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- MAY 2008 -

- INTELLIGENCE ALERT -

XANAX BLOTTER PAPER IN BARTLESVILLE, OKLAHOMA

The Oklahoma State Bureau of Investigation Northeast Regional Laboratory (Tahlequah) recently received a partial sheet of blotter paper, with a Xanax tablet shape with the word "XANAX" inside the tablet shape imprinted repeatedly on one side (see Photo 1) and the word "XANAX" imprinted repeatedly on it in bold letters on the opposite side (photo not shown), suspected LSD. The exhibit was seized in Bartlesville by the Washington County Sheriff's Office, pursuant to a traffic stop for suspected DUI (Bartlesville is in the northeast corner of the state, near Tulsa). The sheet contained 86 dosage units, segmented into ¼ inch squares. UV irradiation did not give the bright fluorescence usually observed with LSD blotter paper, and analysis of methanolic extracts by GC and GC/MS indicated not LSD but rather alprazolam (not quantitated, but a moderate to high loading based on the chromatograms).

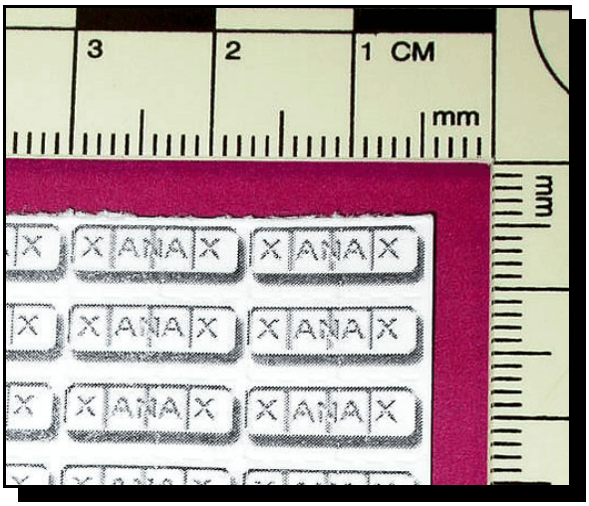

Photo 1 (12 of 86 Squares)

A similar submission was previously submitted to the laboratory; however, that exhibit consisted of only two squares, and was imprinted with "XANAX" on only one side. In the latter case, analysis again indicated a heavy loading of alprazolam.

[Editor's Notes: Xanax is a trade name for alprazolam. Over the past five years, there have been numerous reports of blotter paper laced with drugs other than LSD, usually designer tryptamines and phenethylamines. However, use of benzodiazepines (such as alprazolam) for this purpose is unusual. Submissions of blotter paper actually containing LSD are currently uncommon.]

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- INTELLIGENCE ALERT -

MDMA INSIDE A MARIJUANA "BLUNT" IN BATON ROUGE, LOUISIANA

The Louisiana State Police Crime Laboratory in Baton Rouge recently received a plastic bag of marijuana (confirmed), two green Ecstasy-type tablets (MDMA confirmed), and a hand-rolled cigar, an apparent marijuana "blunt." The exhibits were seized in Baton Rouge by the Baton Rouge Police (no further details). The cigar was approximately 9 x 1 centimeters, weighed 1.68 grams, and was visually unremarkable. However, upon disassembly for sampling purposes, the core was found to contain a sprinkling of pink granules, apparently a crushed up tablet, mixed throughout the plant material (see Photos 2a and b). Analysis of the plant material by microscopy and Duquenois-Levine confirmed marijuana (THC not quantitated). Analysis of the pink substance (not weighed separately) by GC and GC/MS indicated MDMA, caffeine, and procaine (MDMA not quantitated, but much less than the caffeine and procaine). This is believed to be the second such submission to the laboratory.

