Emerging Designer Drug Monograph

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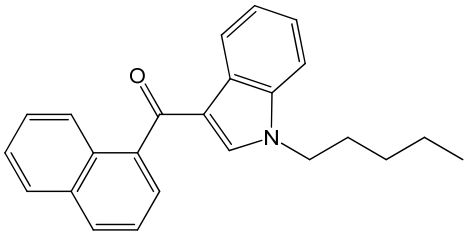
Drug Name: JWH-018

Synonyms: AM-678, (1-pentyl-1H-indol-3-yl)-1-naphthalenyl-methanone

CAS#: 209414-07-3

Structure:



Formula: $C_{24}H_{23}NO$

Molecular Weight: 341.5

Pharmacological Drug Class: Cannabinoid, naphthoylalkylindole class. JWH-018 is a potent nonselective full agonist for the cannabinoid receptor. Affinities are with a k_i of 9.00+/-5.00nM at CB_1 and 2.94+/-2.65nM at CB_2.

Metabolism: Numerous metabolism products have been identified (1-17). These include: JWH-018 4-Hydroxypentyl Glucuronide, JWH-018 5-Hydroxypentyl Glucuronide, JWH-018 N-Pentanoic Acid, JWH-018 N-Propionic Acid, and JWH-073 N-Butanoic Acid. The two major metabolites include a monohydroxylated omega minus one carbon atom of the alkyl side chain and a monohydroxylated omega (terminal) position (1). These were found in 6 users of the drug at concentrations of 6-50 ug/L. Human metabolites show hydroxylated metabolites with extensive conjugation with glucuronide.

Blood Concentrations: Teske et al. reported that serum levels in subjects smoking herbal products containing JWH-018 rapidly reached 10 ug/L and dropped to 1 ug/L within 3 hours of smoking (18). Logan and Yeakel reported blood concentrations of 0.1-1 ug/L in specimens from DUID cases (19).

Effects and Toxicity: JWH-018 has been reported to cause agitation, anxiety, seizures, convulsions and paranoia (26-48). Withdrawal symptoms are similar to cannabis dependence. There has been a report of "drug toxicity and organ failure" leading to death caused by JWH-018 (26). Psychotic relapses and anxiety symptoms have been reported in one study (27).

Analysis: There have been many reports of the determination of this drug and its metabolites in many matrices including herbal incense (49-67), oral fluid (68-72), hair (73-77), and urine (78-88). This is a simple neutral drug, with a low molecular weight. Analytical data are available in the references cited in the Forendex database and on SWGDRUG monographs.

References:

Metabolism:

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Hair

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