

OPERATIONS DIVISION
DIVERSION



CONTROL

Chemical Control Actions

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Drug Enforcement Administration

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Chemical Control

- **Controlled Substances Act (1970)**

the principal federal law directed at combating the illicit manufacture and distribution of controlled drugs in the United States. Since its passage in 1970, the CSA has been amended on a number of occasions

- **Chemical Diversion and Trafficking Act (CDTA, 1988)**

- regulated 12 precursor chemicals, eight essential chemicals, tableting machines, and encapsulating machines
- resulted in the incorporation of Article 12 into the U.N. Convention Against Illicit Drug Traffic of 1988 (the Vienna Convention)

Chemical Control

- Domestic Chemical Diversion Control Act (DCDCA, 1993)
 - Eliminated single entity ephedrine tablet loophole
 - No controls on Combination EPH, PSE, PPA
- Comprehensive Methamphetamine Control Act (MCA 1996)
 - Control drug products containing EPH, PSE, PPA
- Methamphetamine Anti-Proliferation Act (MAPA, 2000)
 - Reduce transaction threshold from 24g to 9g of PSE and PPA
 - Blister pack exempted
- Combat Methamphetamine Epidemic Act (CMEA, 2005)

Chemical Control Background

- **Total of 40 List I and List II chemicals**
- **List I chemical handlers (Importers/Exporters/Manufacturers/Distributors) must:**
 - registration
 - maintain records
 - report suspicious orders
- **Through industry outreach and voluntary compliance measures, DEA strives to control chemical diversion in partnership with industry and the public.**
- **DEA routinely inspects records and required controls**

Examples of List I and List II Chemicals

- **List I**
 - **Acetic anhydride** → **heroin synthesis**
 - **Benzaldehyde** → **amphetamine synthesis**
 - **Ergotamine** → **LSD synthesis**
 - **Phenylacetic acid** → **P2P synthesis**
 - **Hypophosphorus acid** → **am/meth synthesis**
 - **Safrole** → **MDA/MDMA synthesis**
- **List II**
 - **Potassium permanganate** → **cocaine purification**

Recent Chemical Controls Actions

- **Removal of Ephedrine/Pseudoephedrine Mixture Exemptions**
- **Recent Controls Fentanyl Precursors**
 - NPP (List I, April 23, 2007)
 - ANPP (proposed Schedule II, comment period ended June 9, 2008)
- **Iodine and Mixture Regulations**
- **Under consideration:**
 - Ergocristine → LSD
 - L-Phenylacetylcarbinol → Ephedrine
 - Acetylpseudoephedrine → Meth
 - Isopropylbenzylamine → Fake Meth

Ephedrine/ Pseudoephedrine Exemptions

Final Rulemaking [68 FR 23195] published on May 1, 2003-

- created an exemption for all chemical mixtures containing five percent or less total ephedrine/pseudoephedrine.
- created an exemption for chemical mixtures consisting of unaltered harvested plant material containing ephedrine alkaloids (e.g. ephedra).

Ephedrine/ Pseudoephedrine Concerns

- Ephedra and dietary supplements containing ephedra used as the source of the precursor material for the illicit production of methamphetamine.
- FDA has taken action to eliminate ephedra dietary supplements from the U.S. market
- increase in importation of below 5% ephedra chemical mixtures from China to circumvent regulations

