

## EMB-FUBINACA (AEB-FUBINACA; FUB-AEB)

### Introduction:

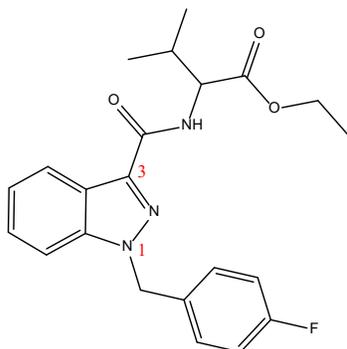
In recent years, various products containing synthetic cannabinoids (e.g., JWH-018, UR-144, AKB48) laced onto plant material have been encountered by law enforcement and are smoked for their psychoactive effects. In response to federal control of these synthetic cannabinoids, a transition to new synthetic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

### Licit Uses:

EMB-FUBINACA has no commercial or medical uses.

### Chemistry:

EMB-FUBINACA<sup>1</sup> is classified as an indazole. EMB-FUBINACA is based on an indazole core structure, where the 1- and 3-positions of the indazole ring system are substituted. The 1-position of EMB-FUBINACA is substituted with a 4-fluorobenzyl group. The 3-position is substituted with an amide linker, and the nitrogen atom (N) of this linker is further substituted with a 1-ethoxy-3-methyl-1-oxobutan-2-yl group. The chemical structure for EMB-FUBINACA is shown below:



### Pharmacology:

Data from preclinical studies show that EMB-FUBINACA binds to and acts as an agonist at the CB1 receptor. In drug discrimination studies in rats, EMB-FUBINACA generalized to  $\Delta$ 9-tetrahydrocannabinol [THC] (i.e., produced subjective effects similar to those of  $\Delta$ 9-THC).

There are no published studies on the safety of EMB-FUBINACA for human use.

### Illicit Uses:

EMB-FUBINACA has been encountered in numerous synthetic cannabinoid products that are smoked for their psychoactive effects.

### User Population:

Information on user population in the United States is limited. EMB-FUBINACA 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 have been reported following the use of EMB-FUBINACA.

### Illicit Distribution:

The Drug Enforcement Administration's National Forensic Laboratory Information System (NFLIS) Drug database collects scientifically verified data on drug items and cases submitted to and analyzed by participating federal, state, and local forensic drug laboratories. NFLIS-Drug received over 200 reports of EMB-FUBINACA since its first report in 2015.

### Control Status:

EMB-FUBINACA is a positional isomer of MDMB-FUBINACA (methyl 2-(1-(4-fluorobenzyl)-1H-indazole-3-carboxamido)-3,3-dimethylbutanoate), as defined by 21 CFR § 1300.01, and is therefore controlled in schedule I of the Controlled Substances Act, as of April 10, 2017.

Comments and additional information are welcomed by the Drug and Chemical Evaluation Section; Fax 571-362-4250, Telephone 571-362-3249, or Email [DPE@dea.gov](mailto:DPE@dea.gov).

<sup>1</sup> Chemical name: ethyl 2-(1-(4-fluorobenzyl)-1H-indazole-3-carboxamido)-3-methylbutanoate