

Three New Ascomycete Fungi Isolated from Freshwater and Plant Leaf Samples in Korea

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Purpose: During an investigation of fungi of the ascomycete in Gwangju, Korea, the isolates CNUFC-MSW24-4, CNUFC-HRS5-12 and CNUFC-NJ1-12 were isolated from freshwater and *Torreya nucifera* leaf samples collected in Wonhyo valley, Hwangnyonggang and arboretum of Chonnam national university.

Methods: The three Strains, CNUFC-MSW24-4, -HRS5-12, -NJ1-12 were isolated from freshwater samples and *Torreya nucifera* leaf samples in Korea by using different isolation method. Genomic DNA were extracted. For these strains, ITS, LSU, SSU, ACT, *tef1- α* and GPDH sequences were amplified with the primer pairs ITS1/ITS4, LROR/ LR5F, NS1/NS4, EF1-728F/ EF1-986R and Gpd1/Gpd2. The purified PCR products were sequenced with an ABI 3700 automated DNA sequencer. Phylogenetic analyses based on ITS, LSU, SSU, ACT, *tef1- α* and GPDH sequences were conducted, using BioEdit ver. 7.2.6, Clustal X2 ver. 2.0. Their phylogenies were assessed by employing programs available in the MEGA7. Morphological characteristics were observed under Olympus BX51 microscope.

Result: Sequences of β -tubulin gene analysis by BLASTn search indicated that the isolate CNUFC-MSW24-4 was closest to *Paraconiothyrium fungicola* (GenBank accession no. JX496359) with identity values of 94.56% (400/423 bp). Sequences of rDNA ITS regions analysis by BLASTn search indicated that the isolates CNUFC-HRS5-12 and CNUFC-NJ1-12 were closest to *Ochroconis* sp. isolate WX-ITS4_H12 (GenBank accession no. MH969430) and *Phyllosticta harai* (GenBank accession no. KU363980) with identity values of 99.57% (687/690 bp) and 97.05% (625/644 bp), respectively.

Conclusions: On the basis of their morphological characteristics and phylogenetic analysis, the CNUFC-MSW24-4, -HRS5-12 and -NJ1-12 isolates were identified as a new species of *Paraconiothyrium*, *Ochroconis* and *Phyllosticta*, respectively.