

4F-MDMB-BINACA (4F-MDMB-BUTINACA)

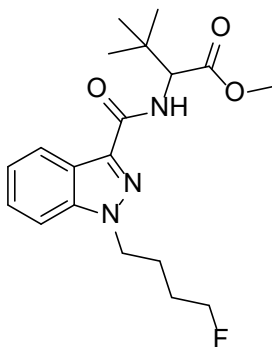
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Introduction:

In recent years, various products containing synthetic cannabinoids (e.g., JWH-018, UR-144, AKB48, etc.) laced on plant material have been encountered by law enforcement and are smoked for their psychoactive effects. In response to Federal control of these synthetic cannabinoids, a transition to new synthetic cannabinoids laced on plant material has been observed. 4F-MDMB-BINACA is a synthetic cannabinoid that has been encountered on the designer drug market and has been found laced on plant material and marketed under the guise of herbal incense products.

Chemistry:

The chemical structure for 4F-MDMB-BINACA¹ is shown below.



4F-MDMB-BINACA is classified as an indazole. 4F-MDMB-BINACA is based on an indazole core structure, where the 1- and 3-positions of the indazole ring system are substituted. The 1-position of 4F-MDMB-BINACA is substituted with a linear four carbon chain terminated with a fluorine (F) atom. The 3-position is substituted with an amide linker, and the nitrogen (N) atom of this linker is further substituted with a 1-methoxy-3,3-dimethyl-1-oxobutan-2-yl group.

Pharmacology:

Data from preclinical studies show that 4F-MDMB-BINACA binds to and acts as an agonist at the CB1

¹ Chemical name: Methyl 2-(1-(4-fluorobutyl)-1H-indazole-3-carboxamido)-3,3-dimethylbutanoate

receptor. In drug discrimination studies in rats, 4F-MDMB-BINACA generalized to delta-9-tetrahydrocannabinol (THC), i.e. produced subjective effects similar to those of THC.

There are no published studies on the safety of 4F-MDMB-BINACA for human use.

Licit Uses:

There are no commercial or medical uses for 4F-MDMB-BINACA.

Illicit Uses:

4F-MDMB-BINACA has been encountered in numerous synthetic cannabinoid products that are smoked for their psychoactive effects.

User Population:

Information on user population in the U.S. is limited. 4F-MDMB-BINACA 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 synthetic cannabinoids and this abuse is both a public health and safety concern. Serious adverse effects including death have been reported following the use of 4F-MDMB-BINACA.

Illicit Distribution:

According to DEA's National Forensic Laboratory Information System (NFLIS) Drug database, which collects scientifically verified data on drug items and cases submitted to and analyzed by federal, state, and local forensic laboratories, 95 reports of 4F-MDMB-BINACA were submitted in 2018. The number of 4F-MDMB-BINACA reports submitted jumped to 2,288 in 2019 before declining to 1,094 in 2020 and 306 in 2021.

Control Status

4F-MDMB-BINACA is a Schedule I controlled substance under the Controlled Substances Act (CSA).

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@dea.gov.