

A308 **Phylogenetic Relationships of *Antrodia* and its Related Genera Based on Sequences of Internal Transcribed Spacers**

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Phylogenetic relationships among several polyporoid genera were investigated using sequences of internal transcribed spacers. *Antrodia* was not monophyletic and was separated into three groups. *Antrodia serialis* and *Antrodia malicola* formed a monophyletic group with *Fomitopsis sprague*, *Antrodia gossypina* and *Antrodia vaillantii*, which have rhizomorphs in the basidiocarp, formed another monophyletic group. *Antrodia albida* was included in the *Oligoporus* group. *Antrodiella*, which differs from *Antrodia* in the type of rot, was not related to *Antrodia* but formed a different monophyletic group with *Steccherinum* and *Junghuhnia*. *Diplomitoporus* was not related to the *Antrodiella*, *Junghuhnia*, and *Steccherinum* clade. Some related genera in the Polyporaceae were divided into two groups by wood rot type.

A309 **Heterogeneity of ITS1 Sequences in *Trichaptum abietinum***

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The evolutionary history of the wood-inhabiting *Trichaptum* species was investigated by DNA sequences. Gene phylogenies inferred from the mitochondrial small subunit rDNA and ITS2 regions of nuclear rDNA were congruent, providing the evolutionary pathway for several characters of *Trichaptum*. But the ITS1 region of nuclear rDNA showed a discordant gene tree with others. In *T. abietinum*, there are at least three heterogeneous groups in the ITS1 region. The first group was closely related to *T. fusco-violaceum*, which was concordant with inference from mitochondrial small subunit rDNA and ITS2 regions. The second group was clustered with *T. biforme* and *T. subchartaceum*. And the third group consisted of strains collected from Korea. Distribution of three ITS1 types within the *Trichaptum* lineage exhibits a non-orthologous pattern of evolution, thus violating true phylogenetic relationships. The results suggest that the ancestral ITS1 types may have been present prior to divergences of *T. abietinum* - *T. fusco-violaceum* - *T. biforme* - *T. subchartaceum* complex, and then the species of the complex have evolved independently.