



# United States Drug Testing Laboratories, Inc.

## Up coming events:

January 21-23	NEO Prep	New Orleans, LA
January 24-26	Gravens	Orlando, FL
February 16-17	Idaho Perinatal Project	Nampa, Idaho
February 22-26	NEO	Orlando, FL
March 8-10	OB Challenges	Phoenix, AZ
March 15-16	Counselling Advances	Las Vegas, NV
March 21-24	NCNN	Orlando, FL
March 30-April 1	Perinatal Practices	Scottsdale, AZ

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## Assay Developed for Propofol Glucuronide Two Years Before Michael Jackson's Death

By Charles A. Plate, Ph.D.

Propofol abuse is nothing new. In 2009, a concerned colleague came to USDTL asking if we could test for propofol in a matrix other than blood, which was expensive and did not give a long enough look back. He had been unable, at that time, to find another laboratory to provide such a test. USDTL's research team went straight to work.

Propofol, whose trade name is Diprivan®, is a fast acting intravenous anesthetic that is used for short duration surgical procedures. What our researchers learned was that a metabolic byproduct of propofol, propofol glucuronide, is excreted from the body in urine, human hair and nails. Propofol glucuronide in urine can be detected for two to three days, while hair and fingers nails give us windows of detection up to three and eight months, respectively, following administration of Diprivan®.

The amount of propofol glucuronide found in hair is in the picogram (10<sup>-12</sