



Microgram

Bulletin

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AUGUST 2004

- INTELLIGENCE ALERT -

**DILTIAZEM, HYDROXYZINE, AND METHYLEPHEDRINE IDENTIFIED
IN SEPARATE SHIPMENTS OF COCAINE**

The Cocaine Signature Program at the DEA Special Testing and Research Laboratory (Dulles, Virginia) has recently received cocaine from large shipments that contained several highly unusual adulterants. In the first example, the U.S. Coast Guard made two separate seizures from vessels in the Caribbean Sea (totalling 2223 kilograms) of cocaine HCl containing various amounts of diltiazem hydrochloride. Diltiazem hydrochloride is a white to off-white powder with a bitter taste and a molecular weight of 450.99 amu. It is legitimately used to treat angina, hypertension, and irregular heartbeats, and is the active ingredient in heart medications produced by a myriad of pharmaceutical companies. It appears that the diltiazem hydrochloride was added to the cocaine at the final processing stage of converting cocaine base to cocaine HCl (that is, just before being formed into kilogram bricks). Signature analyses indicate that the cocaine in this case originated from Colombian grown coca leaf and was converted to cocaine HCl utilizing Colombian Method solvents (that is, most likely in Colombia). The bricks contained from 71 - 85 percent cocaine HCl and 8 - 20 percent diltiazem hydrochloride.

In the second example, a number of multi-kilogram seizures were made at or near the Texas/Mexico border (net totals not reported) of cocaine HCl containing various amounts of

hydroxyzine dihydrochloride. Hydroxyzine has a molecular weight of 374.9 amu and is classified as an antihistamine. It is legitimately used to treat anxiety, motion sickness, and skin rashes. It again appears that the hydroxyzine was added to the cocaine at the final processing stage of converting cocaine base to cocaine HCl. Signature analyses indicate that the cocaine in this case originated from Colombian grown coca leaf and was converted to cocaine HCl utilizing Colombian Method solvents (again, most likely in Colombia). The bricks contained 75 - 84 percent cocaine HCl and 3 - 10 percent hydroxyzine dihydrochloride (other cocaine related alkaloids constituted as much as 14 percent of these exhibits).

In the third example, a number of multi-kilogram seizures were made by the U.S. Coast Guard and the Drug Enforcement Administration of cocaine HCl seizures containing various amounts of methylephedrine. One seizure (2200 kilograms) was made in the Caribbean Sea, while a second (amount not reported) was made off the coast of Florida, and a third (amount not reported) was made near Calexico, California. Methylephedrine has a molecular weight of 179.3 amu. It is legitimately used for its moderate CNS stimulant effects, and is often found in diet pills. Although not controlled, it is closely monitored as a List I chemical due to its occasional use in illicit methamphetamine production (that is, to produce dimethylamphetamine). It again appears that the methylephedrine was added to the cocaine at the final processing stage of converting cocaine base to cocaine HCl. Signature analyses indicate that the cocaine in this case originated from Colombian grown coca leaf and was converted to cocaine HCl utilizing Colombian Method solvents (again, most likely in Colombia). The bricks contained 71 - 78 percent cocaine HCl and 10 - 19 percent methylephedrine.

[Editor's Notes: Since these original reports, three additional seizures of cocaine containing diltiazem (25, 24, and 855 kilograms, respectively) and one additional seizure of cocaine containing methylephedrine (72 kilograms) were analyzed at the laboratory. However, no further seizures of cocaine containing hydroxyzine were submitted to the laboratory.]

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- INTELLIGENCE ALERT -

**PSILOCYBIN MUSHROOM/CHOCOLATE CONCOCTION
IN LIVE OAK, FLORIDA**

The Florida Department of Law Enforcement Tallahassee Crime Laboratory (Tallahassee, Florida) recently received a roughly cube-shaped piece of apparent chocolate wrapped in aluminum foil, submitted as an unknown/ possible drug substance (see Photo 1). The exhibit was seized by the Live Oak Police Department at the Suwannee Spring Fest in Live Oak, Florida (about 80 miles east of Tallahassee). Due to the recent, large number of reports of psilocybin mushroom/chocolate



Photo 1

concoctions, it was suspected by laboratory analysts that this was a similar type exhibit (even though it did not appear to have been formed in any type of mold). Analysis of the material (total net mass 11.5 grams) using the previously published rapid extraction method by Sarwar and McDonald (*Microgram Journal* 2003;1(3-4):177) and GC and GC/MS confirmed psilocin (quantitation not performed). This was the first submission of a psilocybin mushroom/chocolate concoction to the Laboratory.

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- INTELLIGENCE ALERT -

HEROIN IN SIMULATED RED BEANS AT JFK AIRPORT

The DEA Northeast Laboratory (New York, New York) recently received a bag of red beans, some genuine and some false, with the false beans containing a brown powder, suspected heroin (see Photos 2 and 3). The relative percentages of genuine versus false beans was not determined. The bag (see Photo 4) originated in Ecuador, and was submitted by the Homeland Security (Immigration and Customs Enforcement) JFK Airport Office, after being seized from the unclaimed shipments warehouse at JFK Airport. Analysis of the powder from the fake beans (total net mass 480.5 grams) by GC/FID, GC/MS and FTIR confirmed 68 percent heroin hydrochloride. The Northeast Laboratory has previously encountered similar false beans as a heroin concealment technique, on several occasions.



