

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.

- NOVEMBER 2008 -

- INTELLIGENCE ALERT -

COCAINE SOLUTIONS IN RUM BOTTLES IN SEVILLE, SPAIN

The Stupeficient Control Laboratory of the Health Department (Seville, southwestern Spain) recently received 12 bottles of Venezuelan Rum, each containing a yellow liquid suspected to contain dissolved cocaine (see Photo 1). The exhibits were seized by the Police/Anti-Narcotics Enforcement Department from a passenger arriving at the Seville airport on a flight from Venezuela. The bottles were labelled as containing 0.7 liter of liquid, but the actual volumes ranged between 623 and 687 milliliters. Analysis by color testing, GC/FID, and GC/MS confirmed cocaine base (range 17.6 to 27.7 percent, average 22.8 percent). The total amount of cocaine base in the 12 bottles was 1986.9 grams. This was the largest such submission to the laboratory.



Photo 1

- INTELLIGENCE ALERT -

MULTI-COLORED ECSTASY COMBINATION TABLETS (CONTAINING MDMA, METHAMPHETAMINE, AND CAFFEINE, OR MDMA, KETAMINE, AND CAFFEINE) AND ECSTASY MIMIC TABLETS (ACTUALLY CONTAINING KETAMINE, BENZYLPIPERAZINE (BZP), TRIFLUOROMETHYLPHENYLPIPERAZINE (TFMPP), AND CAFFEINE) IN NORTHERN CALIFORNIA

The DEA Western Laboratory (San Francisco, California) recently received five different sets of unusual, multi-colored tablets, all suspected Ecstasy (see Photo 2). The exhibits were acquired in northern California by personnel from the DEA San Francisco Field Division (exact location and details sensitive).

Preliminary screening enabled two of the five sets to be combined (Set #3 below). The first set included 15 tablets (total net mass 5.2 grams) that were layered red and yellow, with a "C" logo (see Photo 3). Analysis by GC/MS, color testing (Marquis), GC/IRD, and HPLC confirmed MDMA (5.2 milligrams per tablet), methamphetamine (less than 1%), caffeine, and dimethyl sulfone. The second set included 68 tablets (total net mass 24.5 grams) that were layered brown and red, again with the "C" logo. Analysis (same techniques) confirmed MDMA (5.7 milligrams per tablet), methamphetamine (less than 1%), caffeine, and dimethyl sulfone. The third set included 32 tablets that were layered blue and green and 38 tablets that were layered orange and blue (total net mass of all 70 tablets 25.2 grams), also with the "C" logo. Analysis (same techniques) confirmed MDMA (4.8 milligrams per tablet), ketamine (not quantitated but similar to the MDMA quant), caffeine, and dimethyl sulfone. The fourth set included 17 tablets (total net mass 4.6 grams) that were orange with blue speckles, with an "A" logo (photo not available). Analysis by GC/FID, GC/MS, and GC/IRD, however, indicated not MDMA but rather ketamine (22.3 milligrams per tablet), N-benzylpiperazine (BZP, not quantitated), 1-(3-trifluoromethyl)phenylpiperazine (TFMPP, not quantitated), caffeine, and dimethyl sulfone. The primary component in all four sets was caffeine. Ecstasy combination tablets with low MDMA quants, and Ecstasy mimic tablets with ketamine/piperazine mixtures, are both becoming more common at the Western Laboratory. This is the first known submission of tablets with "layered" appearances to the laboratory.



Photo 2



Photo 3

- INTELLIGENCE ALERT -

HASH OIL IN DETROIT, MICHIGAN

The DEA North Central Laboratory (Chicago, Illinois) recently received a brown packing tape wrapped package that contained a folded-over, heat-sealed plastic bag containing a viscous black substance, suspected heroin (see Photo 4). The exhibit was seized in Detroit by agents from the DEA Detroit Field Division (details sensitive). The material (total net mass 2,270 grams) had no particular odor. Analysis by microscopy indicated no plant or other solid material. A Duquenois – Levine test was positive, and GC/MS confirmed Δ^9 -tetrahydrocannabinol (THC), cannabino, and cannabidiol (not quantitated, but a high loading of THC based on the TIC). This is the largest ever submission of “hash oil” to the North Central Laboratory.



