ToxTalk
The official publication of the SOCIETY OF FORENSIC TOXICOLOGISTS, INC.

VOLUME 25 No. 2 JUNE 2001

Toxtalk Editor
Joseph R. Monforte, Ph.D., DABFT
42408 N. Sombrero Rd.
Cave Creek, AZ 85331-2821
E-mail: DrMonforte@aol.com
Fax: 480-595-6663
Ph: 480-595-6646

Editorial Staff
H. Chip Walls, B.S.
Jim Wigmore, B.Sc.
Vincent Papa, Ph.D.
Donald Kippenberger, Ph.D.
Daniel Anderson, M.S.

Publisher
Patricia Mohn-Monforte

SOFT Board of Directors
President:
Michael L. Smith, Ph.D., DABFT
Vice President:
Laurel J. Farrell, B.A.
Secretary:
Amanda Jenkins, Ph.D.
Treasurer:
Daniel Isenschmid, Ph.D., DABFT
Other Directors:
Graham Jones, Ph.D., DABFT
N.G.S. Rao, Ph.D., DABFT
Timothy Rohrig, Ph.D., DABFT
Diana Wilkins, Ph.D.
J. Rod McCutcheon, B.S.
ex officio:
J. Robert Zettl, B.S., M.P.A.
Joseph R. Monforte, Ph.D., DABFT.

S.O.F.T. Administrative Office
P.O. Box 5543
Mesa, AZ 85211-5543
Phone/fax: 480-839-9106

Website: www.soft-tox.org
Email: info@soft-tox.org

REGULAR FEATURES
Career Opportunities Professional Calendar
From the Editor’s Desk Journal Club Toxichem + Krimtech

TECHNICAL NOTES
Drugs In The News: Beta Blockers (Papa), PPA (Papa)
Case notes: An unusually high postmortem hydrocodone concentration in a driver from a motor vehicle accident. (Dunn)
New Drugs: Ziprasidone (Anderson)

SPECIAL INTEREST
Preliminary SOFT 2001 Annual Meeting Information

INSERTS
2001 SOFT Meeting forms and information
2001 SOFT Membership Directory (members only)

SOFT 2001 NEW ORLEANS
September 30 – October 5
Radisson Hotel

Toxtalk is mailed quarterly (bulk mail) to members of the Society of Forensic Toxicologists, Inc. It is each member’s responsibility to report changes of address to the SOFT mailing address (Mesa, AZ - above). Non-members may now receive Toxtalk for $15 per calendar year. Make your check payable to SOFT and mail it directly to the Toxtalk Editor.

DEADLINES: Feb. 1, May 1, Aug. 1, and Nov. 1.

NEXT DEADLINE: AUGUST 1, 2001
SOFT ANNUAL MEETING  SEPTEMBER 30 to OCTOBER 5, 2001  
Radisson Hotel - NEW ORLEANS, LA  

MEETING AT A GLANCE

### SUNDAY – SEPTEMBER 30, 2001

| WORKSHOP #1 - ALTERNATIVE TESTING (Part A) | 8 a.m. – noon  
Vince Papa, Ph.D.,  
| WORKSHOP #3 - ALTERNATIVE TESTING (Part B) | 1 p.m. – 5 p.m.  
Leon Glass, Ph.D.  
| WORKSHOP #2 - HERBAL MEDICINE | 8 a.m. – noon  
Barbara Manno, Ph.D.  
| WORKSHOP #4 - URINE TESTING AND HUMAN PERFORMANCE | 1 p.m. – 5 p.m.  
Joseph Manno, Ph.D. |

### MONDAY - OCTOBER 1

| WORKSHOP #5 - ETHANOL | 8 a.m. – 5 p.m.  
James Garriott, Ph.D.  
| WORKSHOP #6 - CLINICAL TOXICOLOGY | 8 a.m. – noon  
Larry Broussard, Ph.D.  
| WORKSHOP #7 - THE IMPACT OF DAUBERT ON TESTIFYING AS A FORENSIC TOXICOLOGIST | 1:30 p.m. – 5 p.m.  
Mahmoud ElSohli, Ph.D. |

### TUESDAY – OCTOBER 2

| SOFT Run/Walk 7 a.m.  
Registration 7:30 a.m. – 5 p.m.  
ABFT Examination 8 a.m. – noon  
WORKSHOP #10 Voodoo – Does This Practice Use Toxins? | 9 a.m. – 4 p.m.  
ABFT Board Meeting noon – 6 p.m.  
Exhibit set up 2 p.m.  
NLCP Inspectors Workshop 7 p.m. – 10 p.m. |

