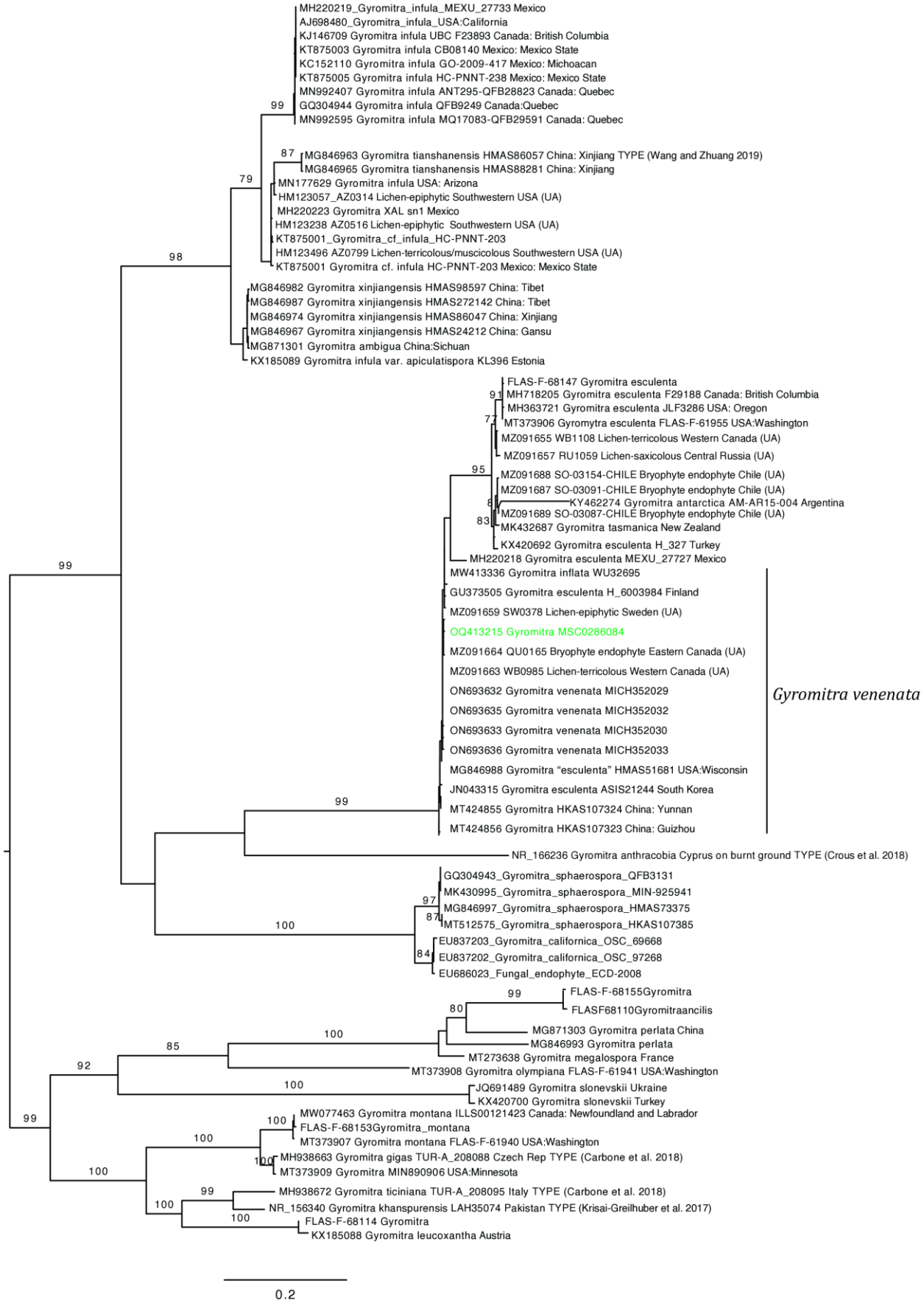
Supplementary Figure S5. Most likely RAxML phylogenetic tree showing placement of single-spore isolates among other *Sarcoscypha* isolates. Significant support is denoted by bootstrap values ≥70% at nodes. Green taxa represent isolates that germinated and grew in axenic culture for this study.



