

Detection of synthetic cannabinoid JWH-018 in urine

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Abstract

Smoking mixtures containing the cannabimimetic indoles may still be available over-the-counter in several countries. Due to the high affinity of these compounds to the cannabinoid receptors, their effective dose is lower than that of the marijuana products resulting in a low concentration of the excreted metabolites accompanied by a higher psychoactive potency. Up to now the *in vivo* metabolism of the cannabimimetic indoles seems to be insufficiently investigated.

In this publication the urinary metabolites of JWH-018 are reported. Using gas and liquid chromatography combined with tandem mass spectrometry two main monohydroxylated metabolites were identified in the forensic urine samples. The main metabolites are almost completely glucuroconjugated, whereas minor ones (*N*-despentyl hydroxy-, carboxy-, dihydroxy-, and reduced di- and trihydroxy metabolites) were also present in the free fraction. The parent compound was not detected in urine at the limit of detection (*ca.* 50 ng/ml).

The main monohydroxylated metabolites can be reliably detected either by GC-MS/MS or LC-MS/MS. Our experiments have shown that single quadrupole GC-MS instrument does not provide enough selectivity. LC-MS/MS seems to be a preferable method of detection as the minor metabolites could also support the analytical finding.

References

Sobolevsky T, Prasolov I, Rodchenkov G. (2010) Detection of JWH-018 metabolites in smoking mixture post-administration urine. *Forensic Sci Int.* 200, 141-147.