Photo 2 - Fake versus Real Bean



**Photo 3
Mixed Fake and Real Beans**



Photo 4

- INTELLIGENCE ALERT -

**LEATHER "PICTURES" FROM EL SALVADOR CONTAINING COCAINE
AT DULLES AIRPORT, VIRGINIA**

The DEA Mid-Atlantic Laboratory (Largo, Maryland) recently received four leather pictures in wooden frames that contained packages of white powder in the frames, suspected cocaine (see Photo 5). The exhibits were seized by Customs and Border Protection Officers at the Dulles International Airport (Virginia) from a passenger on a flight originating in El Salvador. The frames (approximate dimensions 18 x 18 x 2 inches) were taped together as pairs; each had a leather picture glued across the back of frame (picture facing forward). The pictures were: A) A head, two birds, and the title "El Salvador"; B) A head, a pyramid, and the title "El Salvador"; C) A seashore and the word "Ilopango"; and D) [Scene could not be identified]. The powder was packaged in plastic bags that were further wrapped in foil and hidden inside hollowed-out cavities in the frames. Each frame contained 18 plastic bags for a total of 72 plastic bags, total net mass of powder 1995 grams. Analysis by GC/FID, GC/MS and FTIR- ATR confirmed 79 percent cocaine hydrochloride. This is the second recent exhibit the Mid-Atlantic Laboratory has received of cocaine hidden inside picture frames.



Photo 5

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- INTELLIGENCE ALERT -

**VERY LARGE SEIZURE OF COCAINE
BASE MADE OFF THE WEST COAST
OF SOUTH AMERICA**

The DEA Southwest Laboratory (Vista, California) recently received an unusual exhibit consisting of 1832 individual packages of a variety of dimensions and weights, containing an off-white waxy material (total net mass approximately 3500 kilograms), suspected cocaine (see Photo 6). The exhibit was seized by the U.S. Coast Guard from a vessel in international waters off the western coast of South America. The packages were in three general shapes:



Photo 6

Single bricks approximately 7 x 3.5 x 1.5 inches; double bricks approximately 9 x 3 x 3 inches; and rounded cubes approximately 7.5 x 7.5 x 5 inches. The non-standard shapes of the packages and the physical consistency of the substance suggested that the material was not cocaine hydrochloride. This was confirmed when there was essentially no response with the non-acidified cobalt thiocyanate reagent, but a very strong positive was observed with the acidified cobalt thiocyanate reagent. Analysis by IR and GC indicated 86 percent cocaine base. Unusually, the exhibit did not contain sodium bicarbonate or any other material commonly used to convert cocaine hydrochloride to cocaine base. This is the largest seizure of cocaine base ever received by the Southwest Laboratory.

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- INTELLIGENCE ALERT -

COCAINE IN CARVED WOODEN WALL HANGINGS AT THE MIAMI INTERNATIONAL MAIL FACILITY

The DEA South Central Laboratory (Dallas, Texas) recently received a submission of six carved wooden wall hangings containing tape-wrapped bundles of white powder, suspected cocaine (see Photo 7). The carvings (total net mass 14.14 kilograms) were seized by Immigration and Customs Enforcement officers at the International Mail Facility in Miami, Florida, and were submitted to the laboratory after a controlled delivery in Ft. Worth, Texas. The origin of the carvings was not reported to the laboratory. Each of the six carvings was of a unique design; however, all six were approximately the same size (dimensions not measured exactly, but the ruler in Photo 7 is six inches long). All six of the carvings had an internal cavity that contained the bundles (see Photo 8). Analysis by FTIR, GC/FID, GC/MS, and HPLC of the powder (total net mass 2.930 kilograms) confirmed 74 percent cocaine hydrochloride, cut with phenacetin, caffeine, aminopyrine, and dimethylterephthalate. It is believed that this was the first submission of this type to the laboratory.



Photo 7



Photo 8

- INTELLIGENCE ALERT -

**INK CARTRIDGES FROM VENEZUELA CONTAINING HEROIN
IN MEMPHIS, TENNESSEE**

The DEA Northeast Laboratory (New York, New York) recently received ten ink cartridges containing a tan colored powder (total net mass 398.6 grams), suspected heroin (see Photo 9). The exhibits originated in Venezuela, and were submitted by the Homeland Security (Immigration and Customs Enforcement) New York City Office, after being seized at the Federal Express Hub in



Photo 9

Memphis, Tennessee. Analysis by GC/FID, GC/MS and FTIR confirmed 82 percent heroin hydrochloride. The Northeast Laboratory routinely receives heroin smuggled in different consumer and manufacturing items, but this was the first time that ink cartridges were submitted as a concealment technique.

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- INTELLIGENCE ALERT -

**BICYCLE FRAME PART FROM PERU CONTAINING HEROIN IN CAROLINA,
PUERTO RICO**

The DEA Southeast Laboratory/San Juan Satellite Laboratory (San Juan, Puerto Rico) recently received a bicycle frame part containing an off-white powder (total net mass 951.1 grams), suspected heroin (see Photo 10). The exhibit was seized by Customs and Border Protection officers in Carolina, Puerto Rico (a suburb of San Juan) from an express mail package arriving from Peru. Analysis by GC/FID, GC/MS, and FTIR-ATR confirmed 58 percent heroin hydrochloride. This was the first submission of this type to the laboratory.



Photo 10

- INTELLIGENCE ALERT -

ASIA-PRODUCED PSEUDOEPHEDRINE INCREASINGLY USED IN SUPERLABS

[From the NDIC *Narcotics Digest Weekly* 2004;3(28):2
Unclassified, Reprinted with Permission.]

