U.S. Department of Justice
Drug Enforcement Administration

www.dea.gov

Microgram Bulletin

Published by:
The Drug Enforcement Administration
Office of Forensic Sciences
Washington, DC 20537

The U.S. Attorney General has determined that the publication of this periodical is necessary in the transaction of the public business required by the Department of Justice. Information, instructions, and disclaimers are published in the January issues.

- SEPTEMBER 2008 -

- INTELLIGENCE ALERT -

OXYCONTIN® MIMIC TABLETS (ACTUALLY CONTAINING NITRAZEPAM, CODEINE, AND CHLORPHENIRAMINE) IN TORONTO, CANADA

Photo 1

Photo 2

The Canada Border Services Agency (CBSA) Laboratory in Ottawa, Canada recently received five green tablets (poorly) imprinted with “80” on one face and “CDN” on the opposite face, suspected to be counterfeit Canadian OxyContin® 80 milligram tablets (see Photos 1 - 2). The exhibits were selected from 4,482 such tablets that were seized by CBSA personnel at an International Mail Centre located in Toronto (the shipment originated in India and was hidden in a dog food package). The tablets (film-coated over a cream-colored interior) averaged 9.1 millimeters in diameter, 4.6 millimeters thick, and 381 milligrams. Analysis by FTIR and GC/MS, however, indicated not oxycodone but rather a mixture of nitrazepam, codeine, and chlorpheniramine (not formally quantitated, however, nitrazepam was the predominant ingredient based on the FTIR spectrum and the TIC). This is the first submission of OxyContin® mimic tablets to the laboratory.

- INTELLIGENCE ALERT -

PSILOCYBE MUSHROOM CHOCOLATE BARS IN FLAGSTAFF, ARIZONA

The Arizona Department of Public Safety Northern Regional Crime Laboratory (Flagstaff) recently received 174 designer-label chocolate bars that contained plant material, suspected to be either marijuana or *Psilocybe* mushrooms (see Photo 3). The exhibits (total net mass 10.7 kilograms) were seized in Flagstaff by Arizona Department of Public Safety personnel, incidental to a traffic stop where marijuana was found, and were not originally suspected to contain any controlled substance. However, upon visual inspection, the wrappings were noted to be substandard in appearance (this was confirmed upon direct comparison with the authentic product). Furthermore, upon opening, the suspect bars' wrappings were made from paper with a different texture and were glued together in a different fashion, and the bars were not wrapped in gold foil like the authentics (see Photo 4a). The suspect bars also lacked the characteristic logos

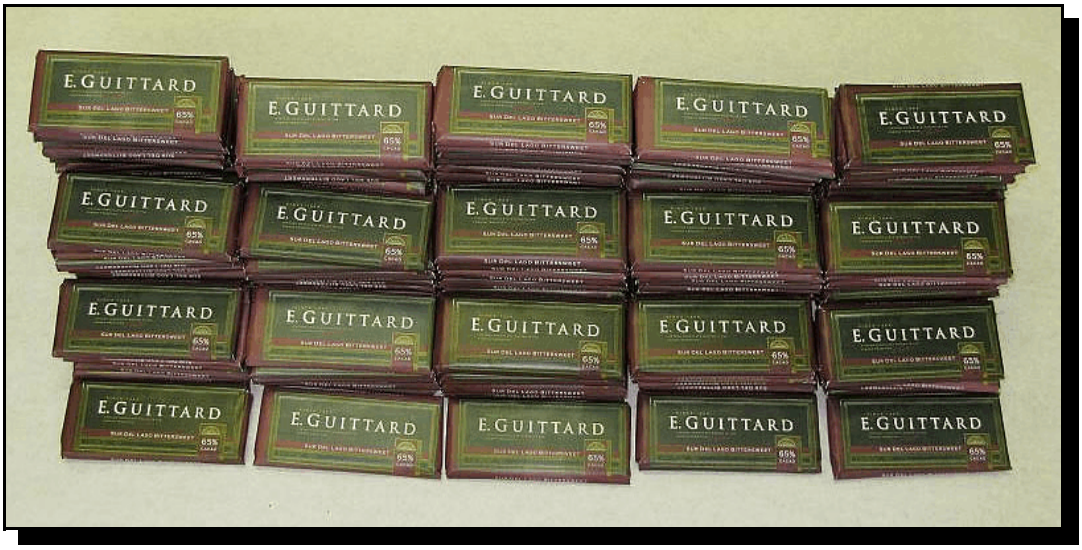

Photo 3 (Counterfeits)

Photo 4a - Authentic (Left) vs. Counterfeit (Right)

Photo 4b - Closeup of the Authentic

Photo 4c - Closeup of the Counterfeit

present on the authentics, were segmented in rectangles of noticeably different geometry, were not well manufactured or homogeneous, and contained plant material (see Photos 4b, 4c, 5, and 6). After acid/base workup and extraction with chloroform, the concentrated extract was analyzed by color testing (PDMAB - positive) and GC/MS indicated psilocin (not quantitated). Theobromine and caffeine (both expected to be present in chocolate) were also identified but not confirmed. This was the first ever submission of "psilocybin chocolates" to the laboratory.

