

Catha Edulis (Khat)
Drug facilitated assault BZP 3-TFMPP GHB
Synthetic aminopropiophenones Synthetic cathinones
5-ethoxylated N,N-dialkylated tryptamines Forensic Science
Gas chromatography mass spectrometry Detection Raman spectroscopy
Smuggling Synthetic cannabinoid
Spice Cocaine Psilocybin
Proton magnetic resonance spectroscopy
MDAI Harm reduction Nuclear magnetic resonance spectroscopy
Non-invasive detection (S)-cathinone
GBL

Also in the cathinone field, Brandt *et al.*^[8] have identified a total of five synthetic cathinones present in three internet products. Confirmation was obtained by laboratory synthesis and analysis by gas chromatography mass spectrometry (GC-MS) and nuclear magnetic resonance (NMR) spectroscopy. The preparation of brominated precursors carrying the 3,4-methylenedioxyphe-nyl-nucleus revealed extensive α,α -dibromination which should be of interest for further profiling studies.

More samples claiming to contain a variety of drugs obtained from Internet retailers were characterized by Baron *et al.*^[9] who report that six out of seven products showed misleading labels. Attenuated total reflectance Fourier-transform infrared spectroscopy and GC-MS revealed the presence of 1-(3-(trifluoromethyl)phenyl)piperazine (3-TFMPP), caffeine, 1-benzylpiperazine (BZP) and 5,6-methylenedioxy-2-aminindane (MDAI). Consumption of BZP and 3-TFMPP, and combinations thereof, has been observed since the 1990s, and a mini-review is provided by Lin *et al.*^[10] who present an overview on the subjective effects in humans based on the implementation of commonly used rating scales.

Also in this issue, Lawrence Carter presents a mini-review on the topic of drug-facilitated sexual assault (DFSA).^[11] Data were taken from a number of literature sources, data-reporting services, and databases. This insightful reflection covers a range of drugs and reminds the reader to be mindful about the complicating factors involved in DFSA.

A key constituent of the so-called 'magic mushroom' is psilocybin, an *N,N*-dimethylated tryptamine with powerful psychoactive properties. It serves as the pro-drug for psilocin following desphosphorylation. Shoda *et al.* present an enzyme-assisted preparation of psilocin glucuronide followed by preparative high performance liquid chromatography, determination of exact masses and 1D/2D NMR analysis.^[12]

The structural modification of naturally occurring tryptamines, such as psilocybin, opens the door to a plethora of bioactive drugs which have drawn attention from medicinal, forensic, and clinical communities. Tearavarich *et al.* present a microwave-accelerated synthesis and analytical characterization of 12 previously unreported 5-ethoxylated *N,N*-dialkylated tryptamines which also extend to their deuterated counterparts.^[13]

The Special Issue closes with exciting research presented by Möller *et al.*^[14] who have developed and validated a screening method for the detection of major phase I and phase II metabolites of JWH-18, a synthetic cannabimimetic, often found in herbal 'Spice' smoking mixtures. High resolution mass spectrometry was successfully employed and led the authors to recommend that an emphasis can be placed on hydroxylated metabolites rather than the parent molecule.

To round off this special issue 2 articles on drug surveillance systems are offered. A review of the Drug Information and Monitoring System (DIMS) implemented in the unique drug policy setting of the Netherlands is supplied by Brunt *et al.* offering a discussion of alternate monitoring systems, drug trends and the function of the system to inform policy, prevention and harm reduction^[15]. A second article by Dunn *et al.* from the Australian perspective, highlights the strengths and weaknesses of such systems when applied to an ever evolving market where new drug classes emerge rapidly.^[16]

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