

# Toxicology News

(FORMERLY *FORENSIC URINE DRUG TESTING NEWSLETTER*)

**MARCH 1988 – JUNE 2009**

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March	Clopidogrel Is Thienopyridine Leader for Atherosclerosis Street Drugs BZP and TFMPP Can Be Mistaken for Ecstasy Soma Coma, or Carisoprodol Intoxicaton, Makes Comeback	Koerber Hang/Rocco/Wilson Bora
<b>2008</b>		
December	Carbamazepine Offers Case Study in Pharmacogenetics Ethylene Glycol Toxicity Testing Can Be Challenging Oxcarbazepine Offers Control of Epilepsy with Less Toxicity	Bukaveckas Ferguson/Garg Berry
September	Lean Production Principles Can Apply in the Laboratory Dextromethorphan Is Popular OTC Drug for Young to Abuse Laboratory Plays Key Role in Chronic Pain Management	Collins/Wiersma Snozek Walker
June	CLSI Publishes Guidelines on Toxicology and Drug Testing Butyrylcholinesterase Action Is Vital, But Ill-Understood Regional Organizations Offer Access to Education Programs	Armbruster Johnson Frederick
March	Immunosuppressant TDM Has Successes and Challenges Despite First Impressions, Lamotrigine Requires TDM Unexpected Metabolites May Complicate Morphine Results	Abushamaa Wilson Collins
<b>2007</b>		
December	Survival of the Fittest Drives Plants to Use Toxic Defenses Case History: Overdose of Rozerem in Suicide Attempt Zolpidem Remains Popular for Treatment of Insomnia Serum Separator Tubes Are Still Controversial for TDM	Hammett-Stabler McGeorge/Wilson Boakye-Agyeman Dasgupta/Hammett- Stabler
September	Hair Tests Offer Advantages in Forensic and Clinical Uses Buprenorphine Is Alternative for Treatment of Addiction National Alcohol Per Se Law Has Decreased Fatal Crashes	Ropero-Miller Langman Bynum
June	Outbreak of Fentanyl Deaths Represents Modern Plague Case Study: Overdose of Fentanyl can be Hard to Spot Hemp Oil Products Are Not Likely to Cause False Positives	Isenschmid Krivickas Dasgupta
March	Adulterants Can Interfere with Urine Drugs-of-Abuse Tests Crystal Meth: Abuse, Toxicity and Laboratory Detection Case Report: Methamphetamine Overdose	Dasgupta/Crumpton Wang/Haller/Wu Wang/Haller/Wu



## 2006

December	EtG: Urinary Metabolite for Monitoring Alcohol Ingestion Meconium Testing Provides Indication of Drug Exposure Meconium Test Data Provides Insight on Maternal Drug Use SAMHSA Issues Advisory About Alcohol Biomarkers Quest Diagnostics Posts Workplace Drug-Testing Data	Kuntz Langman Collins Ropero-Miller Armbruster
September	Hydrocodone and Fentanyl Abuse Is Growing Problem Oral Fluid Offers Alternative Matrix for Many Applications Case Report: Overdose from Deliberate Duragesic Misuse	Ropero-Miller Wagner Ropero-Miller/ Winecker
June	Forensic Laboratories Feel the Impact of the “CSI” Effect Case Report: Ginseng and Digoxin Multidimensional GC-MS Offers Improved Sensitivity Digoxin-like Substances Interfere with Immunoassays	Caruso Dasgupta Ropero-Miller Dasgupta
March	Internet Will Affect Future of Education & Expert Testimony LC/MS and LC/MS/MS Are Tools that Warrant Caution Continued Oxycodone Abuse Creates Analytical Challenge	Stout Maurer Langman
<b>2005</b>		
December	Herbal Medicines can Cause Significant Drug Interactions Laboratories Must Validate Test Method Characteristics Serotonin Syndrome Presents a Diagnostic Challenge to EDs	Dasgupta Brunelli Fowler
September	DREs: Indispensable Tool for ID of Drug-Impaired Drivers Product Safety Commission to Test Child Jewelry for Lead Methadone: A Decade of Emerging Abuse and Toxicity	Page Frederick/McMillin Ropero-Miller
June	Selective Serotonin Reuptake Inhibitors are Diverse Group Ask the Experts Q&A on Glomerular Filtration Rate	Garside King
March	Immunoassays Continue to Improve, Expand, and Evolve Many Resources Help Labs Cope with Pesticide Exposures Oleander Poisoning Creates Challenges for Laboratories Oleander Case Studies Show Dangers of Eating Wild Things	Winecker Fisher/Frederick Dasgupta Anderson/Sandberg
<b>2004</b>		
December	Emergency Toxicology Labs Face Many New Challenges Distinguishing Children from Adults in Toxicology: Part II New Publications on Drugged Driving	Kwong Middleberg Kerrigan
September	Distinguishing Children from Adults in Toxicology: Part I Abuse of Dietary Supplements is Common and Dangerous	Midleberg Simone
June	LC/MS Provides New Capabilities in Toxicology Propoxyphene: Still Popular after Five Decades of Use	Hall/McCutcheon Poklis
March	Postmortem Redistribution of Drugs Antidepressants Require Care in Postmortem Interpretation Case — Principles TDM Part II	Anderson Ropero-Miller Maples and Farrar

