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- APRIL 2010 -

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. Galhena AS, Harris GA, Nyadong L, Murray KK, Fernandez FM. **Small molecule ambient mass spectrometry imaging by infrared laser ablation metastable-induced chemical ionization.** Analytical Chemistry 2010:82(6):2178-2181. [Editor's Notes: A novel ambient ion source termed IR laser ablation metastable-induced chemical ionization (IR-LAMICI) is presented. IR-LAMICI integrates IR laser ablation and direct analysis in real time (DART) type metastable-induced chemical ionization for open air mass spectrometry (MS) ionization. The analytical capabilities of IR-LAMICI are explored by imaging pharmaceutical tablets, screening counterfeit drugs, and probing algal tissue surfaces for natural products. The resolution of a chemical image is determined by the crater size produced with each laser pulse, not by the size of the metastable gas jet. The detection limits for an active pharmaceutical ingredient (acetaminophen) using the IR-LAMICI source is calculated to be in the low picograms. Contact: School of Chemistry and Biochemistry, Georgia Institute of Technology, Atlanta, GA 30332, USA.]

2. Morello DR, Cooper SD, Panicker S, Casale JF. **Signature profiling and classification of illicit heroin by GC/MS analysis of acidic and neutral manufacturing impurities.** Journal of Forensic Sciences 2010;55(1):42-49. [Editor's Notes: The illicit manufacture of heroin results in the formation of trace level acidic and neutral impurities. These impurities are detectable in illicit heroin and provide valuable information about the manufacturing process used. The isolation, derivatization, and semiquantitative analysis of neutral and acidic heroin manufacturing impurities by programmed temperature vaporizing injector-gas chromatography/mass spectrometry (PTV-GC/MS) is described. Trace acidic and neutral heroin impurities were isolated from basic fractions using liquid-liquid extraction. Extracted impurities were treated with N-methyl-N-trimethylsilyltrifluoroacetamide followed by PTV-GC/MS analyses. Semiquantitative data were obtained using full scan mass spectrometry utilizing unique ions or ion combinations for 36 trace impurities found in crude and/or highly refined heroin samples. Minimum detection limits for acidic and neutral impurities were estimated to be at the 10^{-7} level relative to total morphine. Over 500 authentic heroin samples from South America, Mexico, Southwest Asia, and Southeast Asia were analyzed. Classification of illicit heroin based on the presence or absence and relative amounts of acidic and neutral impurities is presented. Contact: Special Testing and Research Laboratory, U.S. Drug Enforcement Administration, Dulles, VA 20166-9509, USA.]

3. Rohrbasser C, Rheme D, Decastel S, Roth S, Aja Montes M, Veuthey J, Rudaz S. **A new capillary electrophoresis device with deep UV detector based on LED technology.** Chimia 2009;63(12):890-891. [Editor's Notes: Presents the title study. Contact: Department of Chemistry, College of Engineering and Architecture of Fribourg, CH-1705 Fribourg, Switzerland.]

4. Staub A, Giraud S, Saugy M, Rudaz S, Veuthey J, Schappler J. **CE-ESI-TOF/MS for human growth hormone analysis.** Electrophoresis 2010;31(2):388-395. [Editor's Notes: The coupling of capillary electrophoresis (CE) with time-of-flight/mass spectrometry (TOF/MS) produces a very promising method that can be used to detect and identify proteins in different matrixes. This paper describes an efficient, rapid, and simple CE-electrospray ionization (ESI)-TOF/MS procedure for the analysis of endogenous human growth hormone and recombinant human growth hormone without sample preparation. This method successfully distinguished human growth hormone from recombinant human growth hormone in unknown samples. Contact: School of Pharmaceutical Sciences, University of Geneva, 1211 Geneva, Switzerland.]

Additional References of Possible Interest:

1. Lim Abdullah AF, Miskelly GM. **Recoveries of trace pseudoephedrine and methamphetamine residues from impermeable household surfaces: Implications for sampling methods used during remediation of clandestine methamphetamine laboratories.** Talanta 2010;81(1-2):455-461. [Editor's Notes: Presents the title study. Contact: Forensic Science Programme, Department of Chemistry, The University of Auckland, Private Bag, Auckland 92019, New Zealand.]

2. Van Eenoo P, Van Renterghem P, Dimopoulou CH, Delbeke FT, Georgakopoulos CG. **Estimating measurement uncertainty in quantitative methods not based on chromatography for doping control purposes.** Drug Testing and Analysis 2010;2 (1):19-23. [Editor's Notes: The measurement of uncertainty estimate (MU) for quantitative results is a requirement of ISO/IEC17025. This concept is well established for chromatographic methods. However, very few practical methodologies have been published for non-chromatographic methods. A method for establishing MU for non-chromatographic methods is proposed based upon two case studies. Contact: DoCoLab, Ghent University (UGent), Zwijnaarde B-9052, Belguim.]

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THE JOURNAL/TEXTBOOK COLLECTION EXCHANGE

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Federal Criminal Code and Rules – 2008 Edition (12 copies)

Journal of Forensic Sciences:

2001: January (#1), March (#2), May (#3), September (#5), November (#6)
2002: Complete set
2003: Complete set
2005: January (#1), May (#3), November (#6)

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THE DEA FY 2010 STATE AND LOCAL FORENSIC CHEMISTS SEMINAR SCHEDULE

The FY 2010 schedule for the State and Local Forensic Chemists Seminar is as follows:

June 21-25, 2010
September 13-17, 2010

The school is open only to forensic chemists working for law enforcement agencies. It 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. The course is held at the Hyatt Place Dulles North 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*. Completed applications should be mailed to the Special Testing and Research Laboratory (Attention: J. Head) at 22624 Dulles Summit Court, Dulles, VA 20166. For additional information, call (703) 668-3349.

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SCIENTIFIC MEETINGS

Title: 2010 Mid-Atlantic Association of Forensic Scientists Annual Meeting
Sponsoring Organization: Mid-Atlantic Association of Forensic Scientists
Inclusive Dates: May 17-21, 2010
Location: Penn State University (State College, PA)
Contact Information: maafs@comcast.net
Website: www.maafs.org

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Title: 2010 Southwestern Association of Forensic Scientists Annual Meeting
Sponsoring Organization: Southwestern Association of Forensic Scientists
Inclusive Dates: September 20-24, 2010
Location: Great Wolf Lodge (Grapevine, TX)
Contact Information: swafs2010@yahoo.com
Website: www.swafs.us

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Title: Southern Association of Forensic Scientists Annual Fall Meeting
Sponsoring Organization: Southern Association of Forensic Scientists
Inclusive Dates: September 19-24, 2010
Location: Hollywood Casino Hotel (Tunica, MS)
Contact Information: See Website
Website: www.southernforensic.org

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DEA State and Local Forensic Chemist 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

College or University	Degree	Major

Please Check Which Techniques or Equipment Are Used in Your Laboratory

	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: _____