Photo 5 - Bottom of Authentic Product

Photo 6 - Bottom of Counterfeit Product

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- INTELLIGENCE BRIEF -

COCAINE BRICKS IN CLEVELAND, OHIO

The Ohio Attorney General's Bureau of Criminal Identification and Investigation Richfield Laboratory recently received three sub-kilogram bricks of compressed white powders, two with a "USS" logo and one with a "10" logo (large "1" / small "0"), apparent cocaine (see Photos 7 and 8). The bricks were seized in Cleveland by personnel from the Cleveland HIDTA Task Force (no further details). Analysis of the powders (total net mass 2.00 kilograms) by color testing (cobalt thiocyanate), microcrystal testing (gold bromide), GC/MS, and FTIR confirmed cocaine (not formally quantitated but a high percent based on the TIC). Although cocaine bricks are routinely submitted to the laboratory, these logos were unique.

Photo 7

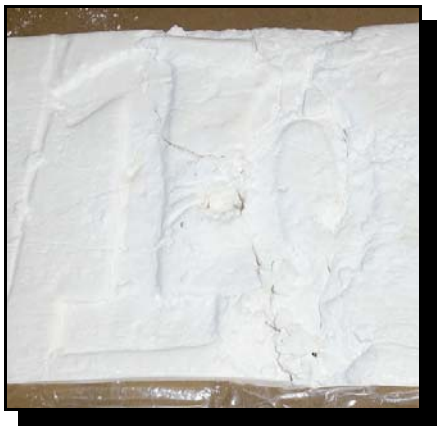

Photo 8

- INTELLIGENCE BRIEF -

BLACK TAR HEROIN IN CARTHAGE, TENNESSEE

The Tennessee Bureau of Investigation Laboratory in Nashville recently received three plastic bags with inner vacuum-sealed bag(s) containing a dark, hard, gum-like substance (total net mass approximately 11 kilograms), suspected black-tar heroin (see Photo 9). The exhibits were seized in Carthage by 21st District Drug Task Force personnel(no further details). The material became more gummy when exposed to air. Analysis of one exhibit (2 kilograms) by GC/MS and GC/FTIR confirmed heroin (not quantitated, but a high loading based on the TIC). This was the largest such submission ever to the laboratory.

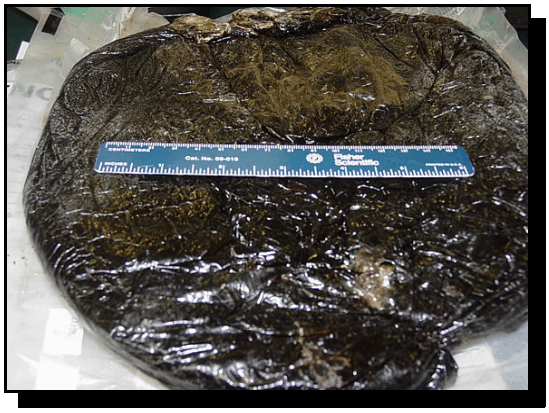

Photo 9

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- INTELLIGENCE ALERT -

l-METHAMPHETAMINE HYDROCHLORIDE AND A NON-RACEMIC MIXTURE OF *d*- AND *l*- METHAMPHETAMINE HYDROCHLORIDE IN PORTLAND, OREGON

The DEA Western Laboratory (San Francisco, California) recently received two plastic bags of crystalline material, one white (total net mass 196.4 grams) and the other off-white to white (total net mass 219.8 grams), both suspected methamphetamine (no photos). The exhibits were seized in Portland, Oregon by the Federal Bureau of Investigation (no further details). Analysis of the white crystals by FTIR/ATR and GC/FID (underivatized and following derivatization with trifluoroacetylprolyl chloride) confirmed 97.8% *l*-methamphetamine hydrochloride and dimethyl sulfone (not quantitated). Analysis of the off-white to white crystals (same techniques) confirmed 40.6% methamphetamine hydrochloride, primarily the *d*- isomer but with a small amount of the *l*- isomer, and dimethyl sulfone (not quantitated). Over the past year, the DEA Western Laboratory has seen an increasing number of exhibits containing either pure *l*-methamphetamine or non-racemic mixtures of *d*- and *l*- methamphetamine.

