

Phylogenetic Analysis of Lichen-Forming Fungi *Rhizoplaca* Zopf from China Based on ITS Data and Morphology

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A molecular phylogenetic analysis of *Rhizoplaca melanophthalma*, *Rhizoplaca chrysoleuca*, *Rhizoplaca peltata* and *Rhizoplaca haydenii* is presented based on the nuclear ribosomal internal transcribed spacer (ITS) regions and morphology. *Rhizoplaca* species were collected at 3400–3900 m in Tianshan Mountains, Xinjiang province, China. *Rhizoplaca haydenii* is reported for the first time in China. Maximum parsimony (MP) analysis of ITS sequences obtained from Tianshan Mountains samples and GenBank reveals that the evolution relationship of *Rhizoplaca melanophthalma* and *Rhizoplaca chrysoleuca* is closer to each other than to *Rhizoplaca peltata*, and *Rhizoplaca haydenii* showed closer relatedness to *Rhizoplaca melanophthalma*. When the four species groups from Tianshan Mountains were analyzed alone through the neighbour-joining (NJ) and minimum evolution method, we obtained the same result. The morphology analysis of *Rhizoplaca* Zopf which reveals the pruinose discs and apothecial discs of species did not show convincing evidences to prove phylogenetic relationship among *Rhizoplaca* species. In our study, the result further proved that *Rhizoplaca* should be rejected as a genus separate from *Lecanora*.

Key words: *Rhizoplaca* Zopf, Phylogeny, ITS