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Porpomyces submucidus (Hydnodontaceae, Basidiomycota), a new species from tropical China based on morphological and molecular evidence

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Abstract

A new species is described from tropical China as *Porpomyces submucidus* on the basis of both morphological characters and molecular evidence. Phylogenetic analyse based on the ITS sequence, LSU sequence and the ITS+LSU sequence show that the new species belongs to *Porpomyces* and forms a distict clade as a sister group of *Porpomyces mucidus*. The fungus is characterized by thin, white to cream, resupinate basidiome with cottony to rhizomorphic margin, small pores (7–9 per mm), a monomitic hyphal structure with clamped generative hyphae, usually ampullated at most septa, and small, hyaline, thin-walled, ellipsoid basidiospores measuring 2.2–2.8 × 1.2–1.8 µm. It is closely related to *Porpomyces mucidus*, but the latter has larger pores (4–5 per mm) and larger basidiospores (2.8–3.9 × 2–2.8 µm).

Key words: phylogeny, taxonomy, Trechisporales

Introduction

Porpomyces Jülich (Hydnodontaceae, Trechisporales), typified with *Porpomyces mucidus* (Pers. : Fr.) Jülich, was erected by Jülich (1982) and characterized by a combination of monomitic hyphal structure, clamped generative hyphae and a negative reaction in Melzer's reagent (Jülich 1982, Tomšovský *et al.* 2010). The genus was treated as a synonym of *Ceriporiopsis* Domański by many mycologists (Gilbertson & Ryvarden 1986, Núñez & Ryvarden 2001, Ryvarden & Melo 2014). However, Rajchenberg (2003) found that the species formed ampulliform septa in culture. Additionally, molecular phylogeny demonstrated that it formed a distinct clade as a sister group of *Trechispora* P. Karst., and is not related to *Ceriporiopsis* (Larsson 2001). So, *Porpomyces* was revived as a valid genus based on morphological and molecular evidence by Rajchenberg (2003), Niemelä (2005), Tomšovský *et al.* (2010) and Yurchenko *et al.* (2014). Morphologically, *Porpomyces* differs from *Ceriporiopsis* by having cottony to rhizomorphic margin and ampullate clamp connections.

China has a high diversity of polypores, especially in Hainan Province which is an island located between 18°10′–20°10′N and 108°37′–111°05′E in Southern China, and 260 polypore species have been recorded from the island (Dai *et al.* 2011, 2012, Tian *et al.* 2013, Li *et al.* 2014). During a repeated field survey for wood-decaying fungi of Hainan Province in 2014, a nice resupinate polypore with white pores and rhizomorphic margin was found, and it was tentatively identified as *Porpomyces mucidus*. However, its smaller pores and basidiospores than those of *P. mucidus* suggest that it might be an undescribed species. Phylogenetic analysis confirms that it is new species of *Porpomyces*. The illustrated description of the new species is provided in the present paper.

Materials and methods

Morphological studies.—Studied specimens were deposited in the herbarium of the Institute of Microbiology, Beijing Forestry University (BJFC). The microscopic procedure followed He & Dai (2012). Sections were studied at magnifications up to × 1000 using a Nikon Eclipse 80i microscope and phase contrast illumination (Nikon, Tokyo, Japan). Drawings were made with a drawing tube. Microscopic features, measurements and drawings were made from

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