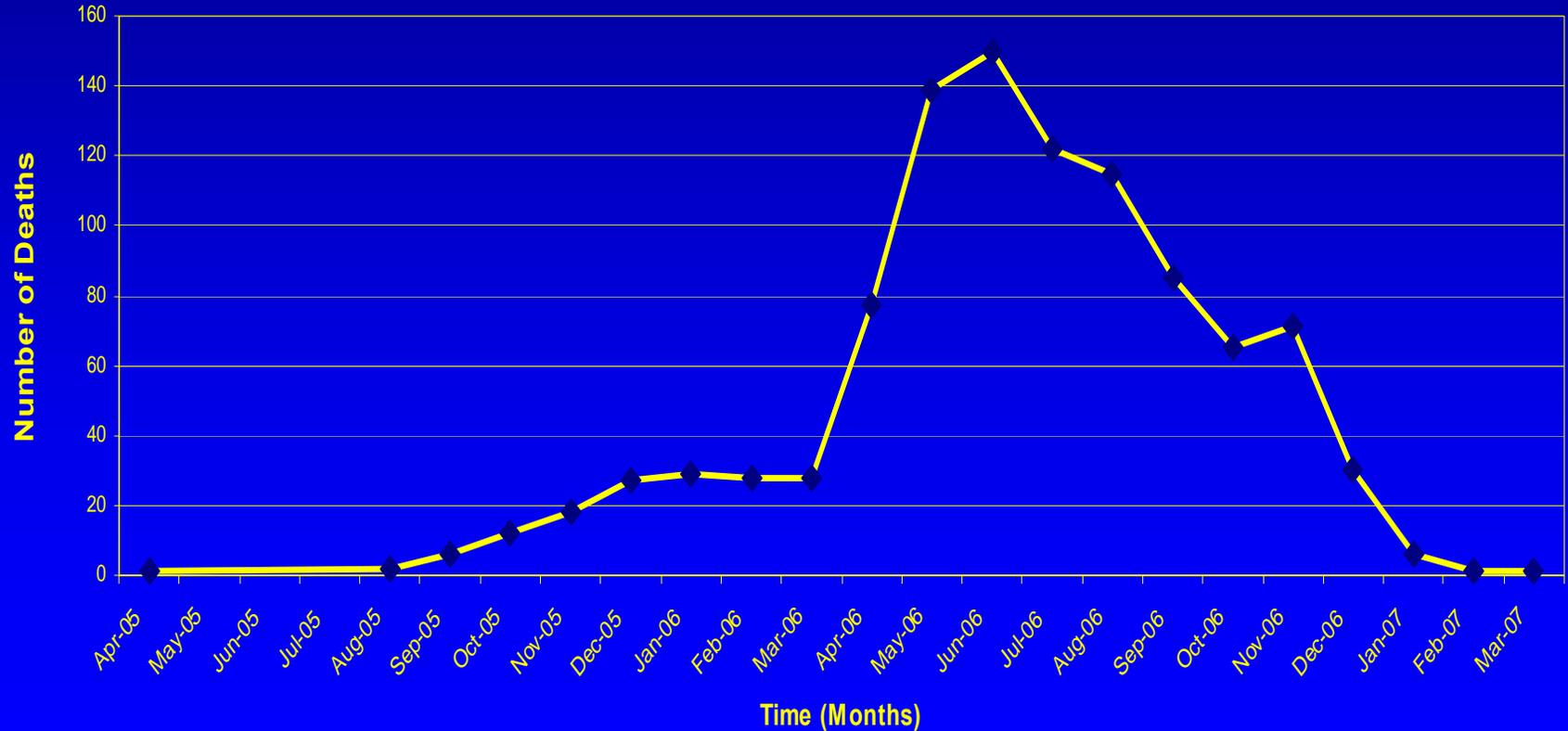
Changes in Ephedrine/Pseudoephedrine Controls

Implement the CMEA, Interim Final Rule effective August 24, 2007:

- **originally set at 5% to capture bulk ephedra (ma huang) that historically at concentration of 6-8% ephedrine**
- **Chemical Mixtures containing <5% total ephedrine /pseudoephedrine become regulated**

Illicitly Manufactured Fentanyl-Related Deaths in U.S.

