

# Microgram

## *Bulletin*

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- JUNE 2007 -

- INTELLIGENCE ALERT -

### ECSTASY TABLETS WITH GLITTER IN HOWARD COUNTY, MARYLAND

The Maryland State Police Forensic Sciences Division Laboratory (Pikesville, Maryland) recently received two separate submissions of green tablets containing glitter with a “Waving Man” logo, suspected Ecstasy (see Photo 1). The first submission consisted of 30 tablets (total net mass 8.1 grams), and were part of a polydrug seizure made by the Howard County Police from an individual in West Columbia. The second submission consisted of 10 tablets (total net mass 2.7 grams), and were part of a polydrug seizure also made by the Howard County Police, pursuant to a search and seizure warrant for suspected illicit drug activity at an apartment also in West Columbia. All of the tablets were well formed and did not crumble during handling. Analysis using a combination of color testing, FTIR/ATR, GC, and/or GC/MS confirmed MDMA, along with a small amount of niacinamide and trace methamphetamine (not confirmed). The MDMA was not quantitated but appeared to be above average based on the chromatograms and TICs. Other than minor variations in the percentages and relative ratios of the MDMA, niacinamide,



Photo 1

and methamphetamine, the two sets of tablets were nearly identical in both appearance and chemical makeup. These are the first submissions of Ecstasy tablets containing glitter to the laboratory. No additional seizures of these tablets have been reported since these two submissions.

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**- INTELLIGENCE ALERT -**

**PHENTERMINE COUNTERFEITS (CONTAINING ACETAMINOPHEN)  
IN PASADENA, TEXAS**

The Pasadena Regional Crime Laboratory (Texas) recently received a submission of approximately 100 oval white tablets with blue speckles, each imprinted with "A 159" and half-scored on one face (see Photo 2; scale tick-marks are 1/8th inch). The tablets were turned into the Pasadena Police by a private citizen who had found them in their child's rucksack. The tablet packaging was not included, but allegedly indicated that the tablets had been produced in and shipped from Pakistan, apparently filling an order made on an Internet website. An Internet search indicated that the tablet type and imprint were consistent with a pharmaceutical phentermine product. However, although most of the tablets appeared to be in good condition, a number of fragments and powder from broken tablets was noted, and subsequent handling showed that the tablets were not properly compressed and crumbled easily, suggesting that the tablets were not a legitimate pharmaceutical product. Analysis of the tablets (weight not determined) by UV and GC/MS indicated not phentermine but rather only acetaminophen. This submission is this laboratory's first encounter with counterfeit phentermine tablets.



**Photo 2**

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**- INTELLIGENCE ALERT -**

**HEROIN PELLETS SMUGGLED FROM ECUADOR INSIDE COOKIE PACKAGES  
AT NEWARK INTERNATIONAL AIRPORT**

The DEA Northeast Laboratory (New York, New York) recently received 12 large packages of chocolate wafer-style cookies, each containing 6 smaller sleeve packages, most containing 7 pellets of a tan colored, compressed powder, suspected heroin (see Photos 3 and 4, next page). The exhibits were seized by Immigration and Customs Enforcement personnel from the luggage of a passenger arriving at Newark Liberty International Airport (New Jersey) on a flight from Guayaquil, Ecuador. The pellets appeared to be quite similar to those typically recovered from "swallowers," and were 1 1/2 x 5/8 inches and wrapped in a combination of wax paper and clear plastic. Analysis of the powder (total net mass 4.19 kilograms in 500 pellets) by color

testing, GC/FID, GC/MS, and FTIR/ATR confirmed 70 percent heroin hydrochloride, adulterated with caffeine. The Northeast Laboratory routinely receives heroin concealed in various types of containers and packaging, including within candies and inside candy wrappers.