## 2003

December	Alternative Drug-Delivery Systems NACB Emergency Toxicology Guidelines Case — Pediatric TDM Part I	Jentzen Armbruster Maples and Farrar
September	Update on New Anti-Epileptic Drugs Online Data Sources on Drug Trends	Baker Ingall
June	Methadone: An Old Drug Achieves New Notoriety Assay Performance Must be Defined and Verified Regularly Ask the Expert: Determining Immunoassay Cutoff Concentrations	Winecker Armbruster Kerrigan
March	Oxycodone: Recognition and Pharmacogenomics Changes Urged in On-Site Correction of Deficiencies	Jannetto/Gock Markus

## 2002

December	Pharmacogenetics Helps in Therapeutic Drug Monitoring Urine and Vitreous Humor Aid Postmortem Alcohol Testing Metal Inhalation Can Result In a Variety of Toxic Effects	Valentine/Jenkins Garriorr Frederick
September	OTC Anabolic Steroids Pose Unknown Risks Creatinine Provides Validity Measure in Urine Drug Tests	Chan/Sample Ropero-Miller
June	Urine Alcohol Testing is a Valuable, Underused Tool Labs Need to Set Computer Confidentiality Policies Drugs in Water Pose an Emerging Water Quality Issue	Kadehjian Markus Chapman
March	Detection of Drug-Impaired Driving can be Difficult Labs Should Prepare Now for Chemical Terrorism Dangers	Kerrigan Valentine

## 2001

December	Dietary Supplements Face Fewer Regulations Testing in Opiate Therapy Requires Assay Knowledge OxyContin Abuse Grows	Quattrone Valentine/Mathews Merves/Goldberger
September	Club or Rave Drugs Offer Challenges to Laboratories	Valentine/Kerrigan
June	GHB and Precursors (Part II): Management and Analysis Taiwan Conducts Urine Tests as Part of War on Drugs	Kerrigan Liu/Tsay/Li
March	GHB and Precursors (Part I): Use, Effects, Pharmacology Inhalation of Volatiles is a Growing Abuse Problem	Kerrigan Linder

## 2000

December	Adulterants Continue to Challenge Laboratories Difference between Digitoxin and Digoxin More Than “It” Drug-Test Reporting Moves Beyond Positive and Negative Limit of Absence Provides Assay Performance Measure	Jambor Jortani/Valdes Armbruster Armbruster
September	Drug-Facilitated Sexual Assault: Fact and Fiction A Forensic Toxicology Reviews <i>Ur-ine Trouble</i>	Kerrigan Armbruster

June	European Urine Drug Testing Contrasts with U.S. Practices Ask the Experts — Question: Can quantitative levels determined with a cannabinoid immunoassay be used to monitor compliance in a drug-treatment program? How quickly do levels decrease? How long does it take to go from positive (>50 ng/mL) to negative? Can Ecgonidine in Urine Be a Marker for Use of Cocaine?	Beck/Rivier Answer provided by Valentine  Paul
March	Interferences Can Cause Spurious Screening Results LSD Remains a Mysterious and Challenging Drug Ask the Experts — False-Positive Result for Benzodiazepines?	Valentine Kerrigan —
<b>1999</b>		
December	Metabolite Test Extends Time Period for Detecting LSD Use Report Reveals Trends in Drugs Seen in Poisonings	Foltz Linder
September	Blood-Alcohol Analysis Should Be Considered as a System LC/MS Features Many Analytical Advantages	Dubowski Fitzgerald
June	Neonatal Drug-Test Choices Offer No Easy Answer Control Samples are Key to Forensic Toxicology Quality	Bertholf Armbruster
March	Biochemical Indicators of Alcohol Abuse Urine and Saliva POCT for Ethanol Requires Clear Goals NICU Implements Custody Chain	Jones Valentine —
<b>1998</b>		
December	Labs Show Progress in Improving Test Quality Should Laboratories Continue Testing for Methaqualone	Peat Poklis
September	Congress Examines Test-Sample Matrices MRO Case Studies Illustrate Variations in Interpretation	— Swotinsky
June	Court Testimony: “Mental Efforts Under Criticism” Case Study — Isopropanol can be an Abuser’s Alcohol of Choice Case Study — Dronabinol Therapy Helps Treats AIDS-Related Anorexia	Benjamin Copeland Copeland/Wininger
March	Should Labs Test for the “Other” Opiates Laboratories Must Develop 6-Acetylmorphine Methods	Welch Goldberger
<b>1997</b>		
December	Medical Marijuana: Smoke It or Burn It? Case — Accidental Arsenic Exposure Potential for Cross Reactive Interference by Commonly Prescribed Therapeutic Drugs with the EMIT II LSD Test	Benjamin Copeland  Brown
September	Limitations of Immunoassays Ask the Experts — Effects of IV Fluids on BAC Ask the Experts — Beating Drug Tests Legal Hemp Foods Can Cause Positive Marijuana Screens	Copeland Brown Goldberger Armbruster
June	GHB and Roofies: Drugs of the 1990s  Ask the Experts — Collection of Urine Specimens	Ropero-Miller/ Fraser Copeland

