

NPS Snapshot: Nitazenes



HISTORY AND KEY DATES

One of several types of novel analgesics developed in the 20th century as potential alternatives to traditional opiates.

1950s

Etonitazene and structurally related opioid agonist benzimidazoles are discovered in the pharmaceutical industry.

OCT 2018 - APR '19

Etonitazene, metonitazene, and isotonitazene emerge on illicit markets and in chat forums.

AUG 2019

Isotonitazene notified to EMCDDA.

JUN - JUL 2020

Temporary placement of isotonitazene in Schedule I by DEA; New nitazenes begin to emerge going forward.

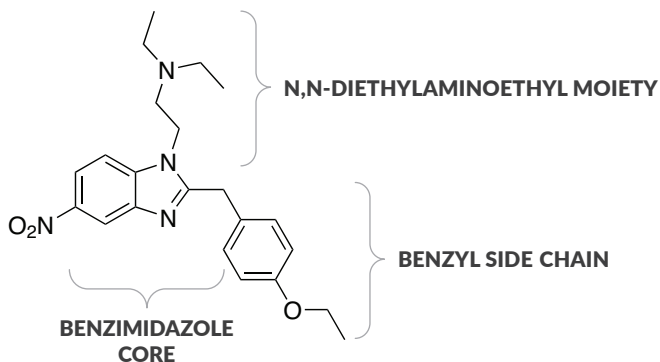
JAN 2024

Seven nitazenes are on the INCB Yellow List.

JUL 2025

China places nitazenes under national control; The UNODC EWA reports its 30th nitazene analog.

PROTOTYPICAL STRUCTURE



PHARMACOLOGY

In vitro data from [Vandeputte, M.M. et. al., 2021](#) suggest that nitazenes are generally highly active, with potencies of several analogs exceeding that of fentanyl. The length of the alkoxy chain, the type of *para*-benzyl substituent, and the presence of a 5-nitro group all affect the potency of these compounds. A relatively short or more compact alkoxy tail, lack of halogenation, and addition of a 5-nitro group are optimal for μ -opioid receptor activation. An interesting finding was the unexpected very high potency of the N-desethyl isotonitazene metabolite.

More Than 100 Nitazene Analytical Standards Available, Including:

- Metabolites
- Isotopically Labeled Standards
- Intermediates & Byproducts
- DEA Exempt Preparations
- CRMs

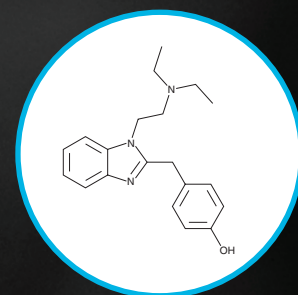


Discover All Nitazene Analytical Standards

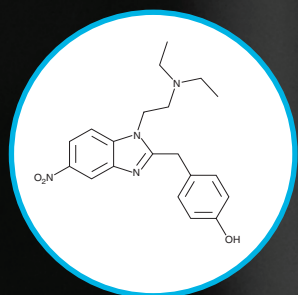
www.caymanchem.com/nitazene-standards

View our complete analytical standard line at www.caymanchem.com/forensics

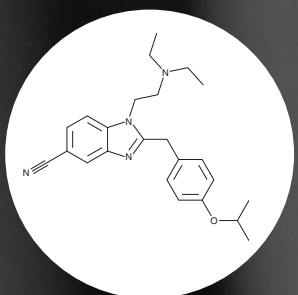
AVAILABLE NITAZENE ANALYTICAL STANDARDS



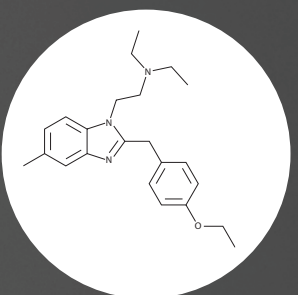
4'-hydroxy Desnitazene
(39321)



