

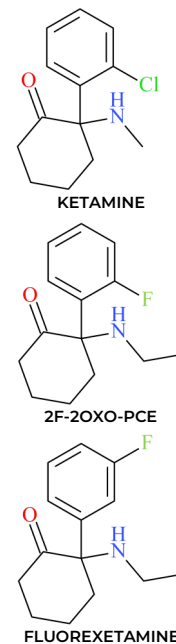
# 2F-2OXO-PCE — A NEW SYNTHETIC HALLUCINOGEN IDENTIFIED IN RECREATIONAL DRUG MARKETS ACROSS NORTH AMERICA

**PURPOSE:** The objective of this announcement is to notify public health and safety, law enforcement, first responders, clinicians, medical examiners and coroners, forensic and clinical laboratory personnel, and all other related communities about new information surrounding the emergent novel synthetic hallucinogen **2F-2oxo-PCE** (also referred to as “2-fluoro DCNEK”, “2-FXE”, and “CanKet”).

**BACKGROUND:** Synthetic hallucinogens (typically subcategorized as analogues of ketamine, PCP, and LSD) are chemically manufactured drugs that act on the serotonin (5-HT<sub>2A</sub>) or N-methyl-D-aspartate (NMDA) receptors in the brain. Synthetic hallucinogens are often substituted for traditional hallucinogens and distributed as powders, capsules, or tablets. Traditional hallucinogens in the arylcyclohexamine subclass (i.e., analogues of PCP or ketamine) exhibit anesthetic and dissociative effects, which can lead to significant adverse reactions when these drugs are consumed recreationally. In the United States (U.S.), synthetic hallucinogens have been associated with severe adverse effects such as hyperthermia, dehydration, seizures, hallucinations, serotonin syndrome, and cardiac symptoms, potentially resulting in death.

**SUMMARY:** 2F-2oxo-PCE is a novel synthetic hallucinogen that bears structural resemblance to ketamine and previously encountered novel dissociatives (e.g., **hydroxetamine**, **MeO-PCE**, and **HO-PCE**). 2F-2oxo-PCE is a positional isomer of **fluorexetamine** (also known as FXE or 3F-2oxo-PCE). Ketamine is regulated by the U.S. Drug Enforcement Administration (DEA) as a Schedule III drug under the Controlled Substances Act; however, neither 2F-2oxo-PCE nor fluorexetamine are currently scheduled substances. There is limited pharmacological information for 2F-2oxo-PCE; however, it is understood that 2F-2oxo-PCE is an active drug and it is hypothesized to act similarly to ketamine *in vivo* producing dissociative effects.

2F-2oxo-PCE was first reported in early 2022 by the Australian drug checking service CanTEST. Scientists in Canberra, Australia, first referred to the novel, unknown ketamine-like drug as “CanKet” before confirming its structure. Later that year, in December 2022, **CFSRE's NPS Discovery** reported our first case involving an indiscriminate isomer of “fluorexetamine” by LC-QTOF-MS analysis only. As of May 2024, 2F-2oxo-PCE has now been identified in more than 20 drug materials and 35 toxicology specimens. More than 60% of the drug materials containing 2F-2oxo-PCE also contained opioids, primarily fentanyl. Xylazine, NPS benzodiazepines, and nitazene analogues were common co-occurrences alongside 2F-2oxo-PCE. Cases originated from at least nine states or provinces across the U.S. and Canada. In five postmortem cases, ages ranged from approx. 20 to 40 years. The toxicity of 2F-2oxo-PCE has not been formally examined but recent associations with intoxication and death lead professionals to believe that this drug has the potential to cause harm and is of high public health concern, when mixed with other drugs or when consumed alone at high doses.