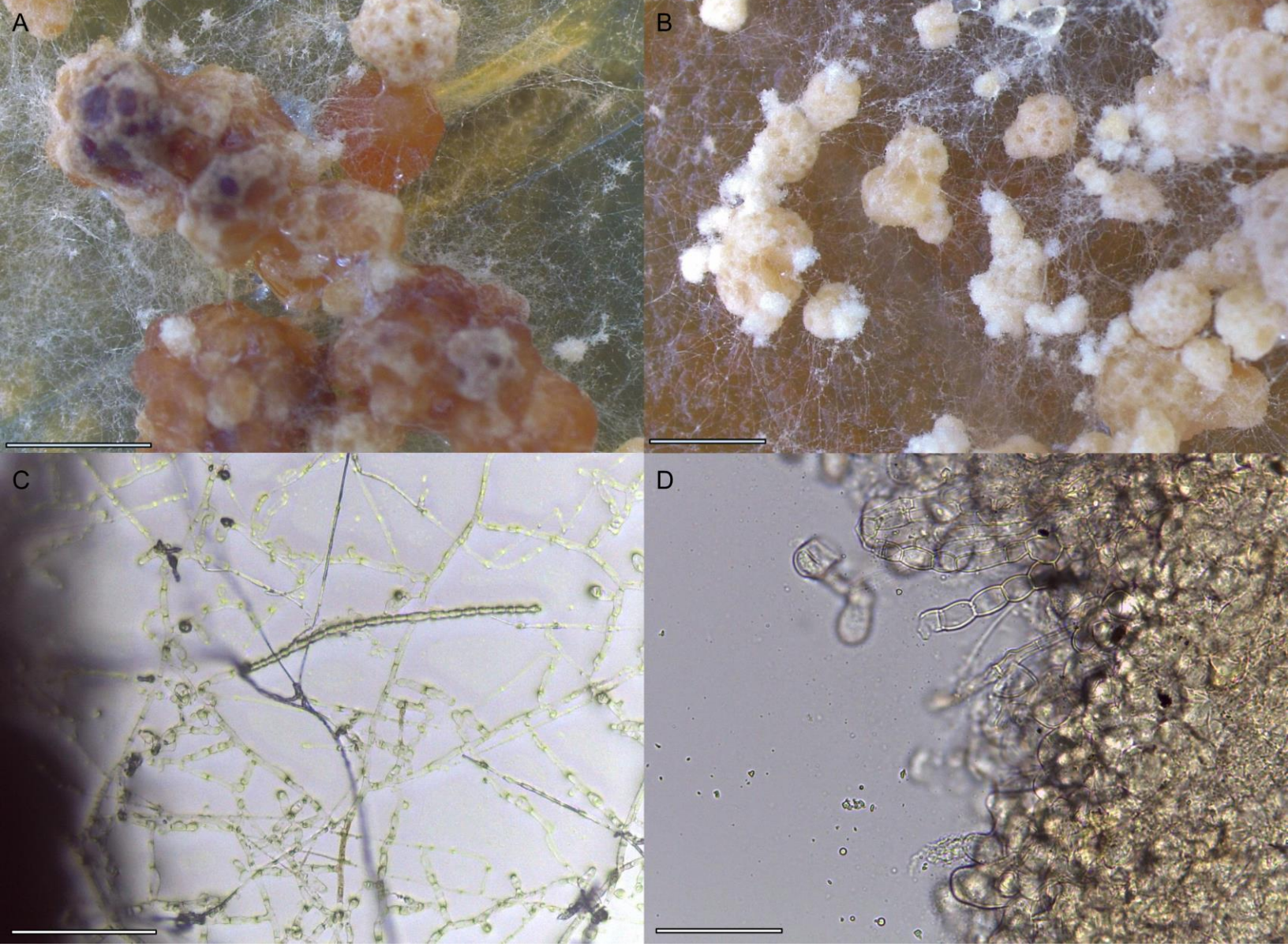
Supplementary Figure S6. Most likely RAxML phylogenetic tree showing placement of single-spore isolates among other *Scutellinia* isolates. Significant support is denoted by bootstrap values ≥70% at nodes. Green taxa represent isolates that germinated and grew in axenic culture for this study.