In May 2004, law enforcement officials from the Los Angeles County Regional Information Clearinghouse reported that pseudoephedrine products produced in Asia increasingly are being encountered at methamphetamine laboratories throughout cities on the West Coast. One such product, a cold medicine produced in Taiwan, has been discovered at methamphetamine laboratories in California, Oregon, and Washington. For instance, while investigating a methamphetamine laboratory in Stanislaus County in February 2004, agents with the Stanislaus Drug Enforcement Agency discovered three large trash bags full of empty bottles for this cold medicine, each with 1,000-tablet capacity. Additionally, pseudoephedrine products manufactured in Hong Kong have been seized in California. Asia-produced pseudoephedrine products primarily are transported to the United States in containerized cargo through the Port of Long Beach. Asian pseudoephedrine products also are transported to Mexico for use in methamphetamine production in that country or for smuggling overland into the United States.

NDIC Comment: Asia-produced pseudoephedrine products have been seized primarily at large methamphetamine laboratories, including superlabs (laboratories capable of producing 10 or more pounds of methamphetamine in a single production cycle). Superlab operators typically purchase bulk quantities of Canada-produced pseudoephedrine products from groups that smuggle the product across the U.S.-Canada border. However, successful law enforcement activities over the past few years have restricted the availability of bulk quantities of pseudoephedrine products from Canada and may be forcing superlab operators to obtain bulk quantities of pseudoephedrine from other sources, including those in Asia.

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- INTELLIGENCE ALERT -

ANHYDROUS AMMONIA TANKS STOLEN FROM FISHING VESSELS

[From the NDIC *Narcotics Digest Weekly* 2004;3(30):2
Unclassified, Reprinted with Permission.]

On June 3, 2004, officials from the Seattle Police Department, Seattle Harbor Patrol, and Milton Police Department announced the arrests of six individuals for their alleged participation in a criminal group that stole tanks of anhydrous ammonia from fishing vessels and subsequently sold them to methamphetamine producers. The defendants are charged with theft of anhydrous ammonia and several other offenses including burglary, theft of a motor vehicle, and trafficking in stolen property. From November 2003 through March 2004, the defendants allegedly stole approximately twelve 300-pound containers of anhydrous ammonia from fishing vessels anchored in Lake Union. The defendants allegedly stole small watercraft, including inflatable

boats and rowboats docked on Lake Union, to travel to fishing vessels anchored away from shore that contained the anhydrous ammonia tanks. Once on board the fishing vessels, the defendants removed the anhydrous ammonia tanks and lowered them into the water, generally attaching them to the outside of the stolen watercraft. The defendants arranged the tanks so that they would float just below the water's surface to avoid detection. The defendants transported the tanks to shore and loaded them into a waiting vehicle. The tanks were subsequently sold to methamphetamine producers, primarily in Pierce County, for \$1,400 to \$1,500 per tank.

NDIC Comment: Anhydrous ammonia is a colorless, pungent gas legitimately used as a fertilizer and as a refrigerant in commercial air-conditioning systems. It is also used as a refrigerant aboard fishing vessels, the largest of which can carry thousands of pounds of the chemical. Anhydrous ammonia is used illicitly by methamphetamine laboratory operators to produce methamphetamine using the Birch reduction method. The chemical frequently is stolen from storage facilities situated on farmlands, from retail facilities selling agricultural supplies and, increasingly, from fishing vessels. In Washington, anhydrous ammonia is commonly diverted, particularly in the western part of the state. According to the NDIC National Drug Threat Survey 2003, 80.9 percent of state and local law enforcement respondents in Washington report that anhydrous ammonia is commonly diverted for use in illicit drug production in their jurisdictions.

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- INTELLIGENCE BRIEF -

KHAT IN NORTHBROOK, ILLINOIS

The Northern Illinois Police Crime Laboratory (Highland Park, Illinois) recently received a submission of three bundles of green plant material (total net mass 96.60 grams), each wrapped in what appeared to be a banana leaf, suspected khat (see Photo 11). The exhibit was taken from a much larger (approximately 30 pounds) seizure made by the Northbrook Police Department at the Northbrook UPS Office. Unusually, the material had been shipped in just a box (not a cooler, as is more typically encountered), and so was already beginning to deteriorate when received by the laboratory (where it was stored in a freezer upon receipt). Despite the decomposition, however, analysis by GC/MS indicated both cathinone and cathine, confirming that the plant material was khat. This was the first submission of khat to the laboratory.



Photo 11

- INTELLIGENCE BRIEF -

**THREE TYPES OF ECSTASY MIMIC TABLETS CONTAINING COCAINE,
METHAMPHETAMINE, AND MDA IN FLORIDA**

The Florida Department of Law Enforcement Orlando Regional Crime Laboratory (Orlando, Florida) recently received three different sets of tablets, suspected MDMA. The first exhibit was submitted by the Orange County Sheriff's Office, and consisted of 18 round pink tablets with a thin white coating on one side and a thin pink coating on the opposite side, total net mass 6.1 grams (see Photo 12). The white face had a dollar sign (\$) logo, while the pink face was unmarked. Marquis color tests of each layer gave no reactions; however, the acidified cobalt thiocyanate test gave a blue color for the pink layer and a very pale blue color for the white layer. Analysis by GC and GC/MS indicated not MDMA but rather a mixture of cocaine and pseudoephedrine.



Photo 12

The second exhibit consisted of 2 large (about 2 centimeters in diameter), round, green tablets with a "777" logo (see Photo 13). Analysis by GC and GC/MS indicated not MDMA but rather a mixture of methamphetamine and 3,4-methylenedioxyamphetamine (MDA).



