

Synthetic N-methoxybenzyl („NBOMe“) phenylethylamine derivatives were developed as highly potent agonists for the research of 5-hydroxytryptamine receptors, however they have become available on the black market in the past few years. They are sought by recreational users as “legal LSD”, in worse cases the replacement is unsuspected and these substances are a cause of serious intoxication with signs of serotonin toxicity. At this moment, there is very little data available, but their low price, easy access via the internet and legal status make these substances an interesting target for recreational users and a big challenge for scientists and for the lawmakers. 2CBFly-NBOMe belongs to this group. There is no information about its recreational use for now, but that is probably only a matter of time. The aim of this study is to determine acute effects of 2CBFly-NBOMe in Wistar rats. Active substance significantly reduced locomotor activity of the animals and caused higher anxiety, it also disrupted sensorimotor gating and lowered body temperature of animals. Pharmacokinetic profile was measured only in the blood serum, the highest concentrations of 2CBFly-NBOMe were detected 30-60 minutes after the administration of hallucinogen. This paper provides first information on the effect of 2CBFly-NBOMe on behavioral and physiological parameters in an animal model.