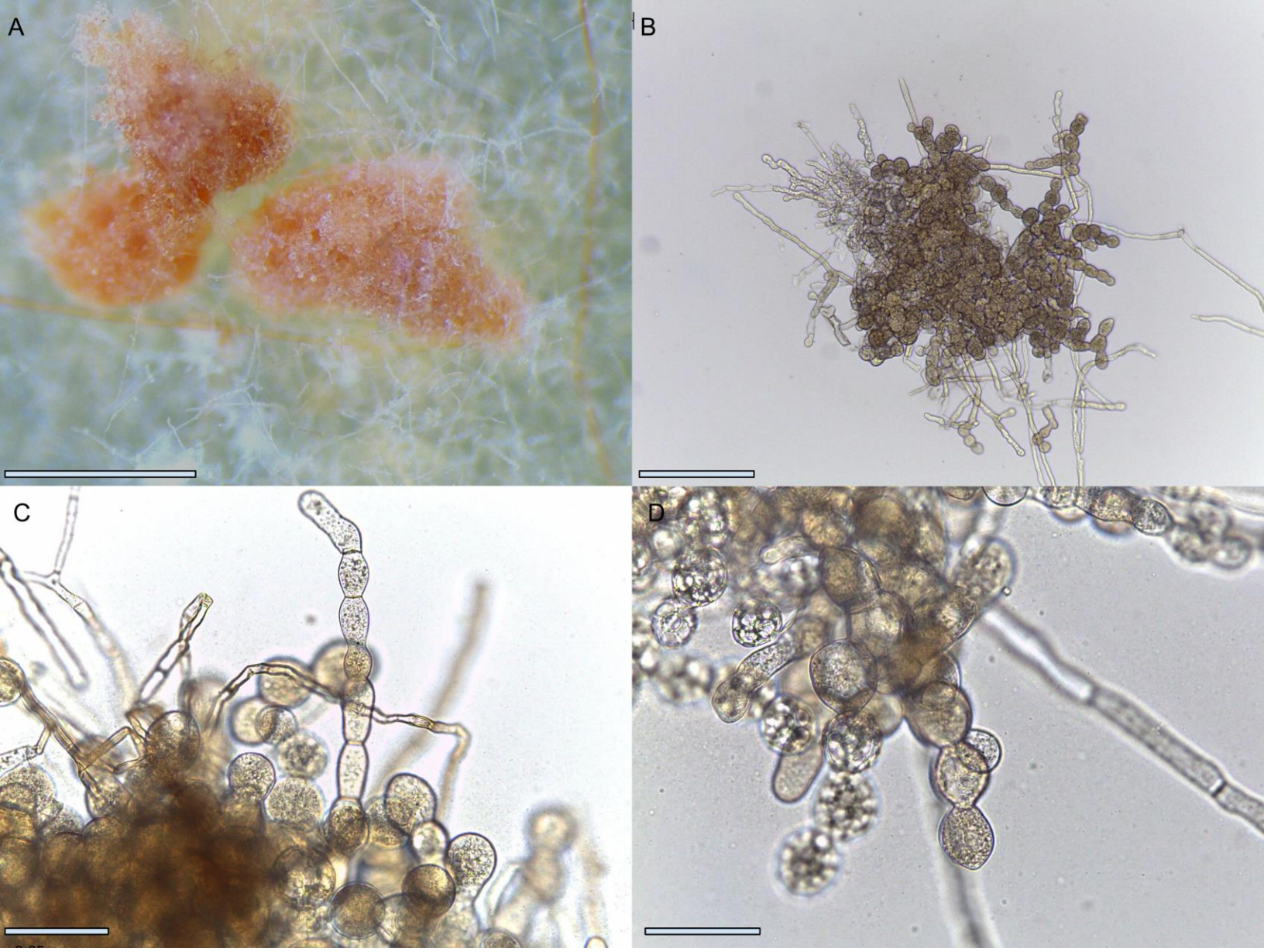
Supplementary Figure S7. Most likely RAxML phylogenetic tree showing placement of single-spore isolates among other *Sphaerosporella* isolates. Significant support is denoted by bootstrap values ≥70% at nodes. Green taxa represent isolates that germinated and grew in axenic culture for this study.