Photo 13

The third exhibit was submitted by the Apopka Police Department, and consisted of 10 unusually thick (about 8 x 8 millimeters), poorly pressed, crumbly round tablets (some in pieces) that were an unusual "sandwich" type design, with a thick green middle section and a white layer on each side, total net mass 4.8 grams (see Photo 14). Both white faces had a six-point star logo. Again, the Marquis color test gave no reaction while the acidified cobalt thiocyanate test gave a blue color. Analysis by GC and GC/MS indicated not MDMA but rather a mixture of cocaine, caffeine, and aspirin.



Photo 14

The first two exhibits are the first ever submissions of cocaine-containing tablets to the laboratory; however, the laboratory

has previously received several submissions of combination methamphetamine/MDA tablets (though not with "777" logos).

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- INTELLIGENCE BRIEF -

BUPRENORPHINE TABLETS NEAR SEATTLE, WASHINGTON

The Naval Criminal Investigative Service Regional Forensic Laboratory (San Diego, California) recently received a submission of numerous suspected drug items from a military agency near Seattle, Washington. Included among the various exhibits were two intact orange colored hexagonal tablets along with broken tablets pieces and orange powder, total net mass 2.15 grams (see Photo 15). The approximate tablet weight and dimensions were 0.4 grams/tablet, 10.5 millimeters between parallel sides, and slightly biconvex, 3.3 millimeters at the edge and 4.6 millimeters at the center. The two intact tablets had an "N8" logo on one face, and were single scored on the reverse face. Because of their poor quality, these tablets were suspected to be of clandestine manufacture. However, they were subsequently identified as the commercial product, "Suboxone", that contain 8 milligrams of buprenorphine (a Schedule III semi-synthetic opiate derived from thebaine) and 2 milligrams of naloxone hydrochloride per tablet. Analysis of a methanol extract by GC/MS identified buprenorphine, naloxone, and mannitol (quantitation not performed). This is the first time that buprenorphine has been submitted in any form to the laboratory.



Photo 15

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- INTELLIGENCE BRIEF -

MDMA LABORATORY SEIZED IN AMHERST [NEW YORK]

[From the NDIC *Narcotics Digest Weekly* 2004;3(28):2
Unclassified, Reprinted with Permission.]

On June 14, 2004, DEA agents seized an operational MDMA (3,4-methylenedioxymethamphetamine, also known as ecstasy) laboratory in Amherst and arrested its suspected operator. The

defendant was charged with possession with intent to manufacture, distribute, or dispense a controlled substance and importing into the United States a controlled substance or List I chemical. DEA agents uncovered the laboratory after learning in April 2004 that an individual with a Buffalo post office box had ordered 5 kilograms of sassafras oil from France. Agents made a controlled delivery to the post office box and arrested the defendant when he claimed the parcel. Following the defendant's arrest, agents executed a search warrant at his Amherst residence and found glassware and precursor chemicals used to make MDMA. Additionally, agents found \$2,400 and approximately 1 kilogram of marijuana. Agents also executed a search warrant at a nearby rental storage facility used by the defendant, where they discovered 5 pounds of suspected MDMA as well as other chemicals. Because of the dangerous nature of the seized chemicals, members of a clandestine laboratory team from New York City responded to help clean up the laboratory. Investigators from ICE, New York State Police, Erie County Sheriff's Office, Niagara County Sheriff's Office, Niagara County Drug Task Force, and Amherst Police Department also participated in the investigation.

NDIC Comment: Domestically produced MDMA is rare both in New York State and the rest of the country; this was the first MDMA laboratory seizure in New York reported to the National Clandestine Laboratory Seizure System. Most of the MDMA available in New York is smuggled from Europe to New York City by couriers on commercial aircraft and then transported throughout the state. Some MDMA also is smuggled from Europe to Toronto before it is transported into Buffalo via private vehicles.

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- INTELLIGENCE BRIEF -

TRAFFIC STOP RESULTS IN LARGE CODEINE SEIZURE

[From the NDIC *Narcotics Digest Weekly* 2004;3(28):3
Unclassified, Reprinted with Permission.]

On May 26, 2004, a Utah Highway Patrol (UHP) trooper arrested a 26-year-old male and a 27-year-old male and seized 13 gallons of promethazine cough syrup with codeine during a routine traffic stop on Interstate 70. The trooper initially stopped the vehicle for speeding. During routine questioning, the driver advised the trooper that he and his passenger were returning to Kentucky after a visit to Las Vegas. The trooper obtained and ran a check on the driver's Kentucky license. The trooper discovered that the driver's license had been suspended, and took the driver into custody. The trooper then called for backup and requested and received consent to search the vehicle. Another trooper arrived and both troopers searched the vehicle. The troopers discovered a snow cone making machine and 13 snow cone syrup containers in the trunk. The troopers became suspicious after noticing that 10 of the syrup containers had been opened and resealed. The passenger indicated that he had purchased the snow cone maker and syrup in California. The driver and the passenger were detained while a sample of the liquid was taken to a laboratory for immediate testing. When test results identified the substance as codeine, both were arrested and charged with possession of a controlled substance.

NDIC Comment: This was the third UHP seizure of codeine being transported from California to Kentucky since January 2003. Law enforcement officials in Kentucky report that the diversion of pharmaceuticals including codeine is an increasing threat. According to National Drug Threat Survey 2003 data, 51.5 percent of state and local law enforcement respondents in Kentucky report that codeine is commonly diverted and illicitly used in the state.

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- INTELLIGENCE BRIEF -

EFFECTS OF OKLAHOMA PSEUDOEPHEDRINE LAW REALIZED IMMEDIATELY

[From the NDIC *Narcotics Digest Weekly* 2004;3(28):3
Unclassified, Reprinted with Permission.]

