Emerging Designer Drug Monograph

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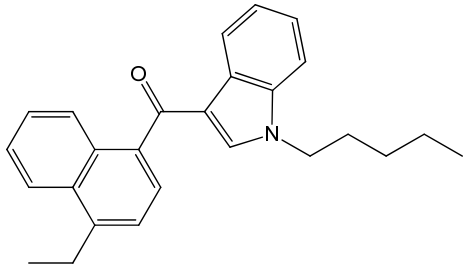
Drug Name: JWH-210

Synonyms: (4-Ethyl-1-naphthyl)-(1-pentylindol-3-yl)methanone (IUPAC allowed); (4-Ethyl-1-naphthalenyl)-(1-pentyl-3-indolyl)methanone (IUPAC CAS-like); (4-Ethylnaphthalen-1-yl)-(1-pentylindol-3-yl)methanone (IUPAC preferred; IUPAC systematic); (1-Amylindol-3-yl)-(4-ethyl-1-naphthyl)methanone (IUPAC traditional)

Structure:



Formula: $C_{26}H_{27}NO$

Molecular Weight: 369.5

Pharmacological Drug Class: JWH-210 is an analgesic chemical from the naphthoylindole family and acts as a potent cannabinoid agonist at both the CB_1 and CB_2 receptors. It has K_i values of 0.46 nM at CB_1 and 0.69 nM at CB_2. Of the first generation synthetic cannabinoids, it is one of the most potent 4-substituted naphthoyl derivatives in the naphthoylindole series, having a higher binding affinity at CB_1 than JWH-122, JWH-182, and JWH-081 (1).

Metabolism: Known metabolites of JWH-210 are JWH-210 N-pentanoic acid metabolite (detectable in urine), JWH-210 N-(4-hydroxypentyl) metabolite (detectable in urine and serum), JWH-210 N-(5-hydroxypentyl) metabolite (detectable in urine and serum), and JWH-210 5 hydroxyindole metabolite (detectable in urine and serum). Hydroxylations on the napthoyl ring have also been reported (2).

Blood Concentrations: There is little per-reviews information on blood concentrations of JWH-018. Two case reports by Yeakel et al. and Musshoff et al reported median blood concentrations of 0.10 ng/mL in 3 subjects and 3 ng/mL in 5 subjects, respectively. Other synthetic cannabinoids were also present in all 8 cases (3, 4).

Effects and Toxicity: User reports JWH-210 can be smoked after being sprayed on a plant material, much like cannabis. Effects, start within 2-5 minutes of injestion. (see www.erowid.org). Little is known about effects due solely to JWH-210 ingestion, but common effects from synthetic cannabinoids are alteration of mood and perception, panic attacks/agitation, cannabis-like high, and mild hallucinogens (visual and auditory). Physical effects can be seen as red eyes, dry mouth, vomiting, and convulsions. Long term use, or high doses, can cause acute psychotic episodes and recurrent paranoid hallucinations; including loss of consciousness and confusion, unresponsiveness, and seizures. Some

lethal effects attributed to synthetic cannabinoid use are coma, suicides caused by hallucinogenic effects, coronary ischemic and acute kidney failure in 16 cases throughout the US (3-7).
Research on the safety of synthetic cannabis is now becoming available. Initial studies are focused on the role of synthetic cannabis in psychosis. Synthetic cannabis may precipitate psychosis and in some cases it may be prolonged. Some studies suggest that synthetic cannabinoid intoxication is associated with acute psychosis, worsening of previously stable psychotic disorders, and it may trigger a chronic (long-term) psychotic disorder among vulnerable individuals such as those with a family history of mental illness. For synthetic cannabinoids, drug recognition experts (DREs) have noticed the following symptoms: no HGN/VGN, Lack of Convergence Present, Pupil size varies (constricted/normal/dilated), normal reaction to light, increased pulse rate, increased blood pressure, and increased body temperature. Most DREs classified the drug that the person was under the influence of as Cannabis (3, 4).

Analysis: JWH-210 can be extracted from blood, urine, oral fluid or serum using a liquid-liquid or solid phase extraction along with other synthetic cannabinoids (8-10). It can be analyzed by MRM on a LCMSMS or in scan or SIM mode on a GCMS (8-11). SWGDRUG outlines instrument parameters for GC-MS analysis.

References:

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https://www.caymanchem.com/app/template/Product.vm/catalog/10644

Forendex
http://forendex.southernforensic.org/index.php/detail/index/1104

Drug Forum
http://www.drugs-forum.com/forum/showthread.php?t=140647

JWH-210 Erowid
http://www.erowid.org/experiences/subs/exp_JWH210.shtml