Emerging Designer Drug Monograph

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Drug Name: 5-APB

Synonyms: 1-(benzofuran-5-yl) propane-2-amine

Structure:

![Structure of 5-APB](image)

Formula: C₁₁H₁₃NO

Molecular Weight: 175.2

Pharmacological Drug Class: Phenylethylamine analogues; there are positional isomers named 4-APB, 6-APB, and 7-APB.

Metabolism: There are no identified metabolites.

Blood Concentrations: There are no reports on blood concentrations.

Effects and Toxicity: 5-APB and 6-APB can be bought as capsules (100 mg), pellets or powder (Psychotropiccon, 2013). It is known as Benzofury.

Dosage of 1 - 2 mg/kg body weight (50 - 120 mg) orally or nasally (Psychotropiccon, 2013: Flashback).

Effects are euphoria, empathy, color enhancement and "speeded" (Flashback), with side effects of nausea (vomiting), chews (jaw clenching) and sleep (Psychotropiccon, 2013: Flashback). Duration of effects: 3-12 hours.

No studies are currently published on the toxicity of the APB:s in humans or in animals, but because they are phenylethylamines one may assume that they exhibit psychostimulant properties similar to other phenylethylamines. Pharmacologically, phenethylamines increase the neurotransmitters dopamine, norepinephrine, and serotonin in the brain. They block both the
reuptake transporter for the monoamines (DAT for dopamine, NET for norepinephrine, and 
SERT serotonin) and increase the release of monoamines by destruction of presynaptic 
monoamine-containing vesicles.

Iversen et al. have indeed demonstrated that both 5-APB and 6-APB are potent inhibitors of 
monoamine transporters in *in vitro* binding studies. They showed that both 5-APB and 6-APB 
are potent reuptake blockers of NET and DAT, while 5-APB also blocks SERT. Their study also 
showed that 5-APB and 6-APB bind directly to the human 5-HT2B receptor as agonists. They 
also showed that 6-APB binds to alpha2c adrenalin receptors with high affinity. (Iversen et al, 
2013).

Abuse and dependence is strongly linked to the dopaminergic transmission (Schmitt and Reith, 
2010). Drugs that block NET often produces effects in the cardiovascular system, as increased 
blood pressure and heart rate (Wood et al, 2010). High doses and chronic intake is likely to cause 
cardiotoxicity.

**Analysis:** There are no methodical papers for the analysis of the APB:s in blood or urine and 
case findings are limited to qualitative data for either 5-APB or 6-APB in an intoxication case 
(Wood et al, 2012).

Stancuk et al (2013) confirmed the positional isomer identity in Internet products by synthesizing 
4- 5- 6- and 7-APB and separated them by gas chromatography as heptafluorobutyramide 
derivatives as well as by liquid chromatography. In products containing 6-APB, also 4-APB was 
identified and they concluded that this may be an artefact from the manufacturing process.

**References:**

aminopropyl)benzofuran (APB) phenyl ring positional isomers in internet purchased products. 

Neurochemical profiles of some novel psychoactive substances. *European Journal of 

to psychostimulant drugs of abuse. *Annals of the New York Academy of Sciences*, 1187, 316 – 

Lee, T., Holt, D. W., Dargan, P. I. (2010) Recreational Use of Mephedrone (4-
Methylmethcathinone, 4-MMC) with Associated Sympathomimetic Toxicity. *Journal of Medical 