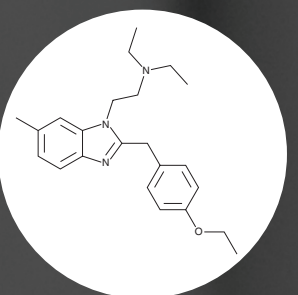
4'-hydroxy Nitazene
(30218)



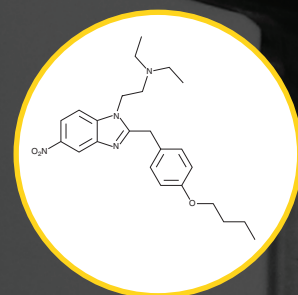
5-cyano Isotodesnitazene
(43596)



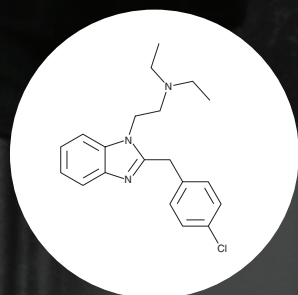
5-methyl Etodesnitazene
(36767)



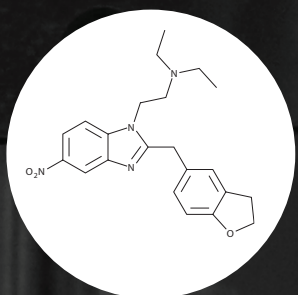
6-methyl Etodesnitazene
(39399)



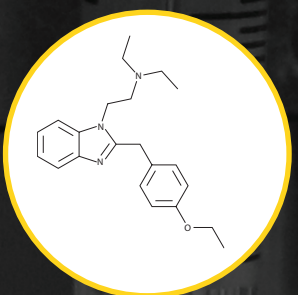
Butonitazene
(30278 | 38653)



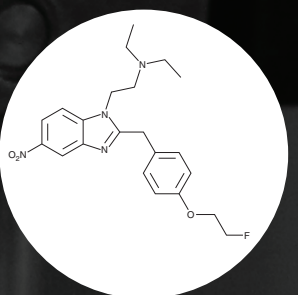
Clodesnitazene
(42605)



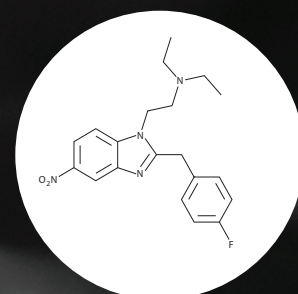
Ethyleneoxynitazene
(34947)



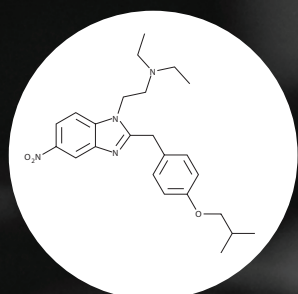
Etodesnitazene
(43092 | 29916
38174 | 43511)



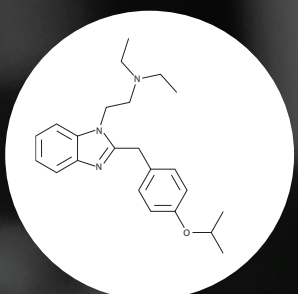
Fluetonitazene
(40834)



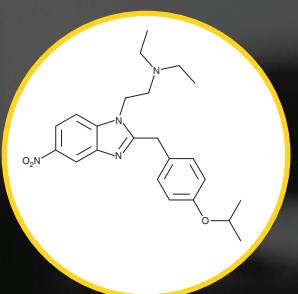
Flunitazene
(30279 | 40975)



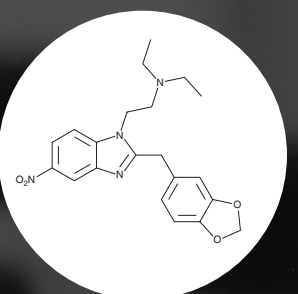
iso-Butonitazene
(35107)