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- INTELLIGENCE ALERT -

"ICE" METHAMPHETAMINE BRICKS CONTAINING CONCEALED BAGS OF COCAINE HYDROCHLORIDE NEAR WELLINGTON, KANSAS

The DEA North Central Laboratory (Chicago, Illinois) recently received a two-part submission consisting of 14 red plastic wrapped, plastic containers, each containing a white crystalline powder (suspected methamphetamine), and 28 gray duct tape wrapped, plastic wrapped, topless plastic containers, each containing a similar white crystalline powder (also suspected

methamphetamine). Three of the duct taped bricks were strung together with cords attached to wooden pegs that were taped to the bricks' sides (see Photo 10; the cords were an aid to remove all 42 containers from a confined space). One of these latter bricks also contained two small plastic bags of white powder in the white, crystalline powder (no photo). The exhibits were seized by the Kansas Highway Patrol during a routine traffic stop on I-395 near Wellington (no further details). The exhibits were subdivided into 3 groups based on packaging and initial screens. Analyses were conducted using color tests, GC/MS, GC/FID, and FTIR. Analysis of the first exhibit (red containers, total net mass 8.89 kilograms) confirmed 99.7% *d*-methamphetamine hydrochloride. Analysis of the second exhibit (duct-taped bricks, total net mass 12.35 kilograms) confirmed 97.7% *d*-methamphetamine hydrochloride. Analyses of the third exhibit (2 plastic bags, total net mass 57.5 grams) confirmed 71.5% cocaine hydrochloride and phenyltetrahydroimidazothiazole (levamisole, not quantitated). It is unclear why the bags of cocaine were placed in the methamphetamine.

Photo 10

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- INTELLIGENCE ALERT -

HEROIN / ALPRAZOLAM MIXTURE IN LINTHICUM, MARYLAND

The DEA Mid-Atlantic Laboratory (Largo, Maryland) recently received two plastic bags of brown powder, suspected heroin (see Photo 11). The exhibits were originally hidden within a hollowed-out book that was being shipped by an express mail service, and were seized in Linthicum, Maryland by Immigration and Customs Enforcement (ICE) personnel. The powder (total net mass 147.3 grams) had the consistency of slightly dried brown sugar. Analysis by GC and GC/MS confirmed 11.2% heroin, 18.7% O6-monoacetylmorphine, 9.0% morphine (all calculated as the hydrochlorides), codeine (<5%), 11.9% alprazolam, caffeine, and lidocaine. Although the Mid-Atlantic Laboratory has previously received heroin containing alprazolam, the relative percentage of alprazolam in this seizure is extremely high (commercial Xanax® tablets contain either 1 or 2 milligrams of alprazolam).

Photo 11

- INTELLIGENCE ALERT -

METHANDROSTENOLONE MIMIC TABLETS (ACTUALLY CONTAINING 17α-METHYLDROMOSTANOLONE) IN ERIE, PENNSYLVANIA

The DEA Special Testing and Research Laboratory (Dulles, Virginia) recently received two exhibits, each containing 10 pink pentagonal tablets, suspected to be methandrostenolone mimic tablets containing a different steroid (see Photo 12). The exhibits were seized in Erie, Pennsylvania (details not provided), and were submitted to the laboratory by the Pennsylvania State Police Laboratory. Analysis by GC/MS and NMR gave no library matches; however, structural elucidation software suggested 17α-methyldromostanolone (a non-controlled "designer" steroid). Comparison with a standard confirmed this identification. This was the first submission of 17α-methyldromostanolone in any form to the Special Testing and Research Laboratory.

Photo 12

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SELECTED REFERENCES

[The Selected References section is 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. Brandt SD, Martins CPB, Freeman S, Dempster N, Wainwright M, Riby PG, Alder JF. **N,N-Dimethyltryptamine and dichloromethane: Rearrangement of quaternary ammonium salt product during GC-EI and CI-MS-MS analysis.** Journal of Pharmaceutical and Biomedical Analysis 2008;47(1):207-12. [Editor's Notes: Appears to be quite similar to: Brandt SD, Martins CP, Freeman S, Dempster N, Riby PG, Gartz J, Alder JF. **Halogenated solvent interactions with N,N-dimethyltryptamine: Formation of quaternary ammonium salts and their artificially induced rearrangements during analysis.** Forensic Science International 2008;178(2-3):162-70 (reported in the August 2008 issue). Contact: School of Pharmacy and Chemistry, Liverpool John Moores University, Liverpool, UK L3 3AF.]