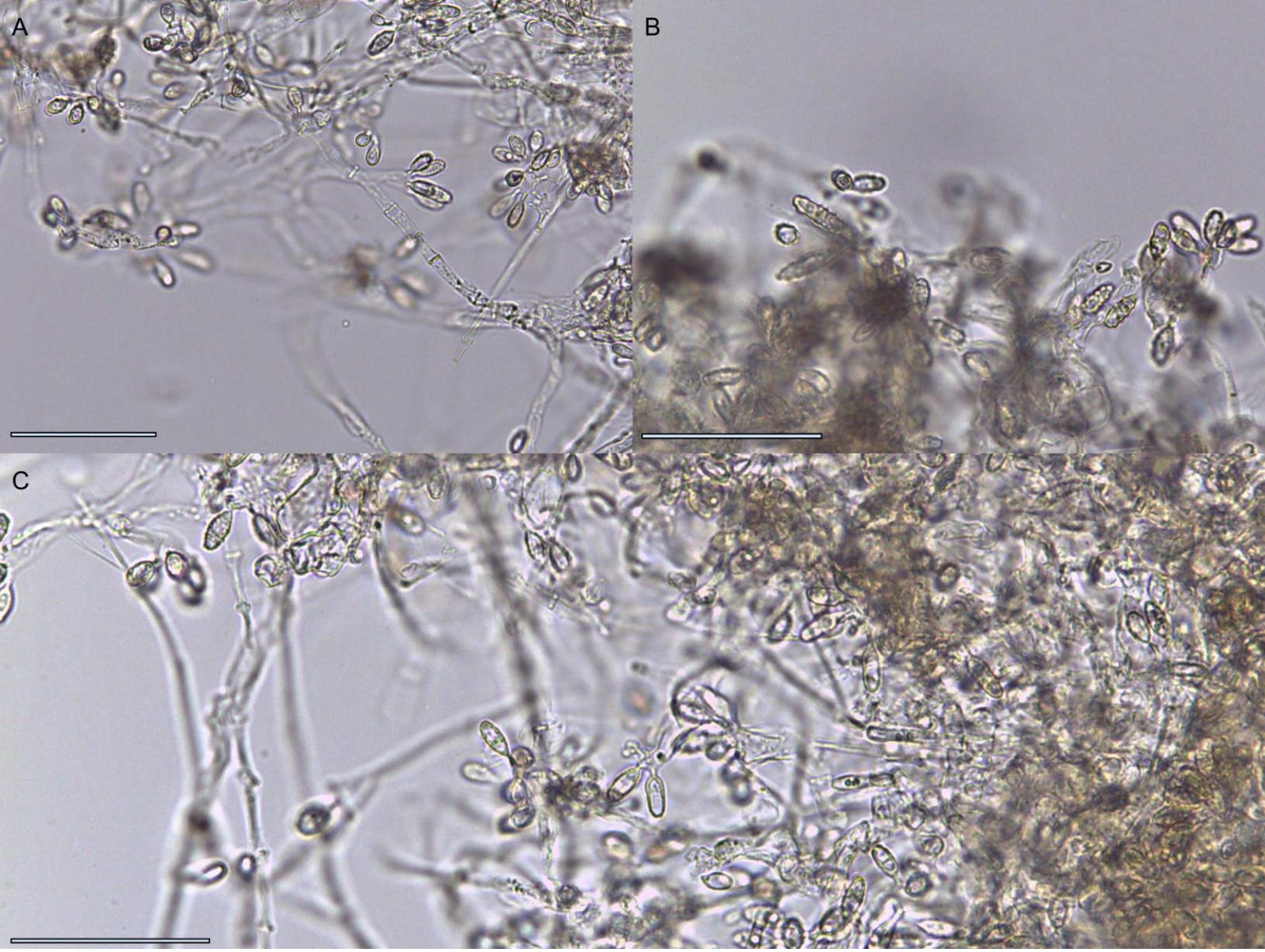
Supplementary Figure S8. Most likely RAxML phylogenetic tree showing placement of single-spore isolates among other *Gyromitra* isolates. Significant support is denoted by bootstrap values ≥70% at nodes. Green taxa represent isolates that germinated and grew in axenic culture for this study.



Supplementary Figure S9. *Phylloscypha phyllogena* (MSC0286083) sclerotia and chlamydospores forming on MEA. The images are from the intiial plate and spores were able to interact. A. Sclerotia. B. Sclerotia. C. Chlamydospores Bar=20 um D. Chlamydospores. Scale Bars: A=1.5mm, B=800 μm, C=20 μm, D=5 μm



Supplementary Figure S10. *Morchella angusticeps* (MSC0286085) chlamydospores forming from a single spore isolate on MEA. A. Sclerotia. B. Chlamydospores C. Chlamydospores Bar = 50 um D. Chlamydospores. Scale Bars: A= 1.6 mm B= 200 µm C-D= 50 µm



Supplementary Figure S11. *Peziza* sp. 1 (MSC0286080) conidia that formed from a single spore isolate growing on MMN. Scaler Bars: A-C=50 um