Photo 2a

Photo 2b - Expansion of Left-Center Section of Photo 2a

- INTELLIGENCE ALERT -

"READY TO USE" VIALS OF INJECTABLE HEROIN SOLUTIONS IN FARAH PROVINCE, AFGHANISTAN

Photo 3

The DEA Special Testing and Research Laboratory (Dulles, Virginia) recently received several submissions of sealed injection vials, each containing approximately 2 milliliters of yellow to golden colored liquids, purported heroin solutions (see Photo 3). The exhibits were seized by the Afghanistan Special Narcotics Force (ASNF) and DEA personnel at a residential complex in Farah Province, Afghanistan (located in the western part of the country, bordering Iran). In all, about 25 of the vials were submitted for analysis (there were over 200,000 such vials at the complex). Analysis via GC/FID, GC/MS, NMR, FTIR-ATR, and CE confirmed that the liquids were solutions of heroin hydrochloride in water (pH 4 - 5), varying from trace to 13 milligrams/milliliter (most were between 12 - 13 milligrams/milliliter). O6-Monoacetylmorphine was the primary component in solutions with low heroin concentrations, and it appears that in these cases the heroin hydrolyzed before the solution was analyzed. Pheniramine and caffeine were also found in some of the solutions. Based on investigative intelligence, it is believed that the vials were prepared as "ready-to-use" injectable heroin solutions. These were the first submissions of this type to the Special Testing and Research Laboratory.

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- INTELLIGENCE ALERT -

COCAINE AND HEROIN SMUGGLED IN COMPOSITE "ROCKS"

The DEA North Central Laboratory (Chicago, Illinois) recently received 3 separate exhibits containing a total of 18 apparent rocks, 16 of which contained powders that field-tested positive for cocaine, and two of which contained powders that field-tested positive for heroin (see Photo 4, next page). The exhibits were seized by Immigration and Customs (ICE) personnel (locations and details sensitive). The rocks were about the size of footballs, weighed about 4 kilograms each, were spray-painted silver, and were wrapped in plastic tape and bubble wrap (see unopened packages in Photo 4). The field-testing samples were acquired by ICE personnel by drilling into the rocks. At the laboratory, the rocks were easily cracked open in a vice, revealing a gray layer, a black layer, and a wrapped package of powder (see Photo 5). The gray material appeared to be a form of granite composite (the type used in production of countertops). The black layer was epoxy. The powders were variably packaged in plastic wraps, grease, carbon paper, plastic mesh, and/or tan tape. The first exhibit (16 rocks) contained a net total of 5.9 kilograms of off-white powder; analysis by GC/MS, IR, and GC/FID confirmed 59.6 percent cocaine hydrochloride adulterated with 0.5 - 2 percent levamisole. The second exhibit (1 rock) contained 1.0 kilogram of tan powder; analysis by GC/MS, IR, and GC/FID confirmed 84.1 percent heroin hydrochloride. The third exhibit (1 rock) contained 998 grams of tan powder;

analysis by GC/MS, IR, and GC/FID confirmed 79.9 percent heroin hydrochloride. This was the first submission of this smuggling technique to the North Central Laboratory.

Photo 4

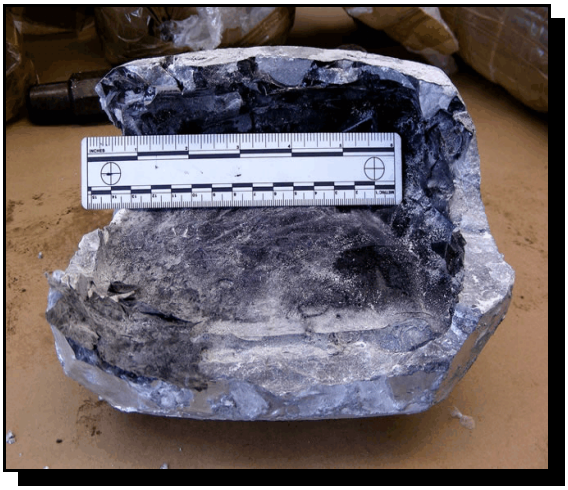

Photo 5

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- INTELLIGENCE ALERT -

ECSTASY COMBINATION TABLETS (CONTAINING MDMA, METHAMPHETAMINE, BZP, TFMPP, DIBENZYLPIPERAZINE, CAFFEINE, AND PROCAINE) IN NORFOLK, VIRGINIA