The Oklahoma Bureau of Narcotics and Dangerous Drugs Control (OBNDDC) reports that the enactment of a law prohibiting over-the-counter sales of tablets containing pseudoephedrine, a precursor chemical used in the production of methamphetamine, has had an immediate effect on the number of methamphetamine laboratory seizures in the state. According to OBNDDC, the number of methamphetamine laboratory seizures in the state decreased from 90 in March 2004--the month before the law took effect--to 64 in April, to 29 in May. Additionally, law enforcement officials in other states report that methamphetamine producers from Oklahoma are traveling to neighboring states with less stringent pseudoephedrine control laws to obtain pseudoephedrine. For example, the Wichita Falls (TX) Police Department reports a sharp increase in the number of Oklahomans who travel to its jurisdiction near the Oklahoma border to purchase pseudoephedrine tablets.

NDIC Comment: Methamphetamine poses the greatest drug threat to Oklahoma, and in recent years the number of methamphetamine laboratories seized in the state has increased dramatically. According to OBNDDC, the number of methamphetamine laboratory seizures increased from 34 in 1995, to 924 in 2000, to 1,193 in 2001 before leveling off at 1,254 and 1,235 in 2002 and 2003, respectively. The level of violence associated with the production, distribution, and abuse of methamphetamine also has increased. Since 1999, three Oklahoma Highway Patrol troopers have been killed in methamphetamine-related incidents, the latest of which occurred in December 2003, when a trooper was murdered while attempting to arrest the alleged operator of a mobile methamphetamine laboratory.

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DEA OFFICE OF DIVERSION REQUEST FOR INFORMATION

TRYPTAMINES AND PHENETHYLAMINES

Recently there has been an increase in law enforcement encounters with a variety of unusual tryptamines and phenethylamines. These substances are not specifically scheduled within the federal Controlled Substances Act (CSA).

The tryptamines include:

- N,N-Dipropyltryptamine (DPT)
- N,N-Diisopropyltryptamine (DIPT)
- 5-Methoxy-N,N-diethyltryptamine (5-MeO-DET)
- 5-Methoxy-N,N-dimethyltryptamine (5-MeO-DMT)
- 5-Methoxy-alpha-methyltryptamine (5-MeO-AMT)
- 4-Methoxy-N-methyl-N-isopropyltryptamine (4-MeO-MIPT)
- 5-Methoxy-N-methyl-N-isopropyltryptamine (5-MeO-MIPT)
- N-Methyl-N-isopropyltryptamine (MIPT)
- 4-Hydroxy-N,N-diisopropyltryptamine (4-OH-DIPT)

The phenethylamines include:

- 2,5-Dimethoxy-4-ethylthiophenethylamine (2C-T-2)
- 4-Iodo-2,5-dimethoxy-phenethylamine (2C-I)
- 2,5-Dimethoxy-4(2-fluoroethylthio)phenethylamine (2C-T-21)
- 2,5-Dimethoxy-4-ethylphenethylamine (2C-E)
- 2,5-Dimethoxy-4-chlorophenethylamine (2C-C)
- 5-(2-Aminopropyl)indane (API)
- 5-Chloro-3,4-dimethoxyphenethylamine

The Drug and Chemical Evaluation Section (ODE) within the DEA's Office of Diversion Control is interested in documenting the abuse, diversion, trafficking, and public health risks of the above listed tryptamines and phenethylamines, as well as any other related substances. This information is being collected to document the need for possible placement (scheduling) of these substances under the CSA. Federal, state and local law enforcement agencies and forensic laboratories often provide valuable information for this purpose. ODE would appreciate receiving any information related to the law enforcement encounters, drug identification and abuse of the above mentioned tryptamines and phenethylamines, as well as any related substances. Please contact Dr. Srihari R. Tella, Pharmacologist in ODE, at (202) 307-7183 with any information pertaining to these substances. Information may also be provided to Dr. Tella by fax at (202) 353-1263, or by email to Srihari.R.Tella -at- usdoj.gov or by mail addressed to the Drug and Chemical Evaluation Section, Office of Diversion Control, Drug Enforcement Administration, Washington, DC 20537.

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SELECTED REFERENCES

[Notes: Selected references are a compilation of recent publications of presumed interest to forensic chemists. Unless otherwise stated, all listed citations are published in English. If available, the email address for the primary author is provided as the contact information. Listed mailing address information (which is sometimes cryptic or incomplete) exactly duplicates that provided by the abstracting services. In addition, in order to prevent automated theft of email addresses off the Internet postings of *Microgram Bulletin*, unless otherwise requested by the corresponding author, all email addresses reported in the *Bulletin* have had the "@" character replaced by "-at-"; this will need to be converted back (by hand) before the address can be used.]