**Photo 3**



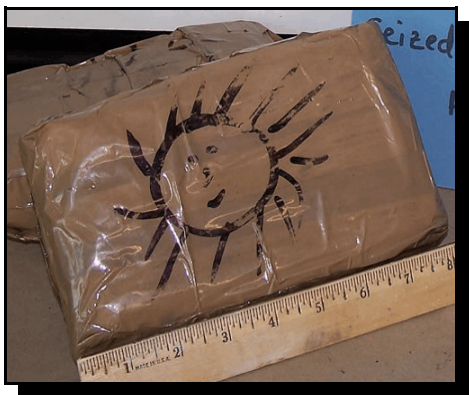
**Photo 4**

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**- INTELLIGENCE ALERT -**

**VERY LARGE BLACK TAR HEROIN SEIZURE IN ANAHEIM, CALIFORNIA**

The DEA Southwest Laboratory (Vista, California) recently received 8 large packages containing dark brown materials, suspected black tar heroin. The packages were marked with either a smiling sunshine logo or the word “Mayey,” and were wrapped either in brown tape or cellophane and carbon paper (see Photos 5 and 6). The exhibits were part of a polydrug seizure made by Immigration and Customs Enforcement at a residence in Anaheim; in addition to more packages of the brown powder, about 15 kilograms of marijuana, 1.5 kilograms of dimethylsulfone, and sodium hydroxide were also seized. Analysis of the material (total net mass in the 8 submitted exhibits 31.82 kilograms) by FTIR/ATR, GC/FID, and GC/MSD confirmed heroin (calculated as the hydrochloride) varying from 5.2 - 12.7 percent, with most bricks also containing large amounts of noscapine (not quantitated). This was one of the largest ever seizures of black tar heroin in California history.



**Photo 5**



**Photo 6**

**- INTELLIGENCE ALERT -**

**KHAT IN DECATUR, GEORGIA**

The DEA Southeast Laboratory (Miami, Florida) recently received a cardboard box containing 96 bundles of decomposing plant material, wrapped in banana leaves and layers of newspaper, apparent khat (see Photo 7). The exhibit was seized by agents from the DEA/Atlanta Field Division at a commercial carrier facility in Decatur, Georgia. Analysis of the leaves (total net mass 8,671 grams) by GC/MS confirmed cathinone (not quantitated). This was the first khat submission to the Southeast Laboratory in several years. Approximately one month after this first submission a second exhibit containing 71 bundles of similar material was seized at the same commercial carrier facility, and was also identified as khat (total net mass 5,545 grams; not quantitated). The shipping origin(s) for the exhibits was not reported. The last submission of khat to the Southeast Laboratory was in 1997.



**Photo 7**

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**- INTELLIGENCE BRIEF -**

**FOLLOWUP: “CHEESE” (HEROIN ADULTERATED WITH DIPHENHYDRAMINE AND ACETAMINOPHEN) CONTINUING IN DALLAS, TEXAS**

In the May, 2006 issue of Microgram Bulletin, a Special Intelligence Brief reported on the phenomenon of “Cheese,” a so-called “starter form” of heroin that is popular primarily among Hispanic youth in the Dallas Independent School District (DISD). At that time, analyses of “Cheese” samples showed that it contained acetaminophen, diphenhydramine hydrochloride, and up to 8 percent heroin. It is now well established that “Cheese” is manufactured by mixing a small quantity of heroin (probably black tar heroin) with a large quantity of crushed Tylenol-PM® caplets (that is, an Over-the-Counter formulation of acetaminophen and diphenhydramine hydrochloride marketed as a sleep aid).



**Photo 8**

Over the past year, “Cheese” has gained additional notoriety, with approximately 2 dozen major articles published in the mainstream media concerning its use. The DEA South Central Laboratory (Dallas, Texas) has recently analyzed numerous samples of “Cheese” provided by the DISD Police, using FTIR, GC/FID, and GC/MS (see Photo 8).

The qualitative results for 15 such samples submitted to the laboratory in March 2007, are reported below.

