

**THE MOST COMMON SYNTHETIC CANNABINOIDS IN THE LAST YEAR;
FOCUSING ON THEIR METABOLITES IN BIOFLUIDS**

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Abstract

Designer drugs are getting popular among teenagers and young adult is a serious problem. Synthetic cannabinoids (SCs) are the most rapidly growing group of designer drugs that mimic the natural cannabinoid effects. SCs have hundreds of street names (*synthetic marijuana, fake weed, Spice, K2 etc.*) and these products are sold in packages containing saturated various plants crumb. Unfortunately, these drugs can be easily overdosed due to their significantly higher binding affinities to the CB1 and CB2 cannabinoid receptors than Δ^9 -tetrahydrocannabinol as the main active ingredient of cannabis.

The consumption of SCs is verified in urine and blood samples with ultra-high performance liquid chromatography coupled to tandem mass spectrometer (UHPLC-MS/MS) technique. In most cases, it is not enough to detect only the mother compounds for confirmation of SCs consumption, due to their rapid metabolism. The most seized SCs by the police in recent months were **5F-MDMB-PICA** and **4F-MDMB-BICA**.

Our study aimed to quantitatively determine these new SCs and their main metabolites in biological samples (urine and blood) by developed targeted UHPLC-MS/MS method. In general, the concentration of the metabolites was significantly higher than the mother compound. Thus, it is necessary to identify metabolites to prove the fact of consumption.

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