Emerging Designer Drug Monograph

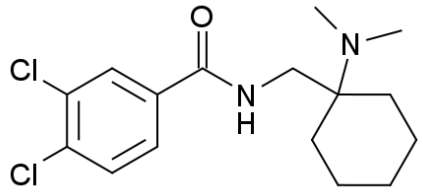
Revision Date: July, 2013

Author(s): Mikael Andersson, Robert Kronstrand

Drug Name: AH-7921

Synonyms: Doxylam, **3,4-dichloro-N-[(1-dimethylamino)cyclohexylmethyl]benzamide**

Structure:



Formula: $C_{16}H_{22}Cl_2N^2O$

Molecular Weight: 329.3

Pharmacological Drug Class: Opiod analogue.

Metabolism: N-desmethyl and N-didesmethyl metabolites have been tentatively identified in forensic cases (no reference material available).

Blood Concentrations: There are no published reports on blood concentrations. In a case report posted on the SOFT website, post mortem blood concentrations ranged from 0.03 to 0.99 µg/g.

Effects and Toxicity: Dosages: 10 -100 mg in humans (www.flashback.se).

In animals experiments, minimum oral dose for complete pain suppression by AH-7921 are 1,25 mg/kg for canine and 13,8 mg/kg for Rhesus monkey (Brittain et al, 1973).

Administration is orally and vaporized. Duration is 4 hours, with a peak after 1.5 hours.

AH-7921 acts as an agonist on the opiod µ-receptor and the potency was shown to be around 80 % of morphine (Brittain et al, 1973). Another study (side effects, activity, (ED_{50})) in mice showed that AH-7921 produced antinociceptive effects, decreased respiratory rate and decreased pulse rate and also lowered the body temperature more efficiently than morphine at same dose (Hayes and Tyers, 1983). In addition, AH-7921 suppressed abstinence syndrome during morphine withdrawal (Hayes and Tyers, 1983).

In mice, AH-7921 showed stronger respiratory depression than morphine predicting untoward (fatal) effects also in humans. AH-7921 may also have abuse potential, since it pharmacological effects are similar to those of morphine (Brittain et al, 1973).

Analysis: There are no published reports on the analysis of AH-7921 in biological specimens. AH-7921 was detected in synthetic cannabinoids products in Japan by GC-MS and LC-MS analyses (Uchiyama et al, 2013).

References:

1. Brittain, R. T., Kellt, D. N., Neat, M. L., Stables, R. (1973) Proceedings: Antinocieptive effects in N-substituted cyclohexylmethylbenzamides. *British Journal of Pharmacology*, 49(1), 158 - 159. http://www.ncbi.nlm.nih.gov/pubmed/4207044

2. Hayes, A. G., Tyers, M. B. (1983) Determination of receptors that mediate opiate side effects in the mouse. *British Journal of Pharmacology*, 79(3), 731 - 736. http://www.ncbi.nlm.nih.gov/pubmed/6317119

3. Uchiyama, N., Matsuda, S., Kawamura, M., Kikura-Hanajiri, R., Goda, Y. (2013) Two new-type cannabimimetic quinolinyl carboxylates, QUPIC and QUCHIC, two new cannabimimetic carboxamide derivates, ADB-FUBINACA and ADBICA, and five synthetic cannabinoids detected with a thiopphene derivate α-PVT and an opiod receptor agonist AH-7921 identified in illegal products. *Forensic Toxicology. doi*: 10.1007/s11419-013-0182-9 http://link.springer.com/content/pdf/10.1007%2Fs11419-013-0182-9.pdf