

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

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 serotonin (5-HT) receptor subtype (5-HT_{2A}) as many other hallucinogens, including schedule I hallucinogens like LSD, 2C-I, 2C-C, and 2C-B.

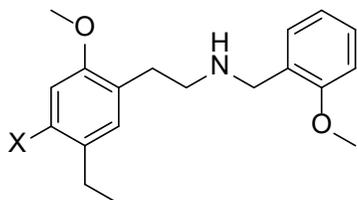
These substances have been encountered as powders, liquid solutions, laced on edible items, and soaked onto blotter papers.

Licit Uses:

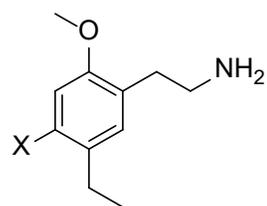
25I-NBOMe, 25C-NBOMe, and 25B-NBOMe were previously investigated as research tools to probe the location of serotonin receptors, particularly the 5-HT_{2A} receptors in the central nervous system of nonhuman mammals.

Chemistry:

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



X = I; 25I-NBOMe
X = Cl; 25C-NBOMe
X = Br; 25B-NBOMe



X = I; 2C-I
X = Cl; 2C-C
X = Br; 2C-B

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:

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} 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 suggest 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 through 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 United States 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 deaths.

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 35 reports of 25I-NBOMe, 25C-NBOMe, or 25B-NBOMe in 2021, 12 in 2022, 6 in 2023, and 4 in 2024 (reports still pending). Reports of 25I-NBOMe, 25C-NBOMe, and 25B-NBOMe to NFLIS-Drug peaked in 2014 with 1,968 reports.

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 controlled in schedule I of the Controlled Substances Act.

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

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

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