Received	Analyzed	Results
3/19/2007	3/19/2007	Heroin, Acetaminophen, Diphenhydramine
3/19/2007	3/19/2007	Heroin, Acetaminophen, Diphenhydramine
3/19/2007	3/19/2007	Heroin, Acetaminophen, Diphenhydramine
3/19/2007	3/19/2007	Heroin, Acetaminophen, Diphenhydramine
3/19/2007	3/19/2007	Heroin, Acetaminophen, Diphenhydramine
3/19/2007	3/20/2007	6-Monoacetylmorphine, Acetaminophen, Diphenhydramine
3/19/2007	3/20/2007	6-Monoacetylmorphine, Acetaminophen, Diphenhydramine
3/19/2007	3/20/2007	Heroin, Acetaminophen, Diphenhydramine
3/21/2007	3/21/2007	Heroin, Acetaminophen, Diphenhydramine
3/30/2007	4/2/2007	Heroin, Methamphetamine, Acetaminophen, Diphenhydramine
3/30/2007	4/2/2007	Heroin, Diphenhydramine, Acetaminophen
3/30/2007	4/3/2007	Heroin
3/30/2007	4/3/2007	Heroin, Acetaminophen, Diphenhydramine
3/30/2007	4/3/2007	No Detectable Controlled Substances
3/30/2007	4/3/2007	Methamphetamine, Heroin, Acetaminophen, Diphenhydramine

Of the 15 samples, 9 appeared to meet the classic definition of “Cheese.” One sample contained only heroin, two contained 6-monoacetylmorphine instead of heroin (probably resulting from the decomposition of heroin in the original “Cheese” sample), two appeared to be “Cheese” that also contained a small amount of methamphetamine, and one had no controlled substances. The average heroin quant for these samples (calculated as the hydrochloride) was 2.0 percent.

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## SELECTED REFERENCES

[Selected references are a compilation of recent publications of presumed interest to forensic chemists. Unless otherwise stated, all listed citations are published in English. Abbreviated mailing address information duplicates that provided by the abstracting service. Patents and Proceedings are reported only by their *Chemical Abstracts* citation number.]

1. Baer I, Gurny R, Margot P. **NIR analysis of cellulose and lactose - Application to ecstasy tablet analysis.** *Forensic Science International* 2007;167(2-3):234. [Editor’s Notes: Presents the title technique. Appears to be a feasibility study. The results can be used for general classifications of samples. Approximately 40 samples were analyzed. Contact: Institut de Police Scientifique, Universite de Lausanne, BCH, Lausanne-Dorigny 1015, Switz.]
2. Baer I, Margot P. **Sugar and fatty acid analysis in ecstasy tablets.** *Forensic Science International* 2007;167(2-3):229. [Editor’s Notes: Two different GC/MS techniques were used. The results can be used for classifications of samples. 109 tablets were analyzed. Contact: Institut de Police Scientifique, Universite de Lausanne, BCH, Lausanne-Dorigny 1015, Switz.]

