

Emerging Designer Drug Monograph

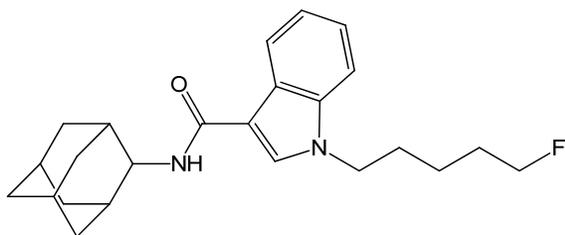
Revision Date: November 17, 2014

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Drug Name: STS-135

Synonyms: N-(adamantan-1-yl)-1-(5-fluoropentyl)-H-indole-3-carboxamide, 5-fluoro-APICA, 5F-APICA, 5F-2NE1

Structure:



Formula: C₂₄H₃₁FN₂O

Molecular Weight: 382.5

Pharmacological Drug Class: Synthetic cannabinoid

Metabolism: There is only one study evaluating *in vitro* STS-135 metabolism from human hepatocytes (1); no clinical studies document human STS-135 *in vivo*. Detected metabolites include mono-, di-, or trihydroxylated metabolites, with and without ketone formation, dealkylation, and oxidative defluorination of N-fluoropentyl sidechain with possible oxidation to carboxylic acid; most hydroxylation and ketone formation occur on the adamantane ring, and less commonly on the N-pentyl side chain. Some metabolites can be further metabolized to glucuronides. Primary metabolites included the monohydroxy STS-135 and the dihydroxy STS-135, both hydroxylated on the adamantane system.

Blood Concentrations: There are no published reports on blood concentrations.

Effects and Toxicity: STS-135 is typically smoked or vaporized. According to online drug forums, typical doses are approximately 1 mg in humans (caution is advised when examining doses reported in drug forums as it is not possible to ensure purity or identity of the compound being smoked) (2). In herbal products, STS-135 concentrations were 49±2 and 47±4 mg/g from two packages of commercial product (purchased at the same time), which also contained AM-2201, MAM-2201, and UR-144, XLR-11 (3).

There are no case reports documenting the effects of STS-135, nor are there any reports documenting cannabinoid receptor binding affinity.

Analysis: There are no published reports on the analysis of STS-135 in biological specimens. STS-135 was detected in herbal mixtures in Germany in the Fall of 2012 with GC-EI-MS and LC-ESI-MS/MS (3).

References:

1. Gandhi A.S., Wohlfarth A., Zhu M., Pang S. Castaneto M., Scheidweiler K.B., Huestis M.A. (2014) High-resolution mass spectrometric metabolite profiling of a novel synthetic designer drug, *N*-(adamantan-1-yl)-1-(5-fluoropentyl)-1*H*-indole-3-carboxamine (STS-135), using cryopreserved human hepatocyte and assessment of metabolic stability with human liver microsomes. *Drug Testing and Analysis*, doi:10.1002/dta.1662.
2. STS-135 Drug Info. Drugs-Forum. <http://www.drugs-forum.com/forum/showthread.php?t=181964>
3. Langer N., Lindigkeit R., Schiebel H.M., Ernst L., Beuerle T. (2014) Identification and quantification of synthetic cannabinoids in 'spice-like' herbal mixtures: A snapshot of the German situation in the autumn of 2012. *Drug Testing and Analysis*, **6**, 59-71. <http://www.ncbi.nlm.nih.gov/pubmed/23723183>

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<http://www.swgdrug.org/Monographs/STS-135.pdf>

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<http://forendex.southernforensic.org/index.php/detail/index/1217>