



PROHIBITED MOLECULES, UNRESOLVED SPECIES: NEW FINDINGS AND CONSTRAINTS IN HUNGARIAN *PSILOCYBE* RESEARCH

Tiltott molekulák, tisztázatlan fajok:
a hazai *Psilocybe*-kutatás új eredményei és korlátai

Viktor Papp^{1,3*}, Zsuzsanna Csákány¹, Mihály Csizmár², Péter Finy² & Bálint Dima³

¹Department of Botany, Hungarian University of Agriculture and Life Sciences, Villányi út 29–43, H-1118, Budapest, Hungary; ²Hungarian Mycological Society, Pázmány Péter sétány 1/C, H-1117, Budapest, Hungary; ³Department of Plant Anatomy, Institute of Biology, Eötvös Loránd University, Pázmány Péter sétány 1/C, H-1117, Budapest, Hungary; *E-mail: papp.viktor@uni-mate.hu

Despite renewed scientific interest in psilocybin-producing fungi, the diversity and taxonomy of the genus *Psilocybe* remain poorly documented in Hungary. Here, we present recent morphological, molecular and distributional data on Hungarian *Psilocybe*, integrating newly generated and previously obtained sequence data. The apparently low number of documented species may reflect both genuinely limited local diversity and insufficient sampling. Reliable wild records of otherwise widespread European taxa such as *P. cyanescens* and *P. semilanceata* are currently lacking in Hungary. Historical Hungarian material reported as *P. cyanescens* was later reassigned to *P. serbica*, which is currently the most consistently documented species of the genus in Hungary. Although known from several localities, published and sequence-confirmed records remain scarce; our recent collections provide further evidence for its occurrence and taxonomic identity. Two Hungarian wild collections initially identified as *P. puberula* were reassessed following ITS sequencing of the type specimen from the Netherlands. Phylogenetic analyses placed both Hungarian collections and the type specimen within the *P. tampanensis* lineage, strongly supporting the conspecificity of *P. puberula* and *P. tampanensis*, a species described from Florida and otherwise known from the Americas. Two GenBank sequences from Spain identified as *P. gallaeciae* also fell within the same lineage. Together, these records suggest that *P. tampanensis* is a morphologically variable species that may have a transatlantic distribution. Whether this reflects a previously overlooked natural distribution or an anthropogenic introduction followed by establishment and spread remains unresolved, particularly because *P. tampanensis* is also commercially cultivated. Overall, our results show that wild *Psilocybe* diversity in Hungary remains insufficiently explored. The controlled status of psilocybin and psilocin raises practical questions for biodiversity research, while growing public interest in psilocybin-producing fungi and the circulation of cultivated material may facilitate anthropogenic introductions and further complicate interpretation of natural distribution patterns. Untangling this hidden diversity will require both continued taxonomic work and a regulatory framework compatible with biodiversity research.