3. Bogusz MJ. **LC-MS of drugs of abuse and related compounds.** Applications of LC-MS in Toxicology 2006;149. [Editor's Notes: A Review. Contact: Department of Pathology and Laboratory Medicine, King Faisal Specialist Hospital and Research Centre, Riyadh, Saudi Arabia.]
4. Brown AJ, Lenehan CE, Francis PS, Dunstan DE, Barnett NW. **Soluble manganese (IV) as a chemiluminescence reagent for the determination of opiate alkaloids, indoles, and analytes of forensic interest.** Talanta 2007;71(5):1951. [Editor's Notes: Flow injection analysis was used; 16 different analytes were determined. Contact: School of Life and Environmental Sciences, Deakin University, Geelong 3217, Australia.]
5. Causin V, Marega C, Carresi P, Schiavone S, Marigo A. **A quantitative differentiation method for plastic bags by wide angle X-ray diffraction for tracing the source of illegal drugs.** Forensic Science International 2007;168(1):37. [Editor's Notes: 33 grocery bags were analyzed. Contact: Dipartimento di Scienze Chimiche dell'Universita, via Marzolo 1, Padua 35131, Italy.]
6. Levy R, Zelkowicz A, Abu E, Ravreby MD. **"Life expectancy" of "ecstasy" tablets in Israel in the years 2001 - 2003.** Forensic Science International 2007;167(1):22. [Editor's Notes: Tracked the logos on ecstasy tablets from first to last appearance (average was 9 months). Contact: Analytical Chemistry Laboratory, National Police Headquarters, Division of Identification and Forensic Science (DIFS), Haim Bar-Lev Road, Jerusalem 91906, Israel.]
7. Locicero S, Hayoz P, Esseiva P, Dujourdy L, Besacier F, Margot P. **Cocaine profiling for strategic intelligence purposes. A cross-border project between France and Switzerland.** Forensic Science International 2007;167(2-3):220. [Editor's Notes: Presents the results of an effort to optimize and harmonize the profiling techniques used to analyze cocaine by GC at two different laboratories. A number of different parameters (derivatizing agents, storage conditions, solvents, etc.) were tracked. Eight different cocaine alkaloids were the basis of the signature. Contact: Institut de Police Scientifique, Ecole des Sciences Criminelles, Universite de Lausanne, BCH, Lausanne-Dorigny 1015, Switz.]
8. Martello S, Felli M, Chiarotti M. **Survey of nutritional supplements for selected illegal anabolic steroids and ephedrine using LC-MS/MS and GC-MS methods, respectively.** Food Additives & Contaminants 2007;24(3):258. [Editor's Notes: 64 nutritional supplements were analyzed; 8 were found to contain banned substances. Contact: Istituto Medicina Legale, Universita Cattolia del Sacro Cuore, I-00168 Rome, Italy.]
9. Matsumoto T, Kikura-Hanajiri R, Kamakura H, Kawahara N, Goda Y. **Identification of N-methyl-4-(3,4-methylenedioxyphenyl)butan-2-amine, distributed as MBDB.** Journal of Health Sciences 2006;52(6):805. [Editor's Notes: The title compound (abbreviated by the authors as "HMDMA") is the positional isomer of MBDB, and is being sold in Japan. The characterization of this compound, and its comparison with MBDB and related compounds, is presented. Contact: National Institute of Health Sciences, Tokyo, Japan 158-8501.]
10. Mohammadzai IU, Khan M, Irfan M, Khan N, Usman S. **Physical characteristics, inorganic constituents, and trace metals determination in the street-vended samples of heroin.** Pakistan Journal of Scientific and Industrial Research 2006;49(4):251. [Editor's Notes: Samples from 4 different regions of the Northwest Frontier province were compared with samples from Peshawar city and a pure heroin standard. The analytical method was not reported in the abstract. Contact: Department of Chemistry, University of Peshawar, Peshawar, Pak.]

11. Shibuya EK, Sarkis JES, Negrini-Neto O, Martinelli LA. **Carbon and nitrogen stable isotopes as indicative of geographical origin of marijuana samples seized in the city of Sao Paulo (Brazil).** Forensic Science International 2007;167(1):8. [Editor's Notes: About 150 samples were analyzed. The technique was not specified in the abstract (but was likely IRMS, based on the authors' prior work in this field (see below)). Contact: Laboratorio de Caracterizaco Quimica e Isotopica, Centro de Quimica e Meio Ambiente, Instituto de Pesquisas Energeticas e Nucleares, IPEN/CNEN-SP, Av. Lineu Prestes 2242, Cidade Universitaria, Sao Paulo, SP CEP 05508-900, Brazil. This article appears to be a followup to: Shibuya EK, Souza-Sarkis JE, Negrini-Neto O, Moreira MZ, Victoria RL. **Sourcing Brazilian marijuana by applying IRMS analysis to seized samples.** Forensic Science International 2006;160(1):35.]
12. Terrettaz-Zufferey A-L, Ratle F, Ribaux O, Esseiva P, Kanevski M. **Pattern detection in forensic case data using graph theory: Application to heroin cutting agents.** Forensic Science International 2007;167(2-3):242. [Editor's Notes: Uses pattern recognition techniques to establish links between samples (the specific cutting agents were not detailed in the abstract). Contact: Institut de Police Scientifique et de Criminologie, Ecole des Sciences Criminelles, Universite de Lausanne, Batochime CH-1015, Switz.]

