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Identification and morphological characteristics of endophytic fungi from endangered orchid Paphiopedium purpuratum

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Paphiopedilum purpuratum (Lindl.) Stein is an endangered orchid species that inhabit forest areas of Yunnan and Guangdong provinces in southeastern China. *P. purpuratum* has a great ornamental potential, but its populations are suffering from reduction of their forest habitat [2, 4].

P. purpuratum grows in a close interaction with a range of mycorrhizal and endophytic fungi that provide nutrient uptake and all-over sustainability of the plant. However, data on biodiversity of fungi associated with *P. purpuratum* is scarce, especially in greenhouse conditions under which plants are grown in conservation centers [2, 3].

Thus, the purpose of current research is isolation of endophytic fungi from roots of greenhouse-grown *P. purpuratum* and morphological characterization of obtained isolates.

Fungal cultures were obtained by placing surface-sterilized roots of *P. purpuratum* collected in greenhouse of Shenzhen Orchid Conservation and Research Center on plates with oatmeal agar. After 10 days of incubation appeared mycelia were moved into pure cultures, which were used in morphological examination and identification through sequencing.

Seven isolates of endophytic fungi were obtained, identified, and characterized morphologically. According to sequencing, five isolates belong to family Xylariaceae, one belongs to genus *Trichoderma*, one belongs to genus *Fusarium*. Isolated fungal taxa are known endophytes of orchids [1, 5, 6] but specific role of these fungi in roots of *P. purpuratum* is still to be discovered with purpose to improve cultivation methods of this rare species and restore its population.

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