### WEDNESDAY – OCTOBER 3

| Registration 7:30 a.m. – 5 p.m.  
Poster set up 7 a.m. – 9 a.m.  
Consultants Breakfast 7 a.m. – 8 a.m.  
WELCOME and Opening of Scientific Program 8 a.m.  
SOFT Business Meeting 8 a.m. – noon  
Exhibits and Posters 9 a.m. – 3:30 p.m.  
Luncheon noon – 1 p.m.  
Exhibits open noon – 5 p.m.  
Scientific Session 1 p.m. – 3:45 p.m.  
Welcome Reception 7 p.m. – 10 p.m. |

### THURSDAY – OCTOBER 4

| Registration 7:30 a.m. – noon  
ABFT Breakfast 7 a.m. – 8:30 a.m.  
Vendors’ Meeting 8 a.m. – 9 a.m.  
Scientific Session 8 a.m. – noon  
Exhibits and Posters open 9 a.m. – 3 p.m.  
Luncheon noon – 1 p.m.  
Scientific Session 1 p.m. – 5 p.m.  
Farewell Dinner 6 p.m. – 9 p.m.  
Elmer Gordon Forum 9 p.m. to 11 p.m. |

### FRIDAY – OCTOBER 5

| Scientific Meeting 8 a.m. – noon  
Poster Session 9 a.m. – noon  
Exhibits open 9 a.m. – noon  
For further information contact:  
Pat Pizzo 504-361-8989 x291  ppizzo@labz.com  
David Green 225-926-9173 x206  dgreen@irl.dynacare.com |

**Important deadlines:**  
Aug. 1 - Mail registration, no late fee & free t-shirt  
Sept. 7 - Radisson reservations

**STOP THE PRESS! MEETING ABSTRACT DEADLINE EXTENDED TO JULY 1**

**New information:**  
**SOFT AIRLINE DISCOUNTS:** Southwest and Delta Offer Reduced Fares  
Southwest: Call 1-800-433-5368 (Mon.-Fri. 8 a.m. to 5 p.m. and Sat.-Sun. 9:30 a.m. to 3:30 p.m.) and reference I.D. code R6864 for a 10% discount on most of SWA’s low fares. Reservation deadline: 5 or more days prior to travel.  
Delta: Call 1-800-241-6760 (Mon.-Fri. 7 a.m. to 11 p.m. and Sat.-Sun. 8:30 a.m. to 11 p.m. EST) and reference file 1560656A for a 10% discount 60 days prior to travel or 5% when making reservations less than 60 days before travel.

Additional information and forms, including registration and abstracts, are included as inserts in this issue of ToxTalk and may also be found on [www.soft-tox.org](http://www.soft-tox.org).
Guidelines for Hosting an Annual SOFT Meeting Now Available: Potential SOFT meeting hosts should contact Laurel Farrell (farrell@oneimage.com) for details.

Toxicchem + Krimtech 66:2, 74 (1999)

Submitted by Donald Kippenberger, Ph.D.

Authors, MJ Bogusz, R-D Maier and K-D Krueger

A new kind of solid phase extraction (SPE) has been recently introduced by Varian Sample Preparation Products under the name abselut™. These cartridges, filled with a new sorbent NEXUS were claimed to isolate acidic, neutral and basic drugs from biological fluids in one analytical run. Moreover, the activation (wetting) step was omitted.

The purpose of this study was to check the applicability of abselut™ NEXUS cartridges for the isolation of basic drugs in wide polarity range (amphetamine, MDMA, MDEA, codeine, morphine, cocaine, benzoylcegonine, morphine-3-glucuronide, morphine-6-glucuronide, codeine-6-glucuronide) as well as acidic drugs of low and middle polarity (tetrahydrocannabinol and THC-COOH). All drugs were extracted from serum with abselut™, NEXUS cartridges and with SPE (Bond Elut C18 cartridges) as control procedures. All basic drugs were determined with LC-MS (atmospheric pressure chemical ionization), the cannabinoids with GCMS.

The analytical recovery of basic drugs of low and middle polarity (amphetamine, MDMA, MDEA, codeine, morphine, cocaine, benzoylcegonine) was similar for abselut™ and Bond elut cartridges. However, the polar opiate glucuronides were not extracted by abselut™ at all, while the Bond elut cartridges extracted them very well. Cannabinoids were extracted with abselut™ cartridges to some extent (similar as with the SPE procedure used for basic drugs), but the recovery was too low for the required sensitivity.

This study did not confirm the statement of the manufacturer concerning the universal applicability of abselut™ NEXUS SPE columns.
CASE NOTES: An unusually high postmortem hydrocodone concentration in a driver from a motor vehicle accident.

