

# A Drug 85 Times More Potent than THC Caused 'Zombie Outbreak' in New York City



By Alex Berezow, PhD — January 21, 2017



Credit: NEJM

For several hours on July 12, 2016, a group of 33 people in New York City were in a "zombie-like" state: staring blankly, moving and responding to medics slowly, and occasionally groaning. This bizarre spectacle was the result of a very bad trip on a synthetic cannabinoid that Reddit users have called "out-of-this-world potent."

Synthetic cannabinoids are used by researchers to study the nervous system, but they are now produced illegally and sold on the street. Though smoked like cannabis, synthetic cannabinoids share little in common with it or its active ingredient, THC. Indeed, the synthetic drugs are much more dangerous because some have killed people.

To determine the cause of the NYC case, researchers chemically analyzed the contents of the packaging (shown in the upper left image), as well as blood and urine samples from eight of the victims. They determined that the group had been intoxicated with a synthetic cannabinoid called AMB-FUBINACA, which is 85 times more potent than THC.

In vitro studies have revealed that the concentration at which this drug elicits half of the maximum response is tiny, merely 0.77 ng/mL (parts per billion, ppb). Seven of the patients averaged roughly 300 times that concentration in their blood\*.

Though not nearly as problematic as the ongoing heroin/fentanyl epidemic, the danger posed by synthetic cannabinoids has captured the attention of both law enforcement and public health officials.

*\*To be specific, the researchers detected a metabolic product in their blood, not the original compound.*

**Source** <sup>[1]</sup>: Axel J. Adams, Samuel D. Banister, Lisandro Irizarry, Jordan Trecki, Michael Schwartz, Roy Gerona. "'Zombie' Outbreak Caused by the Synthetic Cannabinoid AMB-FUBINACA in New York." *N Engl J Med* 376: 235-242. 19-January-2017. DOI: 10.1056/NEJMoa1610300

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[1] <http://www.nejm.org/doi/full/10.1056/NEJMoa1610300>