1. Bogusz MJ. **Analysis of illicit drugs with chromatographic methods.** Separation Techniques in Clinical Chemistry 2003:221. [Editor's Notes: An extensive review on the title topic. Contact: Department of Pathology and Laboratory Medicine, King Faisal Specialist Hospital and Research Centre, Riyadh, Saudi Arabia.]
2. Garrido JMPJ, Delerue-Matos C, Borges F, Macedo TRA, Oliveira-Brett AM. **Electrochemical analysis of opiates - An overview.** Analytical Letters 2004;37(5):831. [Editor's Notes: An overview and review of the title topic, with an emphasis on morphine, codeine, and heroin. Contact: Univ Coimbra, Fac Ciencias & Tecnol, Dept Quim, P-3004535 Coimbra, Portugal.]
3. Kawase K, Ogawa Y, Watanabe Y. **Non-destructive terahertz imaging of illicit drugs using spectral fingerprints.** Optics Express 2003;11(20):2549. [Editor's Notes: The title technique is used to detect methamphetamine and MDMA inside envelopes. Contact: The Institute of Physical and Chemical Research, Hirosawa, Wako, Japan 351-0198.]
4. Littleford RE, Matousek P, Towrie M, Parker AW, Dent G, Lacey RJ, Smith WE. **Raman spectroscopy of street samples of cocaine obtained using Kerr gated fluorescence rejection.** Analyst 2004;129(6):505. [Editor's Notes: Presents the title study. Contact: Univ Strathclyde, Dept Pure & Appl Chem, 295 Cathedral St., Glasgow G1 1XL, Lanark, Scotland.]
5. Raevskii VG, Karev AI, Konyaev YA, Rumyantsev AS, Brazers L. **Method and device for detection and identification of concealed explosives and narcotics.** RU 2226686 C1 10 Apr 2004. CLASS: ICM: G01N023-00. APPLICATION: RU 2002-121666 14 Aug 2002. [Editor's Notes: Methodology is not clear from the abstract. The narcotics are not specified. This patent is written in Russian. Contact: Fizicheskii Institut im. P.N. Lebedeva RAN, Russia.]

Additional References of Possible Interest:

1. Multiple Authors. **Analytical Chemistry Fundamental Reviews 2004.** Analytical Chemistry 2004;76(12):3251 et seq. [Editor's Notes: Presents overviews and reviews of the following topics: Planar Chromatography, Solid State Nuclear Magnetic Resonance, Fiber-Optic Chemical Sensors and Biosensors, Electrochemical Sensors, Thermal Analysis, Atomic Spectroscopy, Environmental Mass Spectrometry (Emerging Contaminants and Current Issues), Chemometrics, Micro Total Analysis Systems (Recent Developments), Gas Chromatography, Inductively Coupled Plasma Mass Spectrometry, Mass Spectrometry of Synthetic Polymers, Scanning Probe Microscopy, and X-ray Spectrometry. See the issue for authors and contact information.]

2. Biermann T, Schwarze B, Zedler B, Betz P. **On-site testing of illicit drugs: The use of the drug-testing device "Toxiquick"**. Forensic Science International 2004;143(1):21. [Editor's Notes: Presents a study of the use of the title device on suspected impaired drivers in Germany. Contact: Department of Forensic Medicine, University Erlangen-Nuremberg, Universitaetsstrasse 22, Erlangen D-91054, Germany.]
3. Bogusz MJ. **Liquid chromatographic/mass spectrometry in forensic toxicology**. Advances in Forensic Applications of Mass Spectrometry 2004:63. [Editor's Notes: An extensive review of the title topic, focussing on toxicological applications. Contact: Department of Pathology and Laboratory Medicine, King Faisal Specialist Hospital and Research Centre, Riyadh, Saudi Arabia.]
4. Dimandja J-MD. **GC x GC**. Analytical Chemistry 2004;76(9):167A. [Editor's Notes: An overview and review of two-dimensional GC techniques. Contact: Spelman College (no further addressing information provided).]
5. Kapnissi CP, Warner IM. **Separation of benzodiazepines using capillary electrochromatography**. Journal of Chromatographic Science 2004;42(5):238. [Editor's Notes: Abstract suggests a biological focus. Contact: Louisiana State Univ, Dept Chem, Baton Rouge, LA 70803.]
6. Levisky JA, Bowerman DL, Jenkins WW, Boon JA, Levisky JS, Johnson DG. **The use of two different isotopic drug analogs as internal standards in the GC/MS quantitation of opiates in postmortem specimens: Demonstration of linearity with a single injection**. Meeting of the International Association of Forensic Sciences, 16th, Montpellier, France, Sept. 2-7, 2002:105. [Editor's Notes: Presents a novel and advantageous approach to the stable isotope dilution technique. Oxycodone, morphine, and hydrocodone were analyzed with the presented technique. Contact: El Paso County Coroner's Office, Colorado Springs, CO (zip code not provided in the abstract).]
7. Rabarjo TJ, Widjaja I, Roytrakul S, Verpoorte R. **Comparative proteomics of Cannabis sativa plant tissues**. Journal of Biomolecular Techniques 2004;15(2):97. [Editor's Notes: Presents the title study. Contact: verpoort -at- lacdr.leidenuniv.nl]
8. Ramon MF, Ballesteros S, Martinez-Arrieta R, Jorrecilla JM, Cabrera J. **Volatile substance and other drug abuse inhalation in Spain**. Journal of Toxicology, Clinical Toxicology 2003;41(7):931. [Editor's Notes: An overview and review of inhalant abuse in Spain, 1991 - 2000. Contact: Servicio de Informacion Toxicologica, Instituto Nacional de Toxicologia, Madrid, Spain.]
9. Schmid R. **Drug analysis - Potentials and limits**. Opiatabhaengigkeit 2003:193. [Editor's Notes: A review on drug analysis; appears to be primarily focused on biological matrices (unclear from the abstract). This article is written in German. Contact: Klinisches Institut fuer Krankenhaus Wien, A-1090 Vienna, Austria.]
10. Ueki M. **Fundamentals of mass spectrometry; Role of mass spectrometry in drug abuse testing and crime investigation**. Bunseki 2003(11):630. [Editor's Notes: A minor review of the title topic. May be a biological focus (not clear in the abstract). This article is written in Japanese. Contact: Dep. of BCL Doping Test, Mitsubishi Chemical Corp., Itabashi-ku, Tokyo, Japan 174-8555.]

