

APPLICATION NOTE

TARGETING A NEW CLASS OF NITAZENES WITH HANDHELD RAMAN ANALYSIS

- Library with up-to-date threat compounds
- Accepted as SWGDRUG Technique
- Fast analysis time



Nitazenes, also known as “Frankenstein opioids,” are a rapidly emerging class of opioids that are up to 40 times more potent than fentanyl. This leads to an increased risk of overdoses and fatalities, especially when combined with fentanyl or heroin. Due to their high potency and increased overdose risk, the U.S. Department of Drug Administration (DEA) has listed nitazenes as a schedule 1 drug.

Similar to other designer drugs, the nitazene subclass of Non-Psychoactive Substances (NPS) opioids change rapidly. Some newer nitazenes of special concern include metonitazene, which first appeared in 2020 and is responsible for a number fatalities. Other nitazenes of concern that are increasing in popularity include isotonitazene and etonitazene.

Isonitazene - an Emerging Class of Nitazenes

Isonitazane, also referred to as “ISO,” is another rapidly emerging opioid that has resulted in fatalities. ISO is typically mixed with other drugs, such as fentanyl or heroin, to make them more potent and consequently more deadly to users. When mixed with counterfeit pills and falsely labeled as a pharmaceutical drug (such as Oxycodone), it can lead to overdoses in unsuspecting users who are not even aware they are ingesting this chemical.

Presumptive ID of Nitazenes

Raman spectroscopy is an acceptable analytical technique under the Scientific Working Group for the Analysis of Seized Drugs (SWGDRUG) which defines methods for the analysis and identification of seized drugs. A benefit of using Raman technology is the ability to scan through translucent packaging, keeping the user safe from exposure of a potentially harmful chemical. Handheld Raman analyzers have made the use of this technology in the field much more accessible to law enforcement, border patrol, as well as public health departments. The Rigaku CQL™ Series of handheld Raman analyzers contain an extensive library of various classes of nitazenes, which can be expanded to include newer analogs, by the user or through regular software updates. Added features to the handheld device include an on-board camera to capture pictorial evidence to tamper-proof reports, as well as the ability to detect non-visible substances with optional QuickDetect.™ Rigaku offers a portfolio of Raman analysis devices to ensure there is an option for various applications and budgets.

Classes of Nitazenes included on Rigaku CQL Analyzer*

Clonitazene	Metonitazene
Ethyleneoxynitazene	Protonitazene
Etodesnitazene	Nitazene Citrate
Etonitazene	Protodesnitazene
Flunitazene	Butonitazene
Isobutonitazene	Aminoisotonitazene
Isodesnitazene	Metodesnitazene
Isotonitazene	Menitazene



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*List is not exhaustive