Illicit Fentanyl Death Database
n=1013



Fentanyl Lab in Toluca, Mexico

Sunday, May 21, 2006 PGR/SIEDO and AFI

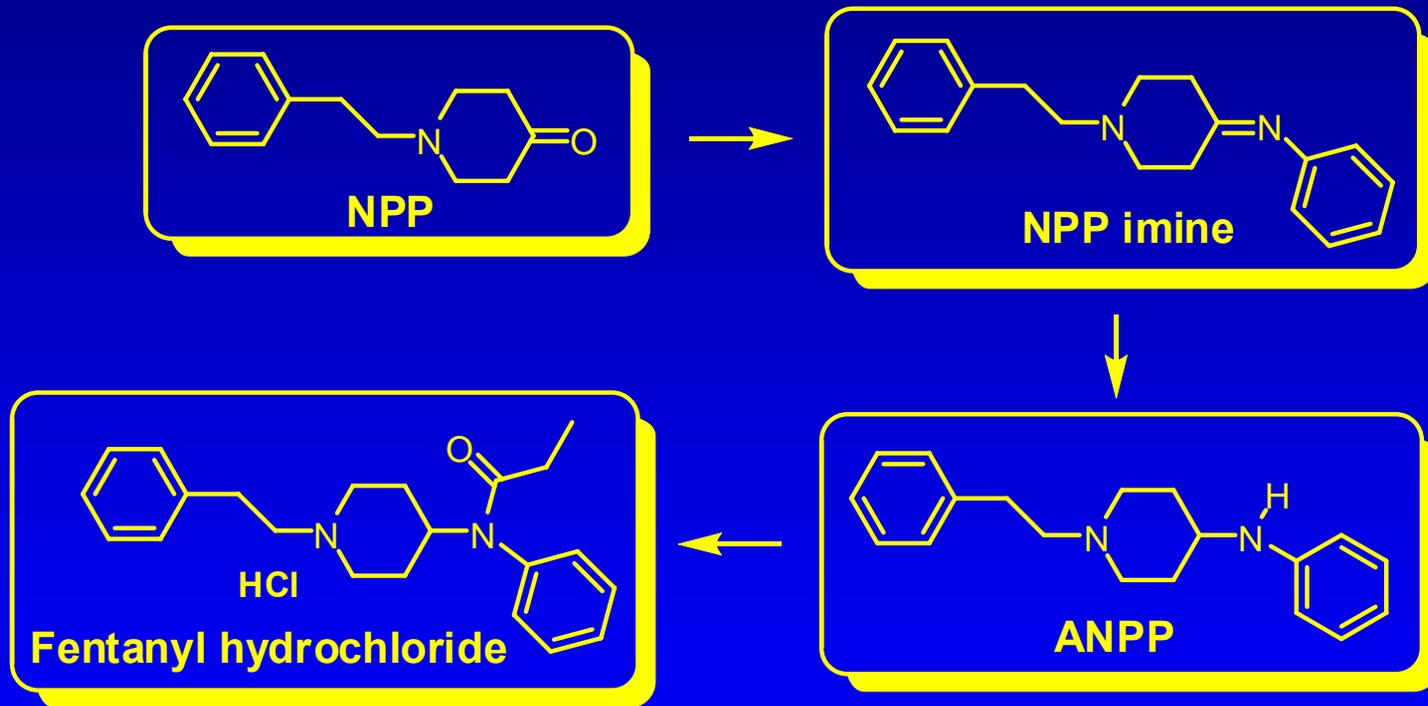


LA Area Fentanyl / MDA Lab

- November 2005, law enforcement seized a lab in the LA area suspected to be Fentanyl lab.
- Chemists analyzed the samples submitted and confirmed fentanyl and MDA present.
- A 5 kilogram bag of “NPP” (1-phenethyl-4 piperidone) precursor was seized.



Fentanyl Synthesis - Siegfried Method



N-Phenethyl-4-piperidone (NPP)

77 FR20039 effective April 23, 2007

- NPP becomes List I chemical
- Chemical mixtures containing NPP are not exempt from regulatory requirements at any concentration
- All transactions (domestic & International) involving NPP, regardless of size, shall be regulated

ANPP Federal Register

- Federal Register Notice of Proposed Rulemaking closed June 9, 2008
- Designates 4-anilino-N-phenethyl-4-piperidine (ANPP) as an **immediate precursor** to a schedule II controlled substance
- ANPP controlled as schedule II substance, subject to quota requirement

