Annulatascus saprophyticus sp. nov. and Pseudoannulatascus gen. nov. to accommodate Annulatascus biatriisporus (Annulatascales, Sordariomycetes) from Thailand

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Abstract

A new Annulatascus species, A. saprophyticus, found on decaying wood in freshwater in northern Thailand is introduced in this paper. The new taxon is illustrated, described and compared with other species in the genus, as well as a key to genus is provided. It differs from other species in the genus in having straight up right necks at one end, paraphyses embedded in a gelatinous matrix, and 0–3-septate, fusoid to lunate ascospores, which are larger than other species in the genus. Phylogenetic analyses based on LSU gene data showed that A. saprophyticus belongs in Annulatascaceae (Annulatascales, Sordariomycetidae). Based on the molecular data and a reevaluation of morphology, a new genus Pseudoannulatascus in Annulatascales is introduced to accommodate Annulatascus biatriisporus.

Key words: Annulatascales, Aquatic fungi, LSU, Phylogeny, Taxonomy

Introduction

The genus Annulatascus was introduced by Hyde (1992) to accommodate two ascomycete species, with A. velatisporus K.D. Hyde as the type species, and A. bipolaris K.D. Hyde, which were collected from submerged decaying wood in Australia. Annulatascus is characterized by having immersed or superficial, black ascomata with long necks, unitunicate, cylindrical asci with relatively massive, refractive, apical rings and fusiform ascospores with appendages or sheaths (Hyde 1992, Boonyuen et al. 2012, Hu et al. 2012). Presently, 18 species are included in the genus (Barbosa et al. 2008, Mohamed et al. 2011, Boonyuen et al. 2012, Hu et al. 2012) and most were reported from freshwater habitats in tropical areas (Barbosa et al. 2008, Shearer et al. 2010, Boonyuen et al. 2012, Hu et al. 2012) and only two species (A. citrisporus J. Fröhlich & K.D. Hyde, A. licualae J. Fröhlich & K.D. Hyde) are known from terrestrial habitats on palm rachides (Fröhlich & Hyde 2000). Species in the genus Annulatascus could be recognized on the basis of morphology of ascospores and the presence or absence of a mucilaginous sheath (Tsui et al. 2002).

Abdel-Wahab et al. (2011) showed that A. hongkongensis, A. nilensis, and A. velatisporus clusters in the Annulatascales clade, but A. biatriisporus K.D. Hyde did not group with them based on the 28S rDNA sequence data, suggesting Annulatascus might be polyphyletic.

In this paper, we establish a new genus Pseudoannulatascus for the lineage of Annulatascus biatriisporus under a reevaluation of morphology and phylogenetic analyses, and also describe and illustrate a new Annulatascus species based on morphological characters and phylogenetic analyses of LSU sequence data.