The DEA Mid-Atlantic Laboratory (Largo, Maryland) recently received 705 yellow tablets with a Superman logo, suspected MDMA (see Photo 6). The exhibits were seized at a mail distribution facility in Norfolk, Virginia by the Norfolk Police. Analysis of the tablets (total net mass 198.1 grams) by GC/MS, TLC, and GC confirmed MDMA (10.9 milligrams/tablet), adulterated with methamphetamine (6.1 milligrams/tablet), N-benzylpiperazine (BZP), 1-(3-trifluoromethylphenyl)-piperazine (TFMPP), dibenzylpiperazine, caffeine, and procaine. The three piperazines were not quantitated; however, based on the TIC and GC, the BZP and TFMPP were both higher in concentration than the MDMA and methamphetamine. The tablets also contained MDP2P and piperonal (both indicative of the MDMA synthesis route). The Mid-Atlantic Laboratory has seen a wide variety of Ecstasy combination tablets containing both MDMA and methamphetamine, and a few Ecstasy-mimic tablets containing BZP and TFMPP mixtures, but this is believed to be the first such submission containing all four of these drugs.

Photo 6

- INTELLIGENCE ALERT -

l-METHAMPHETAMINE IN "ICE"-LIKE FORM IN BILLINGS, MONTANA

The DEA Western Laboratory (San Francisco, California) recently received two small ziplock-type bag exhibits of white crystals, suspected "Ice" methamphetamine (no photo). The exhibits were acquired in Billings, Montana, by personnel from the Eastern Montana HIDTA (no further details). Analysis of the samples (combined net mass 9.7 grams) by FTIR/ATR, NMR, and GC/MS confirmed methamphetamine hydrochloride (29 and 32 percent, respectively), diluted with dimethylsulfone (not quantitated). However, derivatization with trifluoroacetyl-prolyl chloride and GC/FID analysis confirmed that the samples were both *l*-methamphetamine hydrochloride. The Western Laboratory rarely receives exhibits of *l*-methamphetamine.

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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. Elie MP, Baron MG, Birkett JW. **Enhancement of microcrystalline identification of gamma-hydroxybutyrate.** Journal of Forensic Sciences 2008;53(1):147-150. [Editor's Notes: An enhancement of the silver nitrate/copper nitrate microcrystal test for gamma-hydroxybutyrate is described. The enhanced test utilizes lanthanum nitrate in place of copper nitrate. Contact: Department of Forensic and Biomedical Sciences, University of Lincoln, Brayford Pool, Lincoln LN6 7TS, UK.]

2. Henderson TJ, Cullinan DB, Lawrence RJ, Oyler JM. **Positive identification of the principal component of a white powder as scopolamine by quantitative one-dimensional and two-dimensional NMR techniques.** Journal of Forensic Sciences 2008;53(1):151-161. [Editor's Notes: Presents the in-depth characterization of scopolamine via a wide variety of NMR techniques, including 14N-NMR. Tandem mass spectra (collision induced dissociation) results are also presented. Contact: U.S. Army Edgewood Chemical Biological Center, MD 21010.]

3. Lai H, Guerra P, Joshi M, Almirall JR. **Analysis of volatile components of drugs and explosives by solid phase microextraction-ion mobility spectrometry.** Journal of Separation Science 2008;31(2):402-412. [Editor's Notes: Presents the use of SPME as a pre-concentration technique for detection of drugs and explosives by IMS. "Drugs" specifically mentioned in the abstract are cocaine, marijuana, and MDMA. Contact: Department of Chemistry and Biochemistry, International Forensic Research Institute, Florida International University, FL (zip code not provided).]