#### **Additional References of Possible Interest:**

1. Ebejer KA, Winn J, Carter JF, Sleeman R, Parker J, Koerber F. **The difference between drug money and a "lifetime's savings."** Forensic Science International 2007;167(2-3):94. [Editor's Notes: Examines the rate of transfer of heroin from contaminated to non-contaminated bills, under three different scenarios. Contact: Building 20F, Golf Course Lane, Mass Spec Analytical Ltd., P.O. Box 77, Filton, Bristol BS34 7QS.]
2. Gosav S, Praisler M, Dorohoi DO. **ANN expert system screening for illicit amphetamines using molecular descriptors.** Journal of Molecular Structure 2007;834-836:188. [Editor's Notes: Presents the use of an artificial neural network to predict the biological activity of various amphetamines and related compounds, based on the activity of known illicit amphetamines and other related compounds. The database was created based on 146 compounds (none specified in the abstract). Contact: Department of Physics, "Dunarea de Jos" University, Str. Domneasca nr. 47, Galati, Rom.]
3. Kotrly M. **Using X-ray diffraction in forensic science.** Zeitschrift fuer Kristallographie 2007;222(3-4):193. [Editor's Notes: A review (may include illicit drugs). Contact: Institute of Criminalistics Prague, Prague 170 82/7, Czech Rep.]
3. Ninomiya T. **Synchrotron radiation for scientific criminal investigation.** Feramu 2007;12(2):65. [Editor's Notes: A review (may include illicit drugs). This article is written in Japanese. Contact: Japan Synchrotron Radiation Research Institute (JASRI), Japan.]
4. Ridder T, Ver Steeg B, McNally J, Maynard JD, Abbink RE. **Apparatus and method for noninvasively monitoring for the presence of alcohol or substances of abuse in controlled environments.** (Patent) Chemical Abstracts 2007;146:310844f.
5. Willis RC. **Noninvasive testing for counterfeit drugs.** Analytical Chemistry 2007;79(5):1773. [Editor's Notes: A quick overview of the use of Spatially Offset Raman Spectroscopy to identify pharmaceutical products through packaging. The focus is identification of counterfeits and generic products. Contact: No contact information was provided.]

## SCIENTIFIC MEETINGS

**Title:** CLIC 17th Annual Technical Training Seminar (First Posting)  
**Sponsoring Organization:** Clandestine Laboratory Investigating Chemists Association  
**Inclusive Dates:** September 4 - 8, 2007  
**Location:** Flamingo Hotel, Las Vegas, NV (\$112/night plus tax)  
**Contact Information:** Patty Dougherty ([pdougherty-at-stlouisco.com](mailto:pdougherty-at-stlouisco.com); 314/615-5366) or Roger Ely ([roger.ely-at-sbcglobal.net](mailto:roger.ely-at-sbcglobal.net); 925/787-6795)  
**Website:** None

### Additional Details:

September 4th: Hallucinogenic Tryptamine and Phenethylamine Analogs Workshop  
Cost: Members \$100; Non-Members \$125  
Note: Limited to law enforcement personnel only

September 5th - 8th: Seminar  
Cost: Members \$300; Non-Members \$350

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## EMPLOYMENT OPPORTUNITIES

**Position:** Forensic Scientist (Chemist) (Third Posting)  
**Location:** Montana Forensic Science Division; Missoula, Montana  
**Salary:** \$42,931 to \$53,664  
**Application Deadline:** July 15, 2007 (Faxed applications will not be accepted)

**Duties and Responsibilities:** Independently analyze evidence to identify controlled substances utilizing scientific testing procedures. Perform analyses of chemicals seized in clandestine laboratories to determine methods of manufacture and products produced. Identify adulterants, poisons, and discrepancies in product formulations related to product tampering investigation. Maintain accurate chain of custody records on evidence examined. Prepare written reports, including documentation of analyses performed and final conclusions. Provide expert testimony in courts of law. Experienced in maintaining scientific equipment, including quality control documentation. Provide instruction to law enforcement officers regarding evidence collection and preservation. Review casework for accuracy and adherence to standard operating procedures. The ideal applicant will also be proficient in the application of ASTM methods used in the analysis of fire debris. Performs other duties as assigned.

**Qualifications:** A minimum of a B.S. in Chemistry or related field with 3 years experience in a forensic laboratory specializing in the analysis of controlled substances. Additional experience in the analysis of fire debris is preferred.

**Contact:** Jim Hutchison, Chemical Analysis Supervisor  
Montana Forensic Science Division  
[jhutchison-at-mt.gov](mailto:jhutchison-at-mt.gov) (406/329-1114)

Applications may be obtained at: <http://mt.gov/statejobs/statejobs.asp>

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[Computer Corner will return in a future issue of *Microgram Bulletin*.]