

Taxonomic and Phylogenetic Studies of 149 Korean Aphyllorphoroid Fungi

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Morphological and molecular phylogenetic studies were carried out for 149 species of Korean aphyllorphoroid fungi and the systematic points of several new phylogenetic groups were discussed. Through the specimen examination of 149 species and 209 strains of Korean Aphyllorphorales, a new identification key applied to the Korean Aphyllorphorales was constructed. Among them, 32 aphyllorphoroid fungi were confirmed as unrecorded species to Korea and three additional fungi as new to science. Their phylogenetic positions were confirmed and their identities were verified. Three new species were named *Irpex brevicystis* sp. nov., *Fomitopsis incarnatus* sp. nov. and *Porodisculus orientalis* sp. nov. Molecular phylogenetic analyses of nuc-LSU rDNA sequences from 142 Korean aphyllorphoroid species and about 600 sequences of the class Homobasidiomycetes retrieved from the GenBank indicated that there were 13 independent clades in this class as follows; the core polyporoid clade, chaetodermatoid clade, fomitopsidoid clade, phanerochaetoid-steccherinoid clade, russuloid clade, telephoroid clade, corticioid clade, trechisporoid clade, gomphoid-phalloid clade euagarics clade, bolete clade, hymenochaetoid clade, and cantharelloid clade.