Photo 4

* * * * *

- INTELLIGENCE BRIEF -

“COCA TEA CANDIES” AT BOLLING AFB, MARYLAND

The DEA Mid-Atlantic Laboratory (Largo, Maryland) recently received four unlabelled, individually plastic-wrapped, dark green colored lozenges, each 1 x 0.5 x 0.25 inches, total net mass 17.2 grams, alleged “Coca Tea Candies” (see Photo 5). The exhibits were submitted as evidence in a military court martial at Bolling Air Force Base (just outside Washington, DC); the defendant in the case claimed that the candies were responsible for a positive drug test for cocaine. Standard screening by GC/FID, GC/MS, and FTIR did not confirm the presence of cocaine. More extensive workup of a 5 gram sample (grinding, dissolution in water, sonication,



Photo 5

basification, extraction with chloroform, concentration, and analysis of the concentrated extract by GC/FID and GC/MS) confirmed cocaine at less than 0.01 percent. This quantity was judged to be insufficient to cause a positive drug test, and the defendant in the case was convicted. This is the first submission of “Coca Tea Candies” to the Mid-Atlantic Laboratory.

- INTELLIGENCE BRIEF -

**GELATINOUS BARS CONTAINING EITHER BUPRENORPHINE AND CAFFEINE
OR FENTANYL IN SEMINOLE, FLORIDA**

The DEA Special Testing and Research Laboratory (Dulles, Virginia) recently received three plastic trays that contained varying numbers of different color, gummy “bars” of gelatinous materials in small wells (2 x 1 centimeters each), suspected to contain either suboxone (buprenorphine and naloxone) or fentanyl (see Photos 6 - 8). The exhibits were seized in Seminole, Florida by DEA Diversion Control personnel (details sensitive). The first tray contained six tan-colored “bars” (total net mass 5.1 grams), the second tray contained 11 light brown-colored “bars” (total net mass 11.1 grams), and the third tray contained 12 darker brown-colored “bars” (total net mass 12.6 grams). Analyses were conducted by color testing, GC/FID, GC/MS, and FT/NMR. The tan “bars” all contained buprenorphine (not quantitated) and caffeine; the light brown and darker brown “bars” all contained fentanyl (not quantitated). This is believed to be the first submission of these type exhibits to the Special Testing and Research Laboratory.

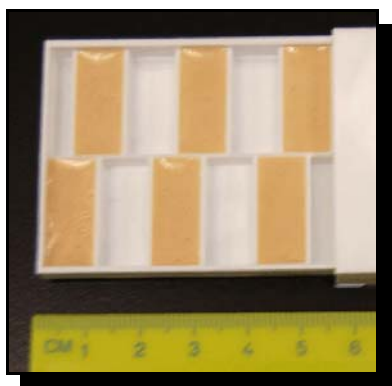


Photo 6



Photo 7



Photo 8

* * * * *

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. Li X, Liu B, Zhu K, Tu D. **The application of near infrared spectral characteristic peaks in counterfeit drugs analysis.** *Zhongguo Yaoshi* (Beijing, China) 2008;22(7):558-9. [Editor's Notes: Presents the title study. Focus is on counterfeits of “some famous brand drugs” (not specified in the abstract). This article is written in Chinese. Contact: Drug Control Institute of Chuzhou City, Chuzhou 239000, Peop. Rep. China.]
2. Nathaniel AH. **Drug detection kit and method.** (Patent) *Chemical Abstracts* 2008;149:240626x.