Legitimate Uses of Iodine

- In medicine, iodine tincture is used as a disinfectant
- In the manufacture of compounds used in photography (e.g. silver iodide which is a light sensitive material used in film)
- In the manufacture of dyestuffs and drugs
- as a reagent in analytical chemistry and precursor in organic synthesis

Production of Iodine

- from the liquor remaining after the extraction of potassium nitrate from saltpeter found in deposits in Chile,
- by extraction from the ash from the combustion of seaweed. In the process, the sea-weeds are burnt in shallow pits and the resulting kelp (i.e. the ash from the process) contains potassium salts and from 0.4 per cent to 1.3 per cent of iodine in the form of iodide salts (e.g. potassium iodide),
- in a wet extraction of the seaweed with sodium carbonate solution is prepared and an organic adhesive is precipitated on acidifying of this solution, and
- by extraction from salt brine

Iodine Diversion

- Widely used in clandestine laboratories with application in large-scale methamphetamine synthesis
- 7% tincture - a source of iodine and was exempted



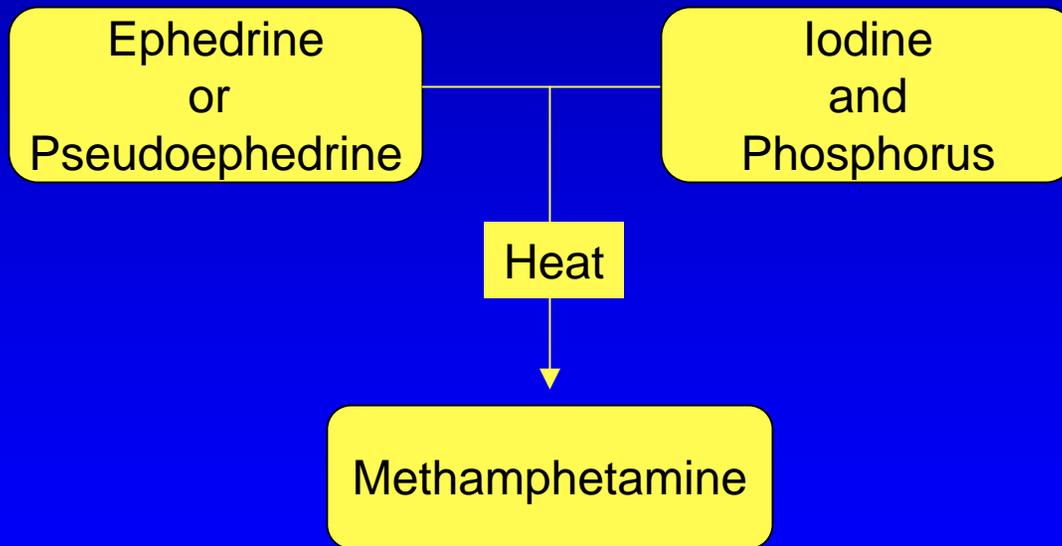
Meth Lab Seizures

Year	I ₂	HI	Labs
1999	2232	637	7446
2000	2751	652	9112
2001	3952	716	13460
2002	4421	743	16241
2003	5098	655	17615
2004	5140	581	17774
2005	3261	338	12626
2006	1760	157	7177

