

An old chemical that became a new psychoactive substance: study on O-Acetylpsilocin samples handled for analysis and raise of awareness

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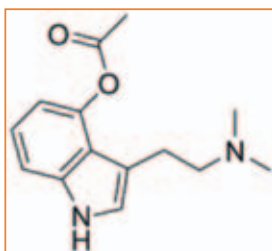
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Introduction

- New psychoactive substances (NPS) refer to emerging substances that have appeared on the market and are not under international control (1). According to the data provided by the European Monitoring System for Drug and Drug Addiction, NPS have experienced an unprecedented increase in number, type and availability during the last years (2).

- Non-controlled tryptamines have psychedelic effects similar to the tryptamines already controlled such as psilocybin from *Psilocybes* mushrooms (3).

- O-Acetylpsilocin also known as Psilacetin and 4-Acetoxy-DMT (4-AcO-DMT) [Figure 1] is a synthetic tryptamine patented in 1963 having a psychedelic effect by stimulating the serotonergic system (3,4) and proposed as a research substitute for psilocybin as a prodrug of psilocin (5).

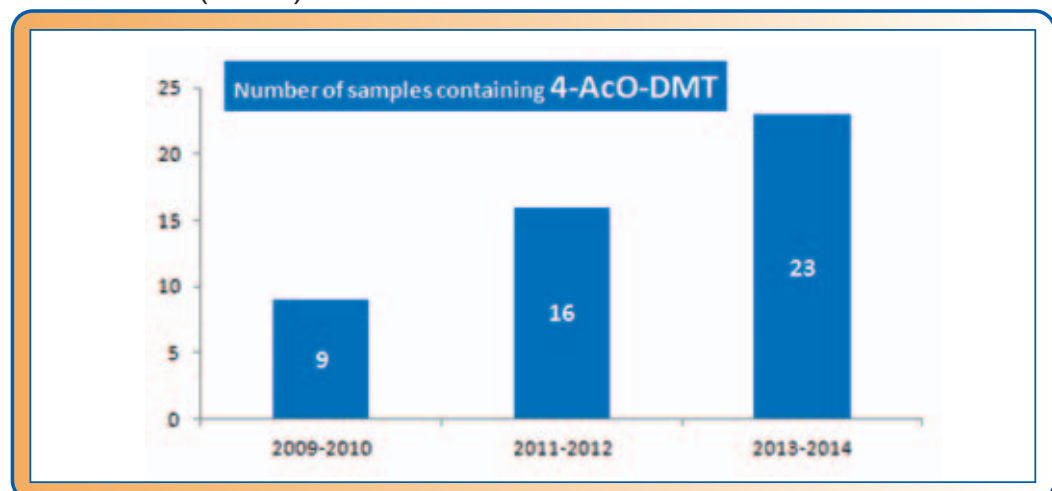


- It is a non-regulated substance in Spain.

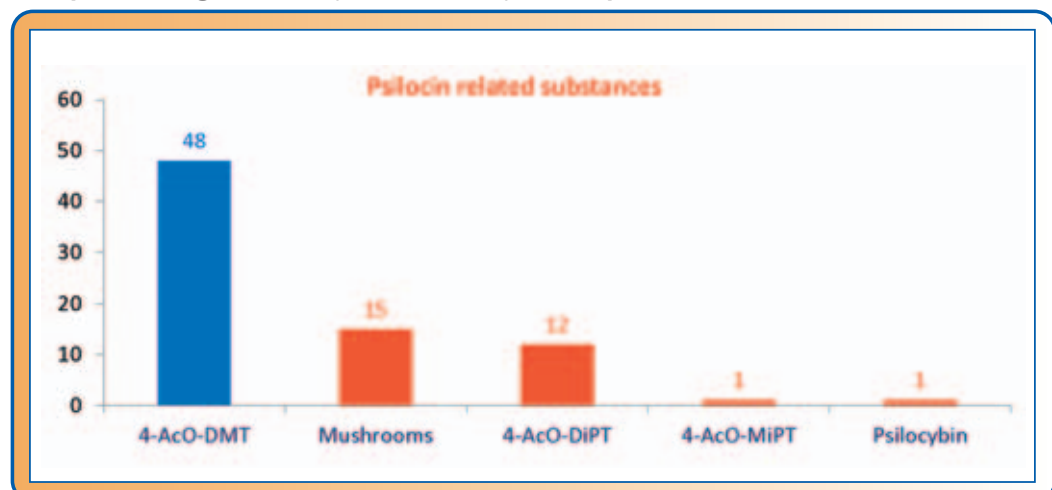
- Search for literature on 4-AcO-DMT until June 2015 in PubMed database found no studies conducted on humans.