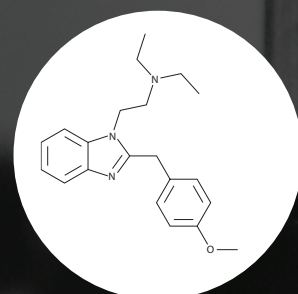
Isotodesnitazene
(30286)



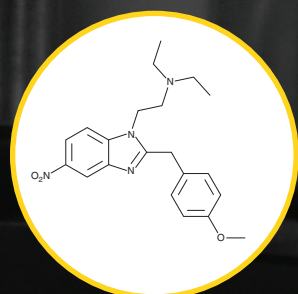
Isotonitazene
(30880 | 27255 | 40425
39682 | 29319)



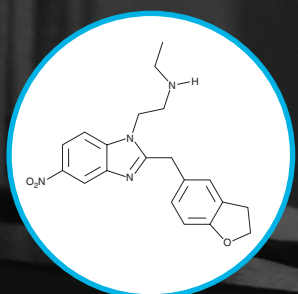
Methylenedioxyntazene
(38843)



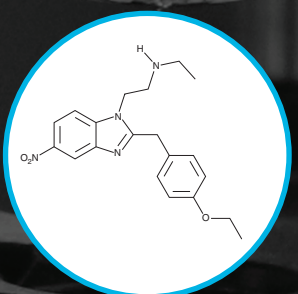
Metodesnitazene
(30035 | 43513)



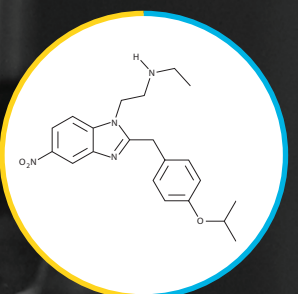
Metonitazene
(43158 | 26398 | 31303
43174 | 31648)



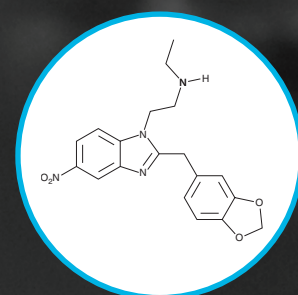
N-desethyl Ethyleneoxynitazene
(42227)



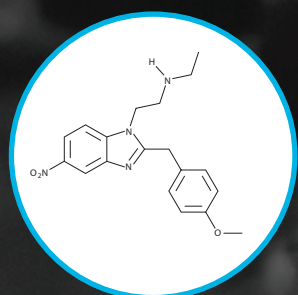
N-desethyl Etonitazene
(32512 | 37843)



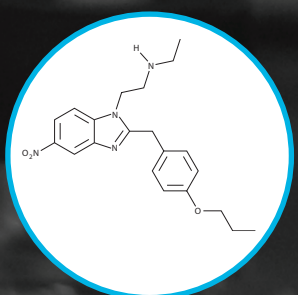
N-desethyl Isotonitazene
(30216 | 42404)



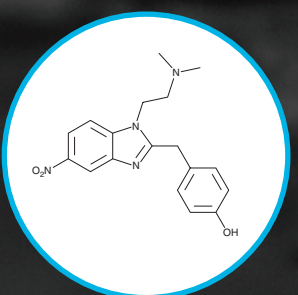
N-desethyl Methylenedioxyntazene
(42228)



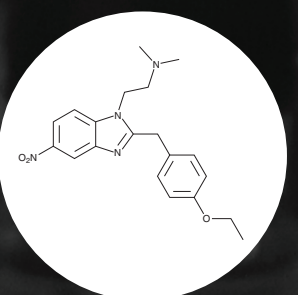
N-desethyl Metonitazene
(38178)



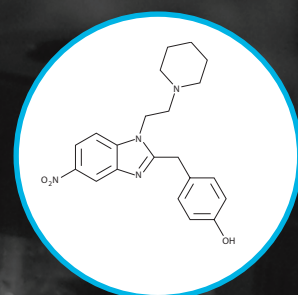
N-desethyl Protonitazene
(38154)