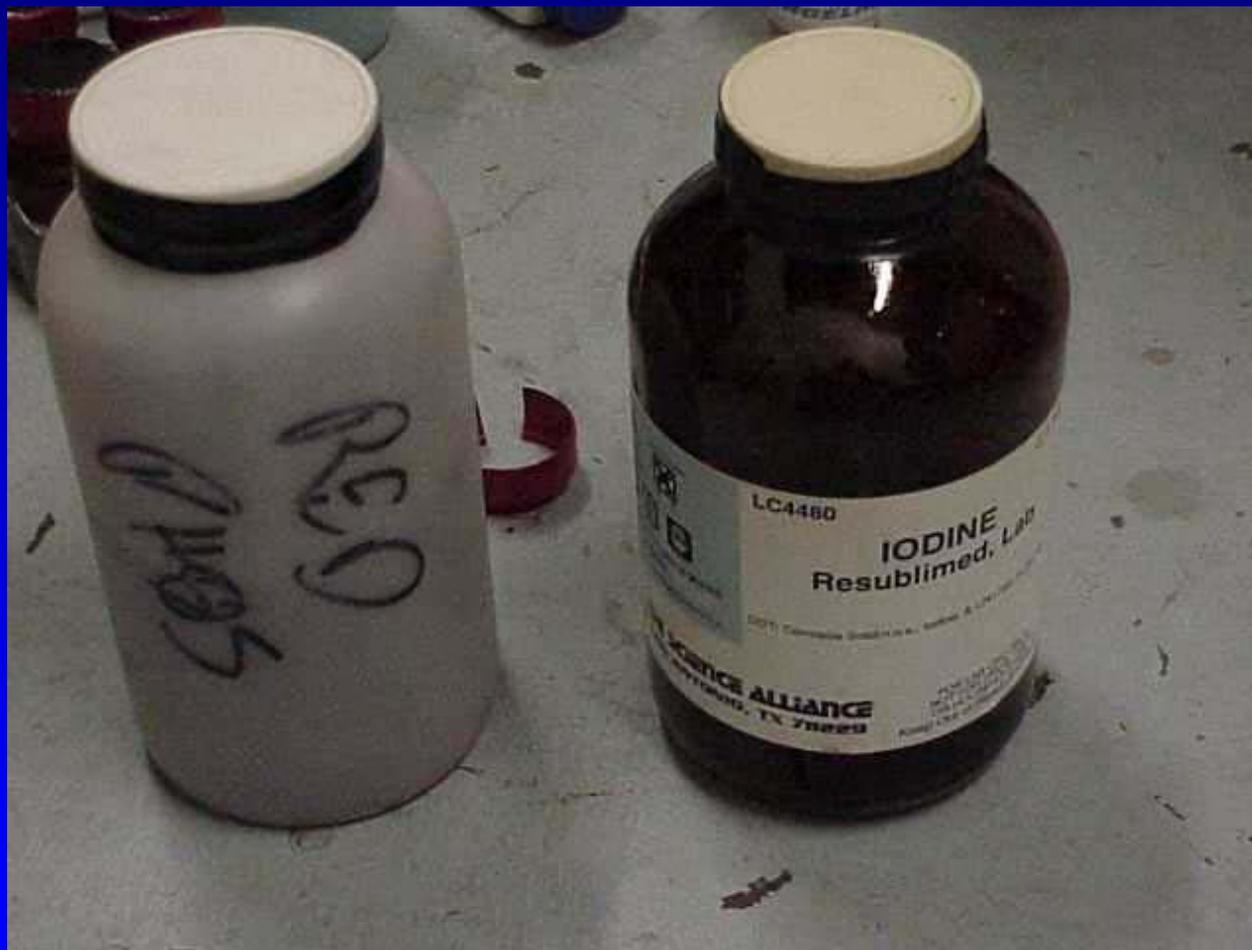
Source: NSS

Iodine and the Clandestine Methamphetamine Laboratory

Iodine is added to a solution of ephedrine or pseudoephedrine with phosphorus to produce methamphetamine