March	Methamphetamine and Amphetamine Testing Case — Can Lab Tests Tell Heroin from Morphine Overdose Ask the Experts — Blood Spots and Newborn Screening	Welch Swanson Hickey
<b>1996</b>		
December	Point-of-Care Testing Case — Solid-Phase Microextraction is More Sensitive for Volatiles Ask the Experts — Elevated LDH and Interference with Drugs of Abuse Ask the Experts — Unconventional Matrices Used in Screening for Drugs of Abuse	Hickey Brewer/Habben Brown  Copeland
September	Serotonin Metabolism Marks Alcohol Intake Case — Point-of-Care Drugs Tests Not Needed in Newborn Nursery	Beck/Helander/Jones Copeland
June	Emergency Management of the Poisoned Patient Case — Dextromethorphan Can Cause False-Positive PCP Screen Ask the Experts — Information on Drug Use in the United States	Copeland Welch/Shaw Welch
March	DOT Alcohol Testing Guidelines Overview Case — Drivers Must be on Drugs to Use the Robitussin Defense Ask the Experts — Breath Alcohol Testing	Brown Brown Brock
<b>1995</b>		
December	Third-Party Management of Blind Test Specimens Case — Fetal Hair Analysis Can Reveal Exposure to Codeine  Ask the Experts — Bladder Beer	Bucher Cirimele/Krintz/ Tracqui/Mangin Brown
September	A Laboratory Test That Detects Smoking? Skills Assessment of Personnel is More Important Than Ever	Nipper Roberts/Casey
June	Succeeding in the '90s Case — Phencyclidine Overdose Has Unexpected Source New Technique Could Make Subjects Sweat Over Test	Crolla Haghighat-Kish Nipper
March	Intrauterine Drug Exposure Dangers Case — Drugs Can Interact to Cause Death at Lower Thresholds Ask the Experts — Is meconium a better sample than urine for the determination of drug exposure during pregnancy? Woman Charged with Murder in Breastfeeding Infant's Death	Fehr Tsakalog/Klug/Klug  Moore AAFS
<b>1994</b>		
December	Uncommon Matrices Aid Postmortem Studies Point/Counterpoint — DNA Testing for Sample ID Will Require Creation of Standards Case — Lactate and LDH Can Cause False-Positive Alcohol Assays	Apple/Kloss  Eisenberg Brown
September	HHS Revises Rules for Testing Programs Case — Vitreous Humor Can Supply Valuable Clues as Alcohol Sample	Nipper Brown
June	Saliva as a Specimen for Alcohol Testing Point/Counterpoint — Unions Publish Guides to Drug Testing with Inaccuracies Case — Concurrent Use of Cocaine and Ethanol Yields Cocaethylene	Brown  Abbott Jatlow

