

Supplementary Material File S1

Detailed Methods for Isolation and Culturing

A. Trichocomaceae

The agar plate approach included the following steps: placing 0.5 g of finely cut bedding into 50 ml of 0.7% saline solution, homogenizing the suspension with a Polytron 3100 (Kinematica GmbH, Eschbach DE) at 4000 rpm for 30 sec, making serial dilutions and adding 1 ml into 15 ml water agar with vancomycin to inhibit bacteria, a layer of growth media (contrasting in nutrients) was poured over the solidified water agar that allowed filamentous fungi to grow up through the agar and become aerial while keeping bacteria and yeasts suspended away from both the nutrient source and the agar surface, and incubated in humidity chambers with minimal light exposure at three temperatures (20-22 °C, 35 °C, and 50 °C) for 7 days after which growth was measured as colony diameter. Growth rate was standardized by using single needle stabs from a frozen culture. Concurrently, small amounts of bedding (i.e., 2-5 cm of a single strand of straw, 3-5 pieces of sawdust or single woodchip) were placed onto sterile filter paper soaked with one of 4 sterile solutions (deionized water, 20% sucrose, vitamin solution, or soil extract) and placed in humidity chambers incubated at room temperature and 35 °C and checked every 7 days for microbial community changes. Cultures with morphological characters were transferred using hyphal tipping and single conidia transfer under a stereoscope to agar plates.

Isolates were archived as a spore suspension in a mixture of glycerol, tween, and deionized water contained in 2 ml tubes, first frozen at -20 °C for 24 hours, and then -80 °C for 7 days.

B. Yeast Isolations

A bedding subsample (0.5 g) in 50 ml sterile milli-Q water, was macerated at 4000 rpm for 30 sec in a Polytron 3100. A 1ml aliquot of each bedding isolate culture or 100 µl milk was pipetted onto 11 different culture media, i.e., Czapek Yeast Autolysate Agar (CYA-Oxoid CM0097), blood agar media, Acidified Weak Potato Dextrose Agar with Yeast Extract (AWPY), Sabouraud Dextrose Agar (SDA), Corn Meal Agar (CMA), Caffeic Acid Agar (CAF), Brain Heart Infusion Agar (BHI), Yeast Sodium Agar (YNG), Yeast Lactose Agar (YLA), Rose Bengal Chloramphenicol (RBA-Difco), and Artificial Rumen Agar (RUM).

All media were purchased from Oxoid (Hants United Kingdom) or Difco (Sparks Maryland, USA). Isolated colonies were transferred to sterile screw top polypropylene bottles containing 75ml of nutrient broth supplemented with dextrose (NDB- nutrient dextrose broth), shaken and incubated at 28 °C for 72 hours.

To archive samples, 0.9 ml of liquid culture was transferred to 2 ml freezer tubes containing 0.9 ml 50% glycerol/50% nutrient broth and frozen at -80 °C.

For all assays and DNA extraction, isolates were prepared from freezer storage on nutrient dextrose broth and incubated at 28 °C for 72 hours. Cells were pelleted and resuspended in either 4 ml of molecular water for DNA extraction or 15 ml sterile water for other assays.

C. Yeast Isolation Media Recipes

*All media for isolation of Yeasts supplemented with 10 µg/ml gentamycin and 0.8 µg/ml vancomycin.

Acidified Weak Potato Dextrose Agar with Yeast Extract (AWPY)

- Potato dextrose broth 1.2 g
- Yeast extract 1 g
- 20% lactic acid 0.3 ml
- 2% thiabendazole 5 ml
- Agar 20 g
- Distilled water 1000 ml

Artificial Rumen Agar (RUM)

- Gelatin 2.5 g
- Peptone 2.5 g
- Beef extract 3.0 g
- Dextrose 2.5 g
- Methyl cellulose 5 g
- Agar 17.5 g
- Distilled Water 1000 ml

Blood Agar Medium (Fisher):

- Pancreatic digest of casein 15 g
- Papaic digest of soy meal 5 g
- NaCl 5 g
- Sheep blood 5 g
- Agar 15 g
- Distilled Water 1000 ml