Chemicals from a Lab Seizure



Iodine Seized in Clan Labs

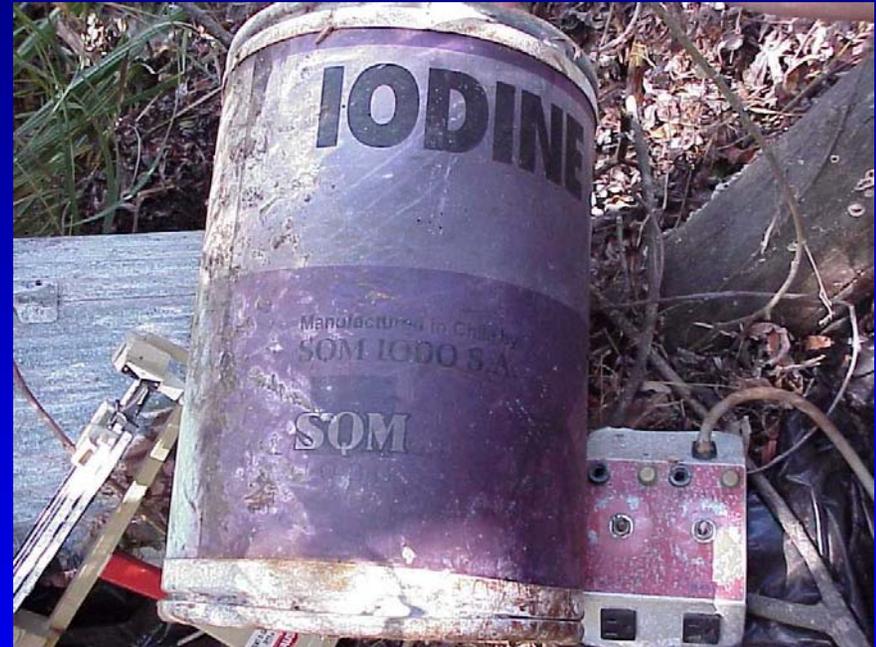


Veterinary products from clan labs, source of iodine

More Iodine in Clan Labs



Iodine at clandestine lab



Iodine at a dumpsite

Internet Procedure – Extraction of Iodine from Tincture



Recent Controls Iodine

- **Moved from List II to List I**
- **Impose registration requirements**
- **Capture 7% iodine tincture**
- **Zero threshold - Control imports and exports**
- **Control chemical mixtures containing >2.2%**
- **Exemption of iodophors/organically bound compounds**

Comparison of Iodine Regulations

Past

List II Chemical

0.4 Kilogram
Threshold

Domestic Transactions
Regulated

Chemical Mixtures
Not Regulated



Current

List I Chemical

No Threshold

All
Transactions

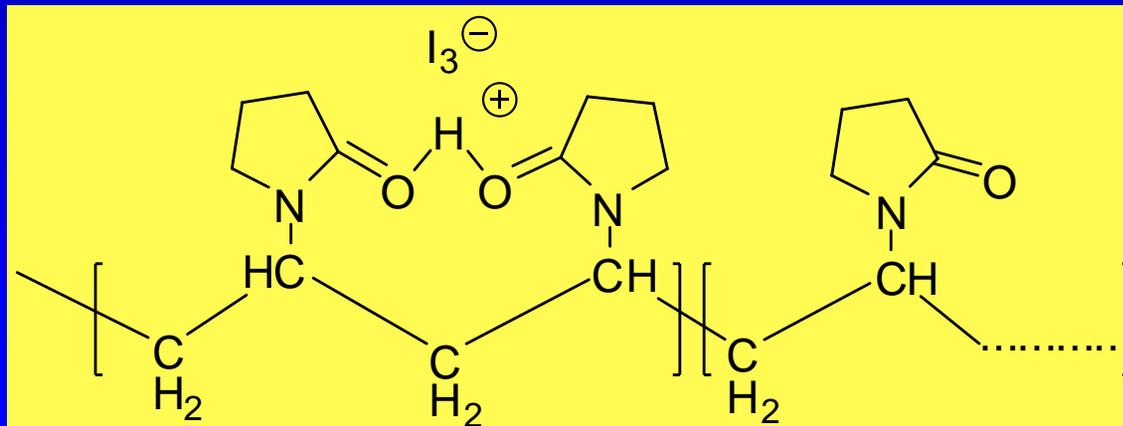
Chemical Mixtures
<2.2% Exempt

Iodine Product Exemptions

- 1 package of Lugol's Solution (30 mL) per transaction
- Chemical Mixtures below 2.2%
2% Iodine Tincture
- Iodophors
- Organic bonded Iodine

What is an Iodophor?