11. Xie S, Aspromonte J, Balla A, Sershen H, Javitt DC, Cooper TB. **Sensitive and simple gas chromatographic - mass spectrometric determination for amphetamine in microdialysate and ultrafiltrate samples.** Journal of Chromatography B - Analytical Technologies in the Biomedical and Life Sciences 2004;805(1):27. [Editor's Notes: Uses NCI mode for detection of the pentafluorobenzoyl derivatives (biological focus). Contact: Inst Psychiat Res, Analyt Psychopharmacol Lab, 140 Old Orangeburg Rd, Orangeburg, NY 10962.]

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NEW EMAIL ADDRESSES NEEDED

The email addresses for the following organizations have returned rejection notices to the *Microgram* Editor for the past three issues of *Microgram Bulletin*, and will therefore be dropped from the subscription list unless a corrected email address is provided by December 1, 2004. Note that the errors include anti-spamming, mailbox full, user not found, or user unknown messages. The Editor requests your assistance in contacting these organizations, determining if they wish to remain on the *Microgram* subscription e-net, and if so asking them to provide a valid email address to the Editor at: [microgram_editor -at- mailsnare.net](mailto:microgram_editor-at-mailsnare.net)

Bexar County Medical Examiner's Office, San Antonio, Texas

Carabinieri Investigazioni Scientifiche Raggruppam, 00165 Rome, Italy

Louisiana State Police, North Delta Criminalistics Laboratory, West Monroe, Louisiana

New Hampshire Department of Corrections, Drug Testing Laboratory, Laconia, New Hampshire

Racine Health Department, Racine, Wisconsin

Washington State Department of Health, Olympia, Washington

The following organizations (listed in the July issue) were dropped on 11/1/04:

Mississippi Crime Laboratory, Jackson, Mississippi

Multi Area Narcotics Task Force, Defiance, Ohio

Nara Prefectural Police Headquarters, Forensic Science Laboratory, Nara, Japan

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THE DEA FY - 2004 STATE AND LOCAL FORENSIC CHEMISTS SEMINAR SCHEDULE

The FY - 2005 schedule for the DEA's State and Local Forensic Chemists Seminar is as follows:

December 6 - 10, 2004
February 7 - 11, 2005
May 9 - 13, 2005
July 11 - 15, 2005
September 19 - 23, 2005

Note that the school is open only to forensic chemists working for law enforcement agencies, and is intended for chemists who have completed their agency's internal training program and have also been working on the bench for at least one year. There is no tuition charge for this course. The course is held at the AmeriSuites Hotel in Sterling, Virginia (near the Washington/Dulles International Airport). A copy of the application form is reproduced on the last page of this issue of *Microgram Bulletin*, and may be photocopied. Completed applications should be mailed to the Special Testing and Research Laboratory (Attention: Pam Smith or Jennifer Kerlavage) at: 22624 Dulles Summit Court, Dulles, VA 20166. For additional information, call 703/668-3337.

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SCIENTIFIC MEETINGS

1. Title: AAFS 57th Annual Meeting (First Posting)
Sponsoring Organization: American Academy of Forensic Sciences
Inclusive Dates: February 21 - 26, 2005
Location: New Orleans, LA
Contact Information: See Website
Website: www.aafs.org

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2. Title: NOBCChE 32nd Annual Conference (First Bimonthly Posting)
Sponsoring Organization: National Organization for the Professional Advancement of Black Chemists and Chemical Engineers
Inclusive Dates: March 20 - 26, 2005
Location: J.W. Marriott Grande Lakes, Orlando, Florida
Contact Information: b_council -at- hotmail.com
Website: www.nobcche.org

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EMPLOYMENT OPPORTUNITIES

1. University of Massachusetts Medical School (First Posting)
Position: Laboratory Analyst II (Two Positions)
Location: Worcester, Massachusetts
Salary Range: \$32,032 - \$39,915, Commensurate with Experience
Application Deadline: Open Until Filled

Duties: Performs analytical analysis of evidence for identification and/or quantitation, records information. Performs and documents routine maintenance of equipment. Develops new assays and evaluates new equipment. Trains new personnel.

Provides testimony in court when necessary. Advises and aides DAL Evidence Officer on identification, classification, and handling of evidence.

Qualifications: B.S. in Chemistry or equivalent (requires strong emphasis on Chemistry) plus 3 years relevant experience or Master's Degree in Chemistry Forensic Science or equivalent and two years of relevant experience. Strong oral and written communicative skills necessary for interaction with other medical center staff as well as outside agencies.

Application Procedures: Apply on-line at: www.umassmed.edu. Search keyword: 04-1360. Or mail/fax a resume to: University of Massachusetts Medical School, Human Resources, 419 Belmont Street, Worcester MA 01604; fax 508-856-2390.

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2. Dupage County Crime Laboratory

(First Posting)

Position: Forensic Scientist II (Drug Chemistry)

Location: Wheaton, Illinois

Salary Range: \$37,700 - \$56,500

Application Deadline: Open Until Filled

Duties: Under immediate supervision, performs work in the examination, analysis and evaluation of physical evidence and unknown substances. Performs microscopical, chemical, chromatographic, and spectrophotometric analysis of unknown substances. Writes reports detailing the results of analysis and testifies as an expert witness in judicial proceedings. This is not an exhaustive list of responsibilities and other associated tasks may be expected.

Qualifications: Must have a bachelor's degree and two years full time drug analysis experience. It is preferred that the applicant has court-testimony experience (been accepted as an expert witness in the drug chemistry discipline). Trainees will not be considered for this position. Hired applicant will be required to successfully complete a competency test prior to assuming independent casework.