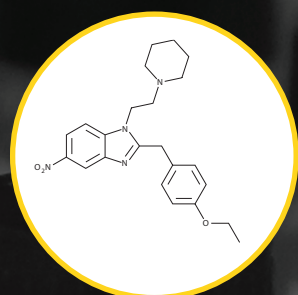
N,N-dimethylamino 4'-hydroxy Nitazene
(43883)



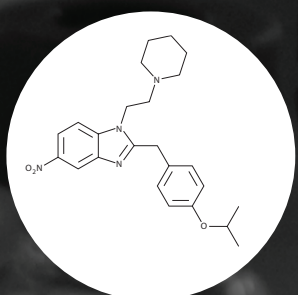
N,N-Dimethylamino Etonitazene
(34452)



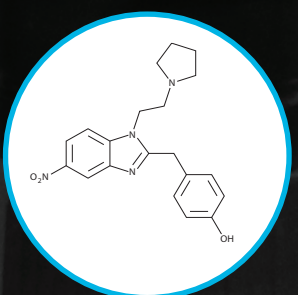
N-Piperidinyl 4'-hydroxy Nitazene
(37835)



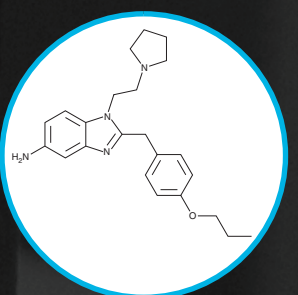
N-Piperidinyl Etonitazene
(33168)



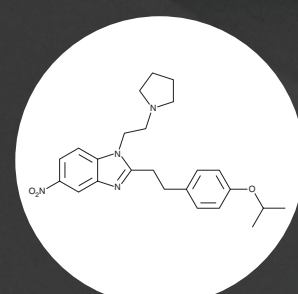
N-Piperidinyl Isotonitazene
(35106)



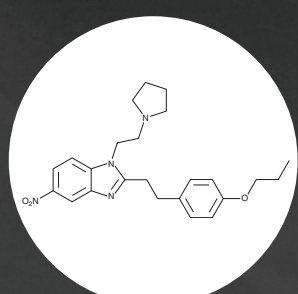
N-Pyrrolidino 4'-hydroxy Nitazene
(37834)



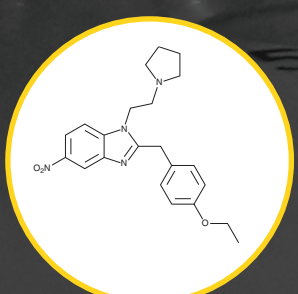
N-Pyrrolidino 5-Amino Protodesnitazene
(42911)



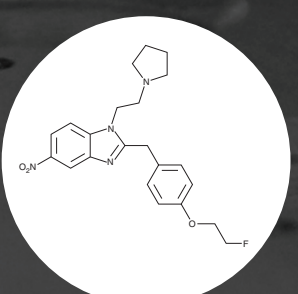
N-Pyrrolidino Ethylene Isotonitazene
(44110)



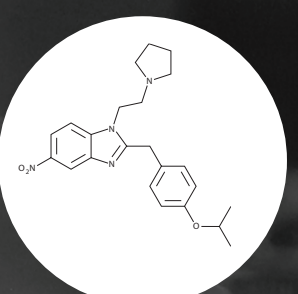
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(44090)



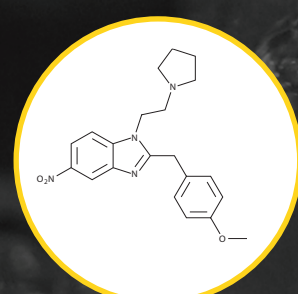
N-Pyrrolidino Etonitazene
(42194 | 33169
42256 | 38173)