Brain Heart Infusion Agar (BHI) - Difco

- Calf brains, infusion 200 g
- Beef heart, infusion 250 g
- Proteose peptone 10 g
- Dextrose 2 g
- Sodium chloride 5 g
- Disodium phosphate 2.5 g
- Agar 20 g
- Distilled water 1000 ml

Caffeic Acid Agar (CAF) (Modified from Himedia):

- Caffeic acid 0.3 g
- Creatine 3.0 g
- Soy peptone 5.0 g
- Dextrose 10.0 g
- Monopotassium phosphate 0.5 g
- Magnesium sulfate 20.0 g
- Distilled Water 1000 ml

Corn Meal Agar (CMA) (modified from Alpha Biosciences):

- Corn Meal (infusion from solids) 20 g
- $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ 0.005 g
- $\text{ZnSO}_4 \cdot 7\text{H}_2\text{O}$ 0.01 g
- Agar 15 g
- Distilled Water 1000 ml

Czapek Yeast Autolysate agar (CYA) (modified from Pitt, 1979):

- NaNO_3 3 g
- Yeast extract (Difco) 5 g
- Sucrose 30 g
- $\text{K}_2\text{HPO}_4 \cdot 3\text{H}_2\text{O}$ 1.3 g
- $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$ 0.5 g
- KCl 0.5 g
- $\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$ 0.01 g
- $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ 0.005 g
- $\text{ZnSO}_4 \cdot 7\text{H}_2\text{O}$ 0.01 g
- Agar 20 g
- Distilled water, pH 6.3 ± 0.2 1000 ml

Dichloran Glycerol (DG18)

- Glycerol 220 g
- Agar 18g
- Distilled water, pH 5.6 ± 0.2 1000 ml

Dichloran Rose Bengal Chloramphenicol (DRBC) (Difco):

- Proteose Peptone No. 3. 5 g
- Dextrose 10 g
- Monopotassium Phosphate 1 g
- Magnesium Sulfate 5 g
- Dichloran 0.002 g
- Rose Bengal 0.025 g
- Chloramphenicol 0.1 g

- Agar 15 g
- Distilled Water 1000 ml

Dichloran 18% glycerol agar (DG18)(Oxoid)

- Peptone 5 g
- Glucose 10 g
- Potassium dihydrogen phosphate 1 g
- Magnesium sulphate 0.5 g
- Dichloran 0.002 g
- Agar 15 g
- Distilled water, pH 5.6 ± 0.2 1000 ml

Rose Bengal Chloramphenicol (RBC)

- Soy peptone 5.0 g
- Dextrose 10.0 g
- Monopotassium phosphate 0.5 g
- Magnesium sulfate 20.0 g
- 2.5mg/ml Chloramphenicol 10 ml
- Agar 20.0 g
- Distilled Water 1000 ml

Sabouraud Dextrose Agar (SDA) - Oxoid

- Dextrose 40 g
- Peptone 10 g
- Agar 20 g
- Distilled water (pH 5.6 ± 0.2) 1000 ml

SUNaCaE+CYA

Yeast Extract Sucrose 20% Salt Agar (YE20S) (modified from Difco)

- Yeast extract 20 g
- Sucrose 150 g
- Magnesium sulfate 0.5 g
- Trace elements stock solution 1 ml
- Sodium chloride 200 g
- Agar 20 g
- Distilled Water (pH 6.5 ± 0.2) 1000 ml

Yeast Lactose Agar (YLA) (Himedia):

- Yeast Extract 1.0 g
- Lactose 10.0 g

- Dipotassium hydrogen phosphate 0.5 g
- Magnesium sulfate 0.2 g
- Sodium chloride 0.1 g
- Agar 20 g
- Distilled Water 1000 ml

Yeast Sodium Agar (YNG) (modified from Oxoid SDA):

- Glycerol 180 g
- Sodium Chloride 2.5 g
- Peptone 5 g
- Yeast Extract 5 g
- Dextrose 3 g
- Distilled Water 1000 ml