4. Matsumoto T, Urano Y, Makino Y, Kikura-Hanajiri R, Kawahara N, Goda Y, Nagano T. **Evaluation of characteristic deuterium distributions of ephedrines and methamphetamines by NMR spectroscopy for drug profiling.** Analytical Chemistry 2008;80(4):1176-1181. [Editor's Notes: The quantitative analysis of the deuterium contents (D/H) at the Ph, methine, benzyl, N-Me, and Me groups of l-ephedrine/HCl, d-pseudoephedrine/HCl and

methamphetamine/HCl by 2H-NMR spectroscopy is described. Comparison of the 5 position-specific D/H values of l-ephedrine/HCl and d-pseudoephedrine/HCl prepared by 3 methods (chemical synthesis, semichemical synthesis, and biosynthesis) showed that the chemically synthesized ephedrines and semisynthetic ephedrines have highly specific distributions of deuterium at the methine and benzyl positions, compared with the other positions. The classification of several methamphetamine samples seized in Japan in terms of the D/H values at these two positions showed that the methamphetamine samples had been synthesized from ephedrines extracted from Ephedra plants or semisynthetic ephedrines and not from synthetic ephedrine. The methodology should be useful for source determination and comparative analysis. Contact: National Institute of Health Sciences, 1-18-1 Kamiyoga, Setagaya-ku, Tokyo, Japan 158-8501.]

5. Potter DJ, Clark P, Brown MB. **Potency of Δ9-THC and other cannabinoids in cannabis in England in 2005: Implications for psychoactivity and pharmacology.** Journal of Forensic Sciences 2008;53(1):90–94. [Editor's Notes: Presents the title survey; analyses were conducted by GC. Contact: Department of Pharmacy, King's College London, 150 Stamford Street, London SE1 9NH, United Kingdom.]

6. Sherma J. **Analysis of counterfeit drugs by thin layer chromatography.** Acta Chromatographica 2007;19:5-20. [Editor's Notes: Presents the title study. Contact: Department of Chemistry, Lafayette College, Easton, PA 18042.]

7. Takahashi M, Nagashima M, Suzuki J, Seto T, Yasuda I, Yoshida T. **Analysis of phenethylamines and tryptamines in designer drugs using gas chromatography - mass spectrometry.** Journal of Health Sciences 2008;54(1):89-96. [Editor's Notes: Presents the title study on 3,4,5-trimethoxyamphetamine, 2,4,5-trimethoxyamphetamine, 4-bromo-2,5-dimethoxy-phenethylamine, 4-iodo-2,5-dimethoxyphenethylamine, 2,5-dimethoxy-4-ethylthiophenethyl-amine, 2,5-dimethoxy-4-propylthiophenethylamine, 5-methoxy-N,N-dimethyltryptamine, *alpha*-methyltryptamine, N-isopropyl-5-methoxy-N-methyltryptamine, and N,N-diisopropyl-5-methoxytryptamine. 1H- and 13C-NMR data are also included. Contact: Tokyo Metropolitan Institute of Public Health, 3-24-1 Hyakunin-cho, Shinjuku-ku, Tokyo 169-0073, Japan.]

8. Wang M-J, Liu J-T, Chen H-M, Lin J-J, Lin C-H. **Comparison of the separation of nine tryptamine standards based on gas chromatography, high performance liquid chromatography and capillary electrophoresis methods.** Journal of Chromatography, A 2008;1181(1-2):131-136. [Editor's Notes: Presents the title studies on *alpha*-methyltryptamine, N,N-dimethyltryptamine, 5-methoxy-*alpha*-methyltryptamine, N,N-diethyltryptamine, N,N-dipropyltryptamine, N,N-dibutyltryptamine, N,N-diisopropyltryptamine, 5-methoxy-N,N-dimethyltryptamine, and 5-methoxy-N,N-diisopropyltryptamine. Contact: Department of Chemistry, National Taiwan Normal University, Taipei, Taiwan.]

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SCIENTIFIC MEETINGS

Title: 30th Annual SWAFS Meeting (Second Bimonthly Posting)
Sponsoring Organization: Southwestern Association of Forensic Scientists
Inclusive Dates: September 22-26, 2008
Location: The Peabody (Little Rock, Arkansas)
Contact Information: Nick Dawson (501/683-6189 or nick.dawson -at- crimelab.arkansas.gov)
Website: www.swafs.us