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Chytridiomycete fungi from freshwater samples collected at Korea

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Purpose: In a survey of indigenous fungal diversity in Korea, five strains of EML-JCW1-1, -HRW1-1, -HRW1-6, -19CPW5-1 and -19CPW6-1 belonging to Chytridiomycetes were isolated from freshwater samples collected at Jeju and Gwangju, South Korea.

Methods: The strains used in this study were isolated from freshwater samples collected at Cheonjeyeon in Jeju, Hwangnyonggang and an artificial pond located in Chonnam National University campus, Gwangju. The Strains were isolated using a bait method and incubated on PmTG medium. The strains were cultured on PmTG. gDNA was extracted and the 28S rDNA was amplified with LR0R-LR5F primers pair. To identify the fungus at the species level, detailed morphological studies and rDNA sequence analyses were performed.

Results: BLASTn search indicated that the identity values of 28S rDNA sequences of EML-JCW1-1, -HRW1-1, -HRW1-6, -19CPW5-1 and -19CPW6-1 isolates represented 100% (740/740 bp), 99.6% (790/793bp), 99.6% (725/728bp), 98.5% (811/823) and 98.7% (857/868 bp) with *Globomyces pollinis-pini* Barr-003 (GenBank acc. no. DQ485532), *Chytriomycetes hyalinus* ARG097 (GenBank acc. no. JX905513), *Protrudomyces lateralis* ARG071 (GenBank acc. no. NG_060073), *Gorgonomyces* sp. ARG036 (GenBank acc. no. EF585614), and *Betamyces americaemerdionalis* ARG063 (GenBank acc no. EF585624), respectively.

Conclusions: Our study showed that the EML-JCW1-1, -HRW1-1, -HRW1-6, -19CPW6-1 and -19CPW6-1 strains were identified as novel or undescribed species in Korea. The findings of such chytridiomycete fungi are significantly important in diversity study of rare fungal taxa.