Application Procedures: If you meet the minimum qualifications and want to be considered for this position, please mail or email a resume or CV to:

Director John Collins
Crime Laboratory Director
DuPage County Sheriff's Office Crime Laboratory
501 N. County Farm Road
Wheaton, IL 60187
jcollins -at- dupageco.org

Additional Information: Please contact Supervisor Carina Thomas at (630) 407-2096, or cthomas -at- dupageco.org

Equal Opportunity Employer

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The proper management of a digital evidence program requires monitoring a variety of standard performance measures, such as laboratory and individual examiner productivity, unit cost per analysis, and evidence turnaround time. Most digital evidence laboratory managers monitor their operations in these ways.

However, it is even more critical to regularly assess the overall impact of a digital evidence program. Focusing exclusively on resource allocation and/or program execution measurements ignores the two most important questions: (1) Why does an organization have a digital evidence laboratory?; and (2) How effective is that laboratory to the organization's mission?

When considering these two questions, there are clear and significant differences between the private and public sectors. Private industry is ultimately concerned with profit and shareholder wealth. Public Sector organizations, however, are focused on public policy objectives (usually law enforcement and/or intelligence goals).

The private sector usually measures effectiveness as a return on investment. This is typically measured as net profit,

but other factors such as opportunity costs, risk/reward calculations, long term market penetration, and market share are also considered. In most cases, such measures are easily quantifiable.

However, Public Sector program effectiveness measures (ends) are often improperly mingled with or confused with performance measures (management of means), despite rigorous annual budget reviews, innumerable inspection reports, and a mature body of knowledge published by the public administration academia. Qualitative outcomes, not quantitative measures, are the norm.

For example, typical Public Sector digital evidence budget or performance briefings will provide exponential evidence/case submission graphs, incomprehensible "Terabyte Processed" comparison charts, files searched statistics, and similar abstract measurements of examiner or laboratory activities and/or productivity. Presentation of such information is not an effective executive level briefing technique, because it does not address program usefulness or impact.

Every digital evidence program needs to quickly and clearly

address these issues if it is to be successful in acquiring the required budgetary and human resources to fulfill its role. Otherwise, law enforcement executive management will be unable to understand or justify requests for support, or allocate (or redistribute) the required resources.

It is important to recognize that digital evidence examinations in law enforcement are a means to an end. Digital evidence examinations support investigations by recovering information of potential probative value, consistent with forensic best practices. Very rarely is a digital evidence examination the sole investigative activity. It is "just" another forensic investigative tool (albeit a very powerful one) available to the investigator. It logically follows that the proper effectiveness measure(s) for a digital evidence laboratory must assess the impact that the digital evidence examinations have had on case investigations and prosecutions.

DEA has conducted two case agent effectiveness surveys over the last decade. Both of these surveys asked one basic question: "As a result of the digital evidence examination provided in your case, how important was that support to the case's outcome(s)?" The case

agents were given a range of choices as possible responses, including: Not Important, Somewhat Important, Important, and Essential. To further expand on the summary assessments, the case agents were requested to identify the significant outcome(s), again using a range of possible responses, including: Corroboration of prior investigative information, Identification of unknown co-conspirators, Identification of financial assets, Documentation of overt criminal acts, Used in court testimony, Used in plea bargain negotiation(s), Used in sentencing hearing(s), Used in hearing(s) before an administrative law judge, and Used as an intelligence product.

Secondary effectiveness measures may also be included, primarily to identify areas that may need improvement. These can include, for example, questions relating to the timeliness of the examination, thoroughness of the examination, format and usefulness of the final report, and overall performance of the examiner. Such inquiries are good, indirect measures of laboratory support effectiveness.

Although not especially useful for briefings, statistical information can also be useful when evaluating the long-term performance of a digital evidence program. Quantitative measures such as gigabytes or terabytes searched, numbers of e-mails recovered, or numbers of pictures found, are useful statistics for comparing the volume of data from month-to-month or year-to-year.

However, it is important to avoid getting fixated on the numbers. The most important measure of overall effectiveness is always to what degree the digital evidence examination benefited the case or advanced a criminal justice initiative.

Program effectiveness measurements are a critical component in the development of a digital evidence program. Without solid documentation of the unique benefits resulting from the program, digital evidence laboratory managers will not be successful in acquiring required resources. Periodic, formal surveys of customers are highly recommended as a tool to document program effectiveness. Surveys need not be lengthy or overly complex. Use of departmental network based e-mail surveys can be very efficient.

Questions or comments:
E-mail: Michael.J.Phelan -at- usdoj.gov

DEA State and Local Forensic Chemists Seminar Application

Name: (PRINT NAME EXACTLY AS IT IS TO APPEAR ON CERTIFICATE)		Title:	
Employer:			
Your Office Mailing Address (include city, state and zipcode)			Length of Service
Business Telephone () -	Business Fax () -	Date of Application	
Email Address			
Education			
University	Degree	Major	
Please Check Which Techniques or Equipment Are Used in Your Lab			
Color Tests		UV	
Column Chromatography		IR	
Microcrystal tests		CE	
Thin Layer Chromatography		GC/MS	
GC		IR	
HPLC		Other(please specify)	
Indicate Analytical Problem(s) Nominee Would Like to Have Covered:			
Choice of Seminar Dates:			
1st Choice:		2nd Choice:	
Laboratory Chief/Director:			
Printed Name : _____		Signature: _____	
Title: _____		Date: _____	
Phone: _____			