Results

- From 17.432 samples registered during the period of study 4-AcO-DMT was found in 48 (0.27%)



- 4-AcO-DMT was the 24th most handled substance during the whole period representing 62.33% (48 out of 77) of the psilocin related substances.



Conclusion and discussion

- Results show a recent increase in 4-AcO-DMT analysis that could translate a progressive rise in its recreational use gaining ground to other regulated tryptamines.
- Whether 4-OH-DMT found on samples is a result of adulteration, degradation or an analytical artefact should be further studied.
- Clinical relevance comes from its growing use and the absence of scientific evidence on humans, not even a case report, therefore relying on users subjective experience to predict the effects of the substance.
- Awareness should be raised to clinicians and scientist in order to promote evidence on this substance clinical effects as well as epidemiological data at a larger scale.

References

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Objective

The aims of this study are...

- to explore the presence of 4-AcO-DMT from the samples handled to and analyzed by harm reduction service Energy Control and
- to evaluate the ratio between 4-AcO-DMT and other related tryptamines (mushrooms, 4-AcO-DIPT, 4-AcO-MIPT and psilocybin).

Material and methods

- **Sample:** all samples delivered for analysis from January 2009 to December 2014 were studied:

- handled as 4-AcO-DMT.
- or in which 4-AcO-DMT was found.

- **Source:** samples were presented to and analyzed by the Spanish harm-reduction non-governmental organization Energy Control which offers users the possibility of analyzing the substances they intend to consume.

- **Analysis:**

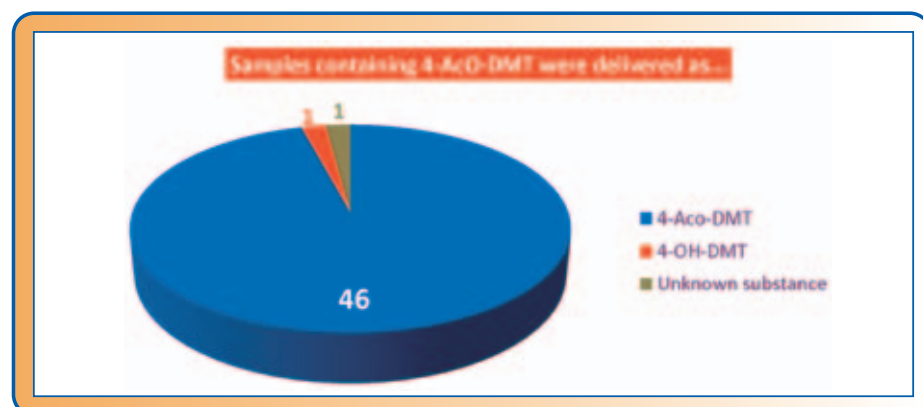
- Thin Layer Chromatography
- Gas Chromatography–Mass Spectrometry.

- Totally 48 samples were presented as 4-AcO-DMT:

- 46 containing 4-AcO-DMT.
- 2 where no substance was found.

- Totally 48 contained 4-AcO-DMT:

- 46 delivered as 4-AcO-DMT
- 1 as 4-OH-DMT and
- 1 as an unknown substance.



- In 37 samples containing 4-AcO-DMT (77.08%) presence of 4-OH-DMT was also found.