- Carrier of iodine generally consisting of a complex with a polymer or surfactant
- Provides a sustained release of iodine
- Primarily used as a disinfectant



Example of an Iodophor: PVP-Iodine Complex

Common Iodophor Products

- **Betadine**
- **Biopal CVL-10**
- **Idonxy**
- **Kleenodyn**
- **Wescodyne**
- **Westamine X**

Iodophor as a Source of Iodine

- It has been demonstrated that betadine can be used as a source for I_2
- By heating of the solution and trapping the vapors
- Method requires a large amount of iodophor and is a lengthy process

Extraction of Iodine from Iodophor

Discussion forums describe the extraction of iodine from betadine by sublimation

- 1. The iodophor solution is heated to dryness**
- 1. Continued heating of the solid and the presence of a cold surface (cold finger, condenser, etc.) results in the collection of iodine crystals**

Potassium Iodide - Source of Iodine

Beginning to see the use of KI as a source of iodine



Fake Methamphetamine - Benzylamines

- Numerous evidence samples testing positive for amphetamines
 - Las Vegas, NV; Phoenix, AZ; Nogales, AZ; San Diego, CA, DC
- benzylmethamphetamine, benylethylamine, and isopropylbenzylamine
- Available chemical suppliers
- Believed to be counterfeit Meth because:
 - show positive for meth field test
 - have a similar crystalline structure/ appearance
- Pure, cut and mixed with methamphetamine
- Can be synthesized to methamphetamine
- Gathering data and under evaluation

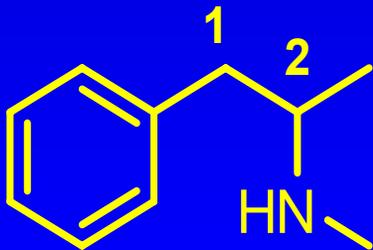
Benzylamines



R = methyl; benzylmethyamine

R = ethyl; benzylethylamine

R = isopropyl; benzylisopropylamine

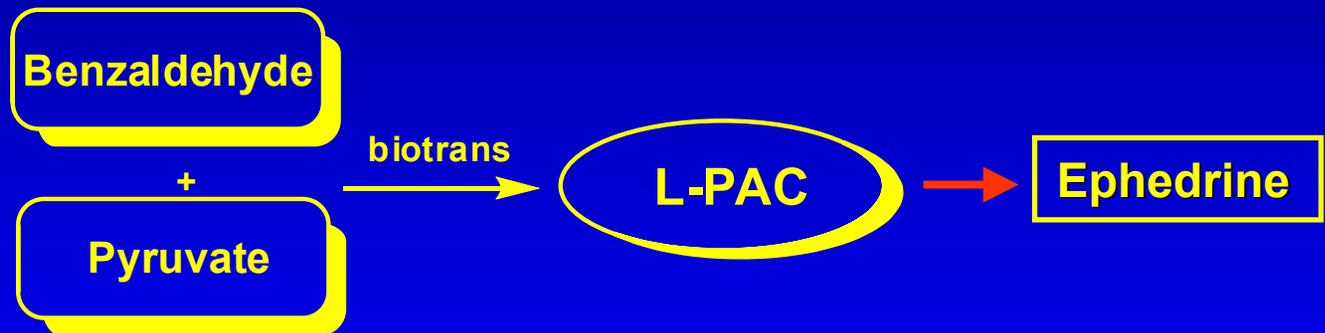


methamphetamine



L-Phenylacetylcarbinol (L-PAC)

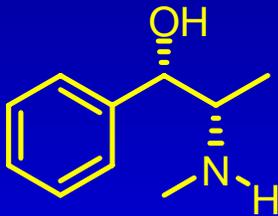
- Molasses-based fermentation by yeast used to make ephedrine
- Specialized Process: Difficult in Clan Lab Setting (However one lab in Australia)



- L-PAC production is the difficult step
- Final step in ephedrine production easy (same as producing meth from P2P using methylamine)

***N*-Acetylpseudoephedrine (APSE)**

- Not Controlled under the CSA
- Pseudoephedrine with an attached acetyl group



Pseudoephedrine



APSE



Meth

- Acetyl group can be added and removed with acid or base (also, formyl and benzoyl group)
- Can convert to Pseudoephedrine first or run reaction via HI/Red P directly to meth with 44% yield

Contact Us

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