Submitted by William A. Dunn, M.S., Forensic Toxicologist, National Medical Services, Inc., Willow Grove, PA 19090

Reported here is a case of an individual who was driving with an unusually high blood hydrocodone concentration. By history, this individual made a U-turn in front of another vehicle. In the resulting accident, he sustained a fractured neck as well as a laceration of the exterior jugular vein. He was pronounced dead at the scene. The cause of death was listed as exsanguination from the laceration. At autopsy there were no fresh "track marks" found on the decedent, but microscopic findings indicated pulmonary changes consistent with the injection of non-soluble excipient materials. His past medical history included years of hydrocodone use for "back problems", as well as a history of past i.v. drug abuse. In addition, there was a history of psychiatric problems, but no medications for this problem were listed or found.

The results of postmortem blood and urine toxicological analyses are shown in the table below. Baselt (1) reports that in a series of eleven hydrocodone deaths the blood concentrations ranged from 130 ng/mL to 7,000 ng/mL with an average concentration of 1,400 ng/mL. In this series, most (n = 8) of the concentrations were between 130 ng/mL and 600 ng/mL.

The anatomical site for blood collection was the pulmonary artery/right ventricle. Although the site is technically heart blood, the possibility of postmortem redistribution may be a moot point. Dalpe-Scott and co-workers found that the heart blood and femoral blood concentrations of hydrocodone were identical (in [1]). In addition, the markedly elevated concentrations of hydrocodone and its metabolites in the urine support the reported high blood concentration. This case illustrates the extent to which an individual can become tolerant to the effects of opiates and other CNS depressants, and hydrocodone in particular. The individual had a blood hydrocodone level that could be associated with a fatal overdose of hydrocodone, especially in conjunction with the other CNS depressant compounds detected. Yet he still managed to physically maneuver a motor vehicle, albeit in an unsafe manner.

<table>
<thead>
<tr>
<th>Blood (Pulmonary artery/Right Ventricle)</th>
<th>Urine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol 61 mg/dL</td>
<td>Ethanol 66 mg/dL</td>
</tr>
<tr>
<td>Diazepam 320 ng/mL</td>
<td>THCC 11 ng/mL</td>
</tr>
<tr>
<td>Nordiazepam 220 ng/mL</td>
<td>Hydrocodone 61,000 ng/mL</td>
</tr>
<tr>
<td>Hydrocodone 3,800 ng/mL</td>
<td>Dihydrocodeine 7,000 ng/mL</td>
</tr>
<tr>
<td>Dihydrocodeine 340 ng/mL</td>
<td>Hydromorphone 4,200 ng/mL</td>
</tr>
<tr>
<td>Acetaminophen 110 µg/mL</td>
<td>Diazepam Less than 50 ng/mL</td>
</tr>
</tbody>
</table>

Reference:

CALL FOR CASE NOTES

We need your contribution! This need not take much time.

Your case note should be about 1/2 page in length, no more than a full page. Material and/or a disk (arial font, size 10, Microsoft Word 6.0 preferred) may be submitted to:

Joseph R. Monforte, Ph.D., DABFT, ToxTalk Editor
42408 N. Sombrero Rd., Cave Creek, AZ 85331-2821
Or fax: 480-595-MONF (6663). PLEASE remember that Arizona is hours behind the East Coast.

NOTE: Dr. Monforte has returned to his original e-mail address: DrMonforte@aol.com
The rarely-checked alternate is still monfortej@juno.com

Other items of interest to SOFT members are also welcome.
NEW DRUGS
Submitted by Daniel Anderson, Los Angeles County Department of the Coroner

Ziprasidone (Zeldox®)

Structure:

Manufacturer: Pfizer, USA
FDA Status: -July, 2000 - Advisory Committee to the FDA recommended approval
-July, 1998 - Approved in Sweden
CAS registry No.: 146939-27-7 (free base)
Chemical Name: 5-(2-[(4-(1,2-Benzisothiazol-3-yl)piperazin-1-yl)ethyl]-6-chloroindolin-2-one hydrochloride hydrate - or - 2H-Indol-2-one,5-[2-[4-(1,2-benzisothiazol-3-yl)-1-piperazinyl]ethyl]-6-chloro-1,3-dihydro-
Molecular formula: C_{21}H_{21}ClN_{4}OS
Molecular weight: 412.949

Therapeutic Category: -Neuroleptic, Atypical antipsychotic for Schizophrenia
-High affinity and selectivity for dopamine and serotonin receptors
-Reduced sedative behavior compared to Haloperidol and Risperidone
Bio-availability: Oral - 60%
Protein Binding: Greater than 99%
Volume of Distribution (V_d): 2.3 L/kg
Metabolism: -Extensively metabolized in liver
-Mild-to-moderate impairment of renal function has minimal effect
Half-Life (T_{1/2}): 4-5 hours

