

Emerging Designer Drug Monograph

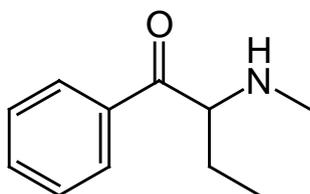
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Drug Name: Buphedrone

Synonyms: α -Methylaminobutyrophenone (MABP); 2-methylamino-1-phenylbutan-1-one.
Usually supplied as hydrochloride

Structure:



Formula: C₁₁H₁₅NO

Molecular Weight: 177.24 g/mol

Pharmacological Drug Class: Buphedrone is considered a stimulant, although its properties have not been scientifically evaluated. As the next consequent homologue of methcathinone and a positional isomer of mephedrone, buphedrone is likely to display similar pharmacological effects (1).

Metabolism: Controlled excretion studies with buphedrone have not been reported. Buphedrone is assumed to follow metabolism of cathinone and methcathinone: β -keto reduction to alcohol and N-demethylation (1). Respective products were found in the multiple random urine samples along with minor parent buphedrone after its presumed administration (2). Two pairs of diastereomeric 2-methylamino-1-phenylbutane-2-ols and 2-amino-1-phenylbutane-2-ols were abundant in free urine fraction, while parent buphedrone was either small or not detected at all.

Blood Concentrations: Buphedrone concentration 3 ng/mL was found in the blood of a drug dealer in possession of illicit drugs (3). Another case involves a driver in a fatal automobile crash. Buphedrone powder packages were found the car. Blood concentration in the deceased was 127 ng/mL (3).

Effects and Toxicity: No data on effects and toxicity of buphedrone are available in scientific literature. On the drug forums, the users report effects similar to that of mephedrone. It is ingested orally, by insufflations and smoking on foil. Compulsive re-dosing is common, often by combination of ingestion routes. There are conflicting reports on the extent of euphoria, stimulation and enhanced sociability. Effects last 2 hours.

Analysis: GC/MS detects buphedrone in urine after basic liquid/liquid extraction and TFA derivatization (2). However, buphedrone reduced metabolites appear to be better long-term indicators of the parent drug use. Two diastereomers of 2-methylamino-1-phenylbutane-2-ol and 2-amino-1-phenylbutane-2-ol form a characteristic pattern of chromatographic peaks, while less abundant parent buphedrone may or may not be detected. A pair of 2-amino-1-phenylbutane-2-ols may also derive from two other cathinones, *N*-ethylbuphedrone (NEB) and α -pyrrolidinobutiophenone (PBP).

On the Internet, reports on buphedrone availability and use first appeared in 2009 (1). The first seizure of buphedrone was reported in 2010 (4). In the US, 37 out of 34561 random urine samples (0.11%) were found positive for buphedrone and/or metabolites (2).

References:

1. Consideration of the cathinones. *Advisory Council on the Misuse of Drugs (ACMD)*
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/119173/acmd-cathinodes-report-2010.pdf
2. Uralets, V., Rana, S., Morgan, S., Ross, W. (2013) Testing for designer stimulants: metabolic profiles of 16 synthetic cathinones excreted free in human urine. *Journal of Analytical Toxicology*, (In Press)
3. Zuba, D., Adamowicz, P., Byrska, B. (2013) Detection of buphedrone in biological and non-biological materials – two case reports. *Forensic Science International*, 227, 15 - 20.
<http://www.ncbi.nlm.nih.gov/pubmed/22981959>
4. EMCDDA–Europol 2010 Annual Report on the implementation of Council Decision 2005/387/JHA. Annex 2 — New psychoactive substances reported to the EMCDDA and Europol for the first time in 2010 under the terms of Council Decision 2005/387/JHA
http://www.emcdda.europa.eu/attachements.cfm/att_133126_EN_Annex_2_List_NPAS_notified_in_2010.pdf