

25I-NBOMe, 25C-NBOMe, and 25B-NBOMe (Street names: N-bomb, Smiles, 25I, 25C, 25B)

February 2020

Introduction:

25I-NBOMe, 25C-NBOMe, and 25B-NBOMe are three synthetic substances recently encountered on the designer drug market. These substances are sold online and through illicit channels, commonly purported to be illicit hallucinogens such as LSD. 25I-NBOMe, 25C-NBOMe, and 25B-NBOMe target the same 5-HT_{2A} (serotonin) receptor as many other hallucinogens, including Schedule I hallucinogens like LSD, 2C-I, 2C-C, and 2C-B.

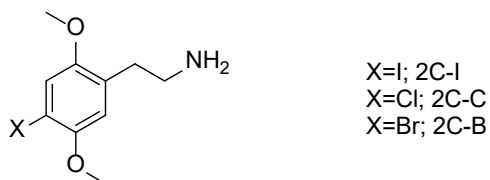
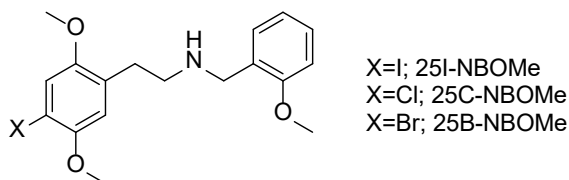
These substances have been encountered as powders, liquid solutions, laced on edible items, and soaked onto blotter papers.

Licit Uses:

25I-NBOMe, 25C-NBOMe, and 25B-NBOMe were previously investigated as research tools to probe the location of 5-HT_{2A} receptors in the central nervous system of nonhuman mammals.

Chemistry:

The chemical structures for 25I-NBOMe¹, 25C-NBOMe², and 25B-NBOMe³ and the Schedule I substances 2C-I, 2C-C, and 2C-B are shown below. The two set of substances differ by the addition of a 2-methoxybenzyl group on the nitrogen (NBOMe).



These six compounds belong to a structural class of substances sharing a core phenethylamine structure. When the phenyl of the phenethylamine is substituted with methoxy (-OCH₃) groups at the 2- and 5-positions, they are known as 2C compounds, denoting the presence of two carbon groups between the phenyl and amine.

Pharmacology:

¹Name: 2-(4-iodo-2,5-dimethoxyphenyl)-N-(2-methoxybenzyl)ethanamine

²Name: 2-(4-chloro-2,5-dimethoxyphenyl)-N-(2-methoxybenzyl)ethanamine

³Name: 2-(4-bromo-2,5-dimethoxyphenyl)-N-(2-methoxybenzyl)ethanamine

25I-NBOMe, 25C-NBOMe, and 25B-NBOMe, like 2C-I, 2C-C, and 2C-B, selectively bind and show activity at the 5-HT_{2A} (serotonin) receptor in the central nervous system. The addition of the NBOMe group has been shown to substantially enhance the potency of these compounds.

There are no published studies on the safety of 25I-NBOMe, 25C-NBOMe, and 25B-NBOMe for human use. Available data suggests that extremely small amounts of these substances can cause seizures, cardiac and respiratory arrest, and death.

Illicit Uses:

25I-NBOMe, 25C-NBOMe, and 25B-NBOMe are abused by a variety of delivery methods for their hallucinogenic properties. Some suppliers may purport or mistake these substances to be LSD or other Schedule I hallucinogens.

User Population:

Information on user population in the U.S. is limited, and includes information from law enforcement encounters, emergency departments, medical examiners, and drug user internet forums. Emergency departments continue to publish cases of severe toxicity due to these substances. Reports from medical examiners and toxicology labs link some combination of 25I-NBOMe, 25C-NBOMe, and 25B-NBOMe to the death of at least 14 individuals, aged 15 to 29 years, in the U.S. between March 2012 and April 2013.

Illicit Distribution:

The System to Retrieve Information from Drug Evidence (STRIDE)/STARLiMS, 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 federal, state, and local forensic laboratories. After being controlled as schedule I substances, within NFLIS for 2017 and preliminary for 2018, respectively, seizure drug reports reduced from 420 reports in 2016 to 137 and 49 reports for 25I-NBOMe, 150 drug reports in 2016 to 51 and 21 reports for 25C-NBOMe, and 66 reports in 2016 to 32 and 8 reports for 25B-NBOMe. Bulk quantities of powdered material and blotter paper laced with some combination of 25I-NBOMe, 25C-NBOMe, and 25B-NBOMe have been encountered.

Control Status

25I-NBOMe, 25C-NBOMe, and 25B-NBOMe are schedule I substances 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@usdoj.gov.