Submit information on new drugs relative to forensic toxicology to:
Daniel Anderson, M.S. L.A. County Coroner’s Dept., 1104 N. Mission Road, Los Angeles, CA 90033
E-mail: danderso@co.la.ca.us Ph: 323-343-0530

DRUGS IN THE NEWS
Submitted by Vincent M. Papa, Ph.D. Brooks AFB, TX. 78238

BETA BLOCKERS: USA Today reported in February that the use of Beta Blockers gives golfers an unfair edge. Beta blockers are a family of more than ten legal prescription drugs. In general, they reverse the effects of adrenaline and decrease heart rate which can result in a feeling of euphoria. They are not banned by the Professional Golf Association (PGA). They are banned in certain Olympic sports.

PPA: Recently, USA Today and the major television networks reported that the Food and Drug Administration ordered a recall of phenylpropanolamine (PPA) from the OTC market. This was based on recommendations of a scientific advisory panel after a Yale University study showed an increased incidence of cerebral vascular accidents (CVA) in various populations using the products. Last year at least 4.5 million dosages that contained PPA were sold in the US. It is a sympathomimetic drug that is approximately equivalent to ephedrine in its pharmacological properties. The D form occurs naturally in certain plants and cannot be distinguished by most analytical procedures. PPA is available in oral doses of 6-50 mg. It is an ingredient of numerous diet aids and can be found in combination with antihistamines and analgesics.


(Journal Club continued next page . . . )


Ekwall, B. and M. Sjostrom “MEIC evaluation of acute systemic toxicity - Part VIII. Multivariate partial least squares evaluation, including the selection of a battery of cell line tests with a good prediction of human acute lethal peak blood concentrations for 50 chemicals” ATLA Alternatives to Laboratory Animals 28 (Suppl 1): 201-234. (2000).


MEETING ABSTRACT DEADLINE extended to 7/01
CAREER OPPORTUNITIES

Positions available are listed for the consideration of SOFT members. There is no fee for this service. The information will be repeated in the next issue only if the person who submitted it confirms the information. If you have a job position available, FAX (480-595-6663) or E-MAIL (DrMonforte@aol.com) to ToxTalk or mail to: Dr. Joseph Monforte, ToxTalk Editor, 42408 N. Sombrero Rd., Cave Creek, AZ 85331-2821.

M.E. CHIEF TOXICOLOGIST to manage ME post-mortem tox lab and create/execute new comprehensive tox program in newly renovated facility. Advanced degree in tox and 5 yrs experience preferred. $80,134 - $101,318/yr. Serves at the pleasure of the appointing authority. Contact Jonathan Arden, M.D. by phone (202-698-9001) or fax (202-698-9101) or e-mail (jaronathan.arden@dc.gov).

The following employment opportunities are listed on the SOFT website (2/28-5/31/01). For more information, go to www.soft-tox.org

Position – City – State - Post Date
Sr. Criminalist Mesa AZ 5/31/01
Toxicologist Houston TX 5/31/01
For Sci (Breath Alcohol Sect Missoula MT 5/25/01
Positive Certif Scientist Des Plaines IL 5/25/01
EMIT - Supervisor Fort Worth TX 5/18/01
Sr. Toxicologist Minneapolis MN 5/13/01
Toxicologist I (postmortem tox Miami FL 5/11/01
Toxicologist II (postmortem tox) Miami FL 5/11/01
Criminalist II and III Phoenix AZ 5/4/01

PROFESSIONAL CALENDAR


MAFS 30th ANNUAL MEETING 2001 - A FORENSIC ODYSSEY - September 24-28, 2001, Minneapolis, MN, Contact Dan Bergman (Dani.Bergman@state.mn.us) or Ann Marie Gross (Ann.Gross@state.mn.us) or check out the MAFS website at: http://www.mafs.net for the latest information.

NORTHEASTERN ASSOCIATION OF FORENSIC SCIENTISTS: October 3-6, 2001, Mt. Snow, VT. Contact Mary Eustace 914-231-1810, e-mail: mme1@westchestergov.com

INTERNATIONAL ASSOCIATION OF FORENSIC SCIENCES: September 2-7, 2002, Montpellier, France. Information by e-mail: algcsi@mneur.fr

All members and others are encouraged to contribute to ToxTalk. Please mail your contribution to:

Joseph R. Monforte, Ph.D., DABFT, ToxTalk Editor
42408 N. Sombrero Rd, Cave Creek, AZ 85331-2821

E-mail: DrMonforte@aol.com or Fax: 480-595-6663 (after 11 a.m. E.S.T. please)