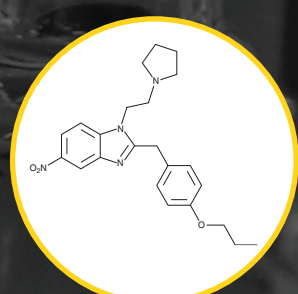
N-Pyrrolidino Fluetonitazene
(41221)



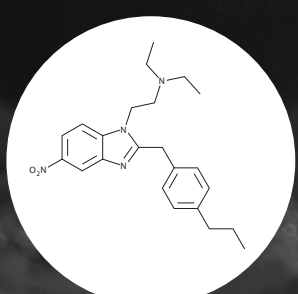
N-Pyrrolidino Isotonitazene
(34909)



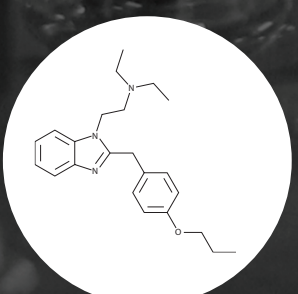
N-Pyrrolidino Metonitazene
(37685 | 42402)



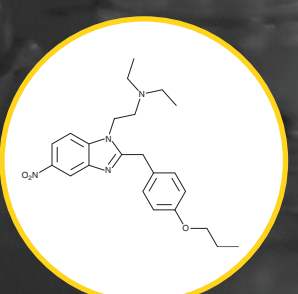
N-Pyrrolidino Protonitazene
(37456 | 41442)



Propylnitazene
(35179)



Protodesnitazene
(36917)



Protonitazene
(43161 | 29381 | 38143
38177 | 43512)

Metabolite or potential metabolite

INCB Yellow List

FORENSIC TOOLS & RESOURCES FOR NPS IDENTIFICATION

Cayman Chemical is dedicated to working with the forensic community to quickly make authentic reference standards available from our ISO/IEC 17025 and ISO 17034 laboratories. Cayman offers many free resources to assist the forensic community in the screening and identification of unknown substances.

Emergent Drug Panel & Internal Standard Kits

The Emergent Drug Panel (EDP) Kits are collections of reference standards designed to screen emerging drugs of concern, including nitazenes, in seized drug or toxicological casework.

EDP Kits are Free to Qualified Labs

- EDP & EDP-V1 Kits include 200 µg of each compound
- The EDP-IS Kit includes 100 µl of each isotopically labeled compound in a 2 mg/ml solution
- Improves immunoassay and mass spectrometry screening methods



APPLY NOW

www.caymanchem.com/EDP-kit

NPS DASHBOARD

We collaborate with the Center for Forensic Science Research & Education (CFSRE) to provide analytical reference standards for emerging NPS. Cayman maintains an updated dashboard to align with the CFSRE's quarterly NPS scope recommendations, matching reference standards with recommended NPS to help testing laboratories easily find reference standards to the most pressing NPS.

View the dashboard at www.caymanchem.com/NPS-dashboard



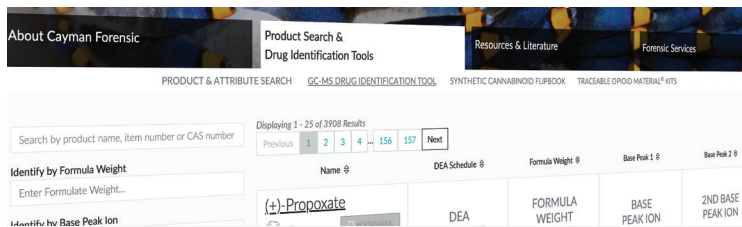
MASS SPEC RESOURCES



Cayman Spectral Library

Our free, searchable, GC-MS spectral database contains 70eV EI mass spectral data of 2,500+ of Cayman's forensic drug standards.

Download the database at www.caymanchem.com/CSL



GC-MS Drug Identification Tool

Cayman's GC-MS drug identification tool can help you search unknowns by formula weight, base peak, and 2nd base peak ion.

View the tool at www.caymanchem.com/drugID