

PB-22 and 5F-PB-22

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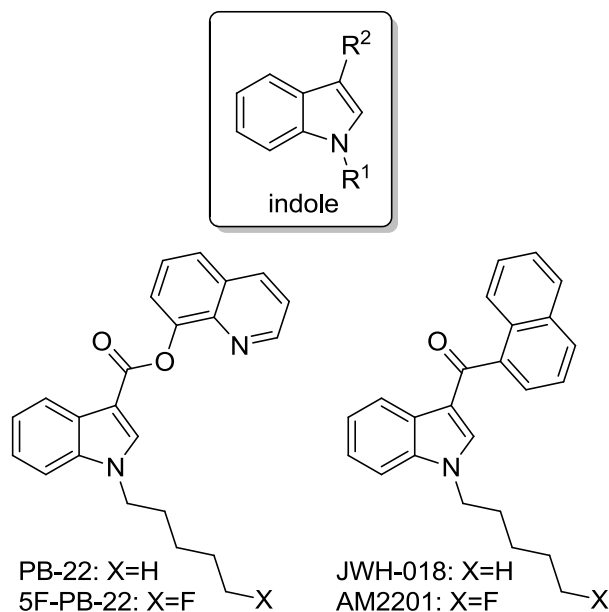
Introduction:

PB-22 and 5F-PB-22 are two synthetic cannabinoids recently encountered on the designer drug market. Both PB-22 and 5F-PB-22 have been found laced on plant material and marketed under the guise of herbal incense products. PB-22 and 5F-PB-22 are likely to share effects with two schedule I substances also encountered laced on plant material, JWH-018 and AM2201.

In response to State and Federal control of JWH-018 and other synthetic cannabinoids, a transition to new synthetic cannabinoids laced on plant material has been observed.

Chemistry:

The chemical structures for PB-22¹, 5F-PB-22² and the Schedule I substances JWH-018 and AM2201 are shown below.



PB-22, 5F-PB-22, JWH-018, and AM2201 belong to a structural class of substances sharing a core indole structure. This core structure (scaffold) is substituted at the 1- and 3-positions (R¹ and R², respectively) to give rise to these substances.

Pharmacology:

Behavioral pharmacology studies show that JWH-018 has activity in animals similar to that of Δ9-THC but with higher affinity and efficacy than Δ9-THC, suggesting that it

would have the same effects as Δ9-THC *in vivo*. Based on structure-activity relationship studies, PB-22 and 5F-PB-22 are expected to have similar effects.

There are no published studies on the safety of PB-22 or 5F-PB-22 for human use.

Licit Uses:

PB-22 and 5F-PB-22 were not previously reported prior to their appearance on the designer drug market. There are no commercial or medical uses for these substances.

Illicit Uses:

PB-22 and 5F-PB-22 have been encountered in numerous herbal products that are smoked for their psychoactive effects.

User Population:

Information on user population in the U.S. is limited, and includes information from drug user internet forums. PB-22 and 5F-PB-22 abuse is not monitored by any national drug abuse surveys. Poison control centers continue to report adverse health effects in response to the abuse of herbal incense products and this abuse is both a public health and safety concern.

Illicit Distribution:

The System to Retrieve Information from Drug Evidence (STRIDE), a federal database for the seized drugs analyzed by DEA forensic laboratories, and the National Forensic Laboratory Information System (NFLIS), a system that collects drug analysis information from state and local forensic laboratories contain 1,529 reports for PB-22 and 1,462 reports for 5F-PB-22 from January through December 2013. Bulk quantities and plant material (herbal incense products) laced with PB-22 and 5F-PB-22 have been encountered. Medical examiner and postmortem toxicology reports demonstrate the involvement of 5F-PB-22 in the death of at least five individuals.

Control Status

PB-22 and 5F-PB-22 are schedule I controlled substances under the Federal Controlled Substances Act.

Comments and additional information are welcomed by the Drug and Chemical Evaluation Section; Fax 202-353-1263, telephone 202-307-7183, or E-mail ODE@usdoj.gov.

¹Chemical name: quinolin-8-yl 1-pentyl-1*H*-indole-3-carboxylate

²Chemical name: quinolin-8-yl 1-(5-fluoropentyl)-1*H*-indole-3-carboxylate