## 2F-2OXO-PCE POSITIVITY FROM Q1 2022 TO Q1 2024



## DRUG MATERIALS CONTAINING 2F-2OXO-PCE

SUSPECTED CONTENTS	QUALITATIVE RESULTS (RELATIVE PARTS)
“Heroin”	Bromazolam (1p), Fentanyl (0.6p), Flubromazepam (0.1p), <b>2F-2oxo-PCE (0.1p)</b> , Heroin (0.1p), <i>N</i> -Desethyl Isotonitazene (trace), Procaine (2.4p), Xylazine (0.9p), Caffeine (0.3p), 4-ANPP (0.1p), Phenethyl-4-ANPP (trace)
Unknown	Fentanyl (1p), <b>2F-2oxo-PCE (0.1p)</b> , <i>para</i> -Fluorofentanyl (trace), 4-ANPP (0.1p)
“Fluorexetamine”	<b>2F-2oxo-PCE (1p)</b> , Ketamine (0.1p), Methamphetamine (trace), Cocaine (trace)
“Fentanyl”	Fentanyl (1p), <b>2F-2oxo-PCE (0.2p)</b> , <i>para</i> -Fluorofentanyl (trace), Xylazine (30p), Caffeine (2.1p), Procaine (0.8p), 4-ANPP (0.3p), Lidocaine (0.1p), Quinine (trace)
“Dope”	<b>2F-2oxo-PCE (1p)</b> , Bromazolam (0.4p), Fentanyl (0.2p), Tiletamine (0.2p), Xylazine (85p), Phenacetin (2.6p), Caffeine (0.2p), 4-ANPP (0.1p)
Unknown	<b>2F-2oxo-PCE (1p)</b> , Methamphetamine (0.1p), Xylazine (0.7p), <i>N</i> -Pyrrolidino Protonitazene (trace), Protonitazene (trace)
“K2” (Paper Strips)	MDMB-4en-PINACA (1p), AB-CHMINACA (0.8p), <b>2F-2oxo-PCE (0.2p)</b> , ADB-4en-PINACA (0.1p), Metonitazene (trace), Fentanyl (trace)

## TOXICOLOGY SPECIMENS CONTAINING 2F-2OXO-PCE

SAMPLE TYPE	QUALITATIVE RESULTS
Iliac Blood	Methamphetamine, <b>2F-2oxo-PCE</b> , Ketamine, Norketamine, <i>N</i> -Desethyl Etionitazene
Blood	<b>2F-2oxo-PCE</b> , Ketamine, Norketamine, 7-Aminoclonazepam
Heart Blood	<i>N</i> -Ethyl Deschloroketamine, <b>2F-2oxo-PCE</b> , Bromazolam, <i>N</i> -Desmethyl Loperamide, <i>N,N</i> -Didesmethyl Loperamide
Femoral Blood	Acetaminophen, Phenacetin, Xylazine, 4-Hydroxy Xylazine, <b>2F-2oxo-PCE</b> , Ketamine, Norketamine, Cocaine, Benzoylcgonine, Norcocaine, Cocaethylene, Ecgonine Methyl Ester, Naloxone, Flubromazepam, 3-Hydroxy Flubromazepam, Fentanyl, Norfentanyl, 4-ANPP, <i>para</i> -Fluorofentanyl, Quetiapine
Femoral Blood	Acetaminophen, <b>2F-2oxo-PCE</b> , Doxylamine, Sertraline, Naloxone, Trazodone, Hydroxyzine, Isotonitazene, <i>N</i> -Desethyl Isotonitazene, 5-Aminoisotonitazene
Blood	Methamphetamine, Amphetamine, <b>2F-2oxo PCE</b> , 7-Amino Clonazepam, Cocaine, Benzoylcgonine, Norcocaine, Fentanyl, <i>N</i> -Pyrrolidino Protonitazene
Blood	<b>2F-2oxo PCE</b> , <i>N,N</i> -Dimethylpentylone, Metonitazene

## GEOGRAPHICAL DISTRIBUTION OF 2F-2OXO-PCE CASES

