

New 'party pill' test could help authorities keep up with trends in drug (ab)use

November 25 2015

A new test for club drugs like ketamine can detect low levels of drugs in urine and plasma, making it faster, easier and cheaper to identify them. The authors of the study, published in *Journal of Chromatography B*, say it could give authorities the boost they need to keep up with trends drug (ab)use.

A new class of drugs known as "new psychoactive substances" has recently hit the clubs. Sold online or in smart shops as "legal highs," these drugs pose a problem for authorities because they're difficult to analyze and it's tricky to keep up with the speed at which trafficking shifts to new products. There is currently no standard screening test for these drugs.

One widely used club [drug](#) is ketamine - traditionally an animal tranquilizer - which causes users to hallucinate. Used as a date rape drug in recent years, ketamine works as a sedative, provides pain relief and causes memory loss. When people with ketamine intoxication attend hospital emergency services, their symptoms can be mistaken easily for alcohol intoxication, resulting in them being given the wrong treatment.

It is vital to develop new tests to detect psychoactive substances, in order to keep up with - and even get ahead of - trends in drug use. The new study describes, for the first time, a fast, simple and fully validated method to detect ketamine in urine and plasma. The research is the result of a collaboration between Universidade da Beira Interior and Instituto Nacional de Medicina Legal e Ciências Forenses in Portugal, and

Universidad de Santiago de Compostela in Spain.

"These drugs are difficult to analyze - we see a lot of versatility in the molecules and new drugs are appearing almost every month; traffickers are always one step ahead of the authorities," said Dr. Eugenia Gallardo, lead author of the study from Universidade da Beira Interior in Portugal. "Analytical methods for detecting drugs in biological samples play a decisive role, and their reliability is a matter of great significance in forensic and clinical toxicology."

The [new test](#) uses a method called gas chromatography-tandem mass spectrometry (GC-MS/MS), which is often used in drug detection, fire investigation and environmental analysis. The researchers extracted [ketamine](#) and the main substance produced when it breaks down, called norketamine, from 0.25mL of urine and plasma samples.

Using the new method, they could detect amounts of the drug as low as 5 nanograms per milliliter. Being able to detect the drug in such small samples at low levels is helpful for forensic labs, since they would be able to run multiple tests on a single sample. What's more, the test only takes around 30 minutes from start to finish, making analysis faster and helping doctors ensure the right treatment is administered.

"These low limits of detection and the quite high amounts of the compounds extracted from very small samples make this procedure suitable for laboratories performing routine analysis in the field of forensic toxicology," said Dr. Gallardo. "Compared with existing methods, our new procedure is faster and more cost effective."

More information: Ivo Moreno et al. Determination of ketamine and its major metabolite, norketamine, in urine and plasma samples using microextraction by packed sorbent and gas chromatography-tandem mass spectrometry, *Journal of Chromatography B* (2015). [DOI:](#)

[10.1016/j.jchromb.2015.09.032](https://doi.org/10.1016/j.jchromb.2015.09.032)

Provided by Elsevier

Citation: New 'party pill' test could help authorities keep up with trends in drug (ab)use (2015, November 25) retrieved 26 April 2024 from <https://medicalxpress.com/news/2015-11-party-pill-authorities-trends-drug.html>

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