



JWH-018

1-Pentyl-3-(1-naphthoyl)indole

[Synthetic Cannabinoid in Herbal Products]

October 2019

Introduction:

JWH-018 is a synthetic cannabinoid agonist without the classical cannabinoid chemical structure. It was used in scientific research as a tool to study the cannabinoid system. JWH-018 has been identified in herbal incense mixtures, with names including "Spice", "K2", and others, sold via the Internet, gas stations, convenience stores, tobacco shops and head shops.

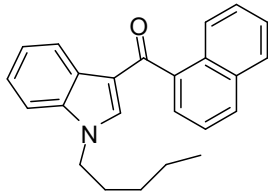
Licit Uses:

JWH-018 was developed and evaluated in basic scientific research to study structure activity relationships related to the cannabinoid receptors.

Chemistry:

JWH-018 (1-pentyl-3-(1-naphthoyl)indole or naphthalen-1-yl-(1-pentyl-1*H*-indol-3-yl)methanone) [Chemical Abstract Service (CAS) Registry Number 209414-07-3] has been identified as a substance that has some pharmacological similarities to the primary psychoactive constituent in marijuana (*Cannabis sativa* L.), Δ^9 -THC.

The chemical structure of JWH-018 is shown below.



Pharmacology:

Behavioral pharmacology studies show that JWH-018 has Δ^9 -THC-like activity in animals. In mice, it decreases overall activity, produces analgesia, decreases body temperature and produces catalepsy. Together, these four effects are used by scientists to predict Δ^9 -THC-like psychoactivity in humans. JWH-018's activity in all four tests suggests that it is likely to have THC-like psychoactive effects in humans.

In drug discrimination studies in rats, JWH-018 generalized to Δ^9 -THC, i.e. produced subjective effects similar to those of Δ^9 -THC.

In vitro studies show that JWH-018 binds to the brain cannabinoid receptor CB1 with increased affinity relative to Δ^9 -THC and displays agonist properties in functional assays, suggesting that it would have the same effects as Δ^9 -THC in vivo.

Illicit Uses:

JWH-018 substance has no known legitimate use outside of research and is purposely spiked on plant material. It has been identified in numerous herbal incense products including "Spice", "K2", and other similar products which are smoked for their psychoactive effects.

User Population:

The primary abusers are youth purchasing these substances from Internet websites, gas stations, convenience stores, tobacco shops and head shops.

Illicit Distribution:

The System to Retrieve Information from Drug Evidence (STRIDE)/STARLiMS is a federal database for the seized drugs analyzed by DEA forensic laboratories and the National Forensic Laboratory Information System (NFLIS) is a system that collects drug analysis information from state, local, and federal forensic laboratories. JWH-018 exhibits identified by forensic laboratories increased from 21 in 2009 to 3,275 in 2011. In 2012, the number of JWH-018 identified exhibits decreased to 1,117 and 85 and 44 drug exhibits in 2015 and 2016, respectively. In 2017, the number of drug exhibits slightly increased to 106 for JWH-018; however, have decreased recently to 13 drug exhibits for 2018 and preliminarily to 9 drug exhibits for 2019.

Control Status:

JWH-018 (including its salts, isomers, and salts of isomers) is controlled in schedule I of the Controlled Substances Act.

Comments and additional information are welcomed by the Drug and Chemical Evaluation Section; Fax 571-362-4250, Telephone 571-362-3249, or E-mail DPE@usdoj.gov.