

New technique measures psilocybin potency of mushrooms

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As medical professionals identify more safe and effective treatments using mushrooms, it will be important to ensure product safety, identify regulatory benchmarks and determine appropriate dosing. Credit: UT Arlington

Since the 1970s, the federal government has listed the active ingredients in mushrooms—psilocybin and psilocin—as illegal and having no accepted medical use.

However, in recent years, [medical professionals](#) have found that these substances are safe and effective for treating stubborn conditions such as [treatment-resistant depression](#) and [post-traumatic stress disorder](#). Some jurisdictions now allow for the medical use of mushrooms, while others are considering permitting or at least decriminalizing their recreational use.

Clinicians now find themselves needing to carefully measure the doses of mushrooms to ensure patients receive the proper amount during treatment. To solve this problem, University of Texas at Arlington researchers have created a method to determine the clinical potency of psilocybin and psilocin in the hallucinogenic mushroom species *Psilocybe cubensis*.

"These legislative changes are expected to facilitate further research and potential clinical applications," said Kevin Schug, the Shimadzu Distinguished Professor of Analytical Chemistry in the Department of Chemistry and Biochemistry.

Using [liquid chromatography](#) with tandem mass spectrometry, Schug and colleagues were able to extract and measure the strength of the mushrooms. The findings are published in the February issue of [Analytica Chimica Acta](#).

The results were then compared with two separate labs to ensure accuracy.

"As medical professionals identify more safe and effective treatments using mushrooms, it will be important to ensure product safety, identify

regulatory benchmarks and determine appropriate dosing," Schug said. "Established and reliable analytical methods like the one we describe will be essential to these efforts to use [mushrooms](#) in clinical settings."

Co-authors included colleagues at Scottsdale Research Institute in Phoenix; Shimadzu Scientific Instruments in Maryland; and Millipore-Sigma in Round Rock, Texas.

More information: Roman Goff et al, Determination of psilocybin and psilocin content in multiple *Psilocybe cubensis* mushroom strains using liquid chromatography – tandem mass spectrometry, *Analytica Chimica Acta* (2023). [DOI: 10.1016/j.aca.2023.342161](https://doi.org/10.1016/j.aca.2023.342161)

Provided by University of Texas at Arlington

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