2. Casado R, Uriarte I, Cavero RY, Calvo MI. **LC-PAD determination of mescaline in cactus peyote (Lophophora williamsii).** Chromatographia 2008;67(7/8):665-667. [Editor's Notes: Presents the title study ("PAD" is an unusual abbreviation for photodiode array detector). Contact: Department of Pharmacy and Pharmaceutical Technology (Pharmacognosy Section), University of Navarra, Navarra, Spain 31080.]

3. Cody JT. **Amphetamines.** Handbook of Analytical Separations 2008;6(Forensic Science):127-74. [Editor's Notes: A comprehensive review. Contact: Air Force Drug Testing Laboratory, Brooks City-Base, TX 78235.]

4. Cody JT. **Hallucinogens.** Handbook of Analytical Separations 2008;6(Forensic Science):175-201. [Editor's Notes: A review; includes LSD, mescaline, psilocybin and PCP. Contact: Air Force Drug Testing Laboratory, Brooks City-Base, TX 78235.]

5. Holler JM, Bosy TZ, Dunkley CS, Levine B, Past MR, Jacobs A. **Δ^9-Tetrahydrocannabinol content of commercially available hemp products.** Journal of Analytical Toxicology 2008;32(6):428-32. [Editor's Notes: 79 different hemp products were tested for THC; concentrations ranged from none detected to 117.5 mug THC/g material. The results indicate that THC levels in currently marketed hemp products are significantly lower than in those products available before 2003. Contact: Division of Forensic Toxicology, The Armed Forces Medical Examiner System, Armed Forces Institute of Pathology, Rockville, MD 20850.]

6. Lurie IS, Toske SG. **Applicability of ultra-performance liquid chromatography-tandem mass spectrometry for heroin profiling.** Journal of Chromatography, A 2008;1188(2):322-6. [Editor's Notes: UPLC-MS/MS allowed for the highly selective and sensitive detection of many basic and neutral impurities in heroin (including several previously unreported reticuline derivatives. LODs were as low as 10-6%. Contact: Special Testing and Research Laboratory, U.S. Drug Enforcement Administration, Dulles, VA 20166.]

7. Meier-Augenstein W, NicDaeid N. **Feasibility of source identification of seized street drug samples by exploiting differences in isotopic composition at natural abundance level by GC/MS as compared to isotope ratio mass spectrometry (IRMS).** Forensic Science International 2008;174(2-3):259-61. [Editor's Notes: The research of Purkait and Lahiri (Sharma SP, Purkait BC, Lahiri SC. **Qualitative and quantitative analysis of seized street drug samples and identification of source**. Forensic Science International 2005;152(2-3):235) is reviewed (and critiqued), with references. The abstract is not clear, but it appears that the authors are contesting Purkait's and Lahiri's conclusions. Contact: Environmental Forensics & Human Health Laboratory, Queen's University, Belfast, UK BT9 5AG.]

8. Nevescanin M, Stevic SB, Petrovic S, Vajs V. **Analysis of amphetamines illegally produced in Serbia.** Journal of the Serbian Chemical Society 2008;73(7):691-701. [Editor's Notes: 30 marker compounds were identified by GC/MS. 32 batches of amphetamine samples from three separate cases were characterized. The analyses of the tartrate, sulfate, and phosphate salts of amphetamine, as well as variously formulated tablets, are presented. The analyses showed that the amphetamines in all three cases were synthesized by the Leuckart method. Contact: Institute of Security, Belgrade 11 000, Serbia and Montenegro.]

9. Thevis M, Schrader Y, Thomas A, Sigmund G, Geyer H, Schaenzer W. **Analysis of confiscated black market drugs using chromatographic and mass spectrometric approaches.** Journal of Analytical Toxicology 2008;32(3):232-40. [Editor's Notes: Focus was on labelled and unlabelled formulations seized during house searches in Germany. Products included various anabolic and anabolic-androgenic steroids, anti-estrogenic agents, and virility stimulating drugs. Analytical techniques included LC-MS/MS, GC/MS with NPD, gel electrophoresis, and immunological tests. In over 25% of the cases (in particular concerning anabolic-androgenic steroids), the declared ingredients differed from the actual contents. It was also noted that counterfeit packaging was nearly indistinguishable versus authentic packaging. Contact: Center for Preventive Doping Research - Institute of Biochemistry, German Sport University Cologne, 50933 Cologne, Germany.]

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