March	Drug Testing of Health Professionals Point/Counterpoint — Masking Strategies Cannot Beat Tests for Steroids Case — Laboratories Should be able to Detect Adulteration Products	Nichols Chan Abbott
<b>1993</b>		
December	Sample Adulteration and Other Challenges Case — Tolmetin is a Potent Interfering Substance for Emit Drug Assays	Broussard Skogen
September	Disabilities Act to Affect Drug Testing Point/Counterpoint — Analysis of Hair for Drugs Can't Cut it in the Workplace	Evans Goldberger
June	Case — Passive Exposure to Crack Can Cause Intoxication Positive Rates End Four-Year Decline Point/Counterpoint — Urine Drug-Test Results Cannot be Correlated with Impairment Point/Counterpoint — MRO Review of Negatives Appears Useless, but is Often Required Published EMIT Barbiturate Cutoff is Inaccurate	Apple SmithKline Apple Abbott Hawkins
March	Breath-Alcohol Analysis Point/Counterpoint — Random Testing Presents Choices and Trade-Offs PCR Test Can Link Specimen to Person Who Provided It	Broussard Burtis Butler
<b>1992</b>		
December	Test Reports Require Security Measures Point/Counterpoint — Laboratories Must Establish Limits of Detection	Lawson Smith/Baylor
September	The Psychological Effects of Steroids Point/Counterpoint — Quality Control Specimens Fall Through Regulatory Cracks Case — Analysis of Diuretics in Urine Drug-Testing Laboratories Must Avoid Helping Athletes Cheat International Olympic Committee's Laboratory Code of Ethics	Malone/Dimeff Willette Chan Gikas/Uryasz Gikas/Uryasz
June	Urine as a Specimen for Alcohol Testing Athletics Organizations Promote Testing Programs Point/Counterpoint — It's Time for Certification of Medical Review Officers Point/Counterpoint — Who Should Judge the Credibility of Passive Inhalation Stories? Case — Fentanyl's Pose a Legal and Analytical Menace	Flora Gikas/Uryasz Upfal Shults Polishuk/Nipper
March	Analysis of Positive Rates and Trends Case — Case Study Confirms Poppy Seed Guidelines	Whitney/Thompson ElSohly
<b>1991</b>		
December	Results Differ by Screening Method Point/Counterpoint — Psychological Testing May Indicate Potential for Drug Abuse LSD Assays Pose Challenge A Locksmith's Advice on Refrigerator and Freezer Locks	Visher Jones Folz/Nelson Boynton
September	Automation Part 2: Specimen Handling and Robotics Point/Counterpoint — Poppy Seed Streusel Spoils Opiate Differentiation Guidelines Case — Test-Reporting Laws Should be for Treatment, Not Prosecution	Latven Selavka Hurd

June	Automation Part 1: Managing Information Point/Counterpoint — What is a Forensic Urine Drug Test?	Latven Butler
March	Accrediting Plans for Sports Testing Case — Barbiturate Results Require Careful Interpretation	Sample Childs
<b>1990</b>		
December	Test Results Predict Job Performance Point/Counterpoint — Secretive NIDA Program Ignores Experience	US Postal Service Batjer
September	Testing for Anabolic Steroids NIDA Consensus Conference Report Case — Methamphetamine Stereoisomer Resolution Can Prevent False Positives	Chan — Erfurth
June	Epidemiology of Drug Positive Results Point/Counterpoint — Drug Testing did not Reduce Southern Pacific's Accident Rate Case — Cannabinoid and Amphetamine Assays Lack Linearity at Threshold	Whitney Jones Erfurth
March	The Role of Drug Recognition Experts Point/Counterpoint — Disinformation and Hysteria, Not Results, Spawn Testing Case — The Opiate That Would Not Confirm	Mayer Guerrero Sample
<b>1989</b>		
December	Southern Pacific: A Success Story in Drug Testing Point/Counterpoint — Should "Impairment" be the Criterion for Testing Point/Counterpoint — Airline Pilots Support Testing, but not Impending FAA Programs	Taggart Taggart Stone
September	Creating Parameters to Fit a Client's Goals Point/Counterpoint — Cutoff Concentrations Reflect History Rather than Science Case — Relative Value of TDx, EMIT, RIA	Evans Rollins Standefer
June	Private Sector Coalition Opposes Federal Regulation How to Find and Verify Reference Materials Point/Counterpoint — An Unconfirmed Positive is a Negative Case — Ibuprofen Interference with TLC Confirmation	Bensingher Welch Mathews Brunk
March	Creating a Custom Blind PT Program Point/Counterpoint — How Commercial Labs Can Offer Top Quality at Reasonable Prices Case — Cannabinoid/Creatinine Ratio Improves Accuracy in Monitoring for Marijuana Re-Use	Childs McNulty Wimbish
<b>1988</b>		
December	Legal Issues in Drug Testing: Review of Recent Cases How to Select and Monitor a Drug Testing Lab Point/Counterpoint — Quantitation Improves Lab Performance Case — Differentiation of Optical Isomers of Methamphetamine and OTC	Kasler Frings Peat Sample

September	How to Become an Expert Witness Proper Records Aid in Litigation Point/Counterpoint — Is TLC Appropriate for Confirmation? Case — EMIT and TDx Tests for THC: Same Cutoff, Different Results	White Long Sunshine Standefer
June	Treating the Specimen as Evidence Point/Counterpoint — Clinical Labs: Meeting the Forensic Challenge Case — Differentiating OTC Drugs	Mell Moyer Sample
March	Having Confidence in Your Results NCAA Testing Program May Deter Drug Use Point/Counterpoint — CAP vs NIDA Case — Exercise in Interpretation: Methamphetamines	Spiehler Uryasz Butler Sample