3. Yang S, Liu X, Qiao J. **Analysis of diluents in retail heroin seized in Beijing in 2005.** Zhongguo Yaowu Yilaixing Zazhi 2007;16(4):276-80. [Editor's Notes: Analyses were conducted by GC/MS. Of 408 samples, 323 (79.2%) contained diluents, including nicotinamide (231 samples, 56.6%), caffeine (135 samples, 33.1%), acetaminophen (51 samples, 12.5%), aminopyrine (39 samples, 9.6%), theophylline (37 samples, 9.1%), phenacetin (29 samples, 7.1%), piracetam (28 samples, 6.9%), sedatives and hypnotics (not specified in the abstract, 10 samples, 2.4%), or tramadol and others (10 samples, 2.4%). This article is written in Chinese. Contact: Forensic Medical Examination Center, Beijing Public Security Bureau, Beijing 100085, Peop. Rep. China.]
4. Yasuda I, Takahashi M. **Analysis of illegal drugs.** Bunseki 2008(1):26-31. [Editor's Notes: A review, discussing analyses of illegal drugs, including phenethylamines, tryptamines, piperazines, nitrite esters, etc. This article is written in Japanese. Contact: Tokyo Metropolitan Institute of Public Health, 3-24-1 Hyakunin-cho, Shinjuku-ku, Tokyo, Japan 169-0073.]

Additional References of Possible Interest:

1. Deconinck E, van Nederkassel AM, Stanimirova I, Daszykowski M, Bensaid F, Lees M, Martin GJ, Desmurs JR, Smeyers-Verbeke J, Vander Heyden Y. **Isotopic ratios to detect infringements of patents or proprietary processes of pharmaceuticals: Two case studies.** Journal of Pharmaceutical and Biomedical Analysis 2008;48(1):27-41. [Editor's Notes: Isotopic ratios were used to differentiate sample groups of acetyl salicylic acid and ibuprofen that originated from different countries and manufacturers. Contact: Vrije Universiteit Brussel (VUB), Department of Analytical Chemistry and Pharmaceutical Technology, Laarbeeklaan 103, Brussels B-1090, Belg.]
2. Lei Y, Luo Z-Y, Hu C-Q. **Rapidly screening counterfeit drugs using near infrared spectroscopy: Combining qualitative analysis with quantitative analysis to increase effectiveness.** Journal of Near Infrared Spectroscopy 2008;16(3):349-55. [Editor's Notes: Five generic vitamin tablets with different active ingredients, produced by different manufacturers, were analyzed by qualitative and quantitative NIR spectroscopy. The differences in the spectra were significant enough to discriminate the tablets, and also to detect counterfeit samples. Contact: GuangDong Institute for Drug Control, Peop. Rep. China (no further addressing information was provided).]
3. Lin C-H, Kaneta T, Chen H-M, Chen W-X, Chang H-W, Liu J-T. **Applications of Hadamard transform to gas chromatography/mass spectrometry and liquid chromatography/mass spectrometry.** Analytical Chemistry 2008;80(15):5755-9. [Editor's Notes: Successful application of the Hadamard transform (HT) technique to GC/MS and LC/MS analyses of MDMA and DMT is described. The S/N ratios of the signals were substantially improved. A practical example (toxicological) was presented. Contact: Department of Chemistry, National Taiwan Normal University, Taipei, Taiwan.]
4. Pilau EJ, Silva RGC, Jardim ICFS, Augusto F. **Molecularly imprinted sol-gel silica for solid phase extraction of phenobarbital.** Journal of the Brazilian Chemical Society 2008;19(6):1136-43. [Editor's Notes: A molecularly imprinted organically modified silica was prepared through a simple sol-gel procedure, and evaluated for solid-phase extraction of phenobarbital from aqueous and forensic samples. Focus appears to be toxicological. Contact: Instituto de Quimica, Universidade Estadual de Campinas, Campinas 13084-971, Brazil.]

* * * * *