Article

Auricularia thailandica sp. nov. (*Auriculariaceae*, *Auriculariales*) a widely distributed species from Southeastern Asia

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Abstract

Auricularia is an important genus among the jelly fungi due to its popular consumption and medicinal properties. A new species of *Auricularia*, *A. thailandica* is described from fresh collections made from the Philippines, Thailand and Southern China based on morphological and molecular characters. *Auricularia thailandica* differs from other species by having short and loosely arranged abhymenial hairs on the basidiomata and in the different size of the zones in a cross section of the basidiomata. The species is found to be widely distributed in Southeastern Asia. Phylogenetic relationships were inferred based on the nuclear ribosomal internal transcribed spacer (ITS) region. The new species is introduced with full description and illustrations.

Key words: Jelly fungi, morphology, phylogeny, taxonomy

Introduction

Auricularia Bull. is a genus of jelly fungi in the family *Auriculariaceae* Fr., typified by *Auricularia mesenterica* (Dicks.: Fr.) Pers. Species of *Auricularia* are distributed in tropical, subtropical and temperate regions (Lowy, 1952). Most *Auricularia* species are edible and *Auricularia auricula-judae* (Bull.: Fr.) Queìl. and *A. polytricha* (Mont.) Sacc. are widely produced commercially (Wu *et al.*, 2014a; Yan *et al.*, 2004).

As the macroscopic features of *Auricularia* vary with the age of the specimen, exposure to light, availability of moisture and other environmental factors; the current morphological classification of *Auricularia* is based on internal stratification of different layers and abhymenial hairs on the basidiomata (Kobayashi, 1981; Lowy, 1951). Ten species were described worldwide by Lowy (1952). Later on, mating studies (Duncan & MacDonald, 1967) and differences of spore sizes (Parmasto & Parmasto, 1987) were used to classify species. Fifteen species and five variants of *Auricularia* were monographed by Kobayashi (1981). A recent study estimated that this genus comprises 10–15 species throughout the world (Looney *et al.*, 2013), while Kirk *et al.* (2008) estimated there are eight species worldwide.

Phylogenetic analysis of ITS shows that *Auricularia* is a monophyletic genus (Weiß & Oberwinkler, 2001). ITS analysis has separated *A. auricula-judae, A. polytricha* and *A. fuscosuccinea* into three well-supported clades (Montoya-Alvarez *et al.*, 2011). Further analyses of ITS with a large sample size revealed nine species of *Auricularia* with relevant morphological and ecological characters (Looney *et al.*, 2013). In addition, the analysis of *rpb2* showed similar groupings as the ITS sequence results, but with a higher bootstrap support (Looney *et al.*, 2013).

According to the literature, 15 species of *Auricularia* have been recorded in China based on morphology. However, due to the invalid nomenclature of *A. reticulata* L.J. Li and misidentification of *A. rugosissima,* both species cannot be considered as members of the genus (Wu *et al.*, 2014a). Molecular analyses have been used for species delineation. RFLP and RAPD techniques classified eight *Auricularia* species in China (Yan *et al.*, 2002; Yan *et al.*, 1999). Wen *et al.* (2005) identified three species of *Auricularia* using ERIC analysis. *Auricularia auricula, A. delicata, A. fuscosuccinea* and *A. polytricha* were confirmed to occur in China based on ITS sequence analysis (Wang *et al.*, 2013). Overall, phylogenetic studies of this genus in China are however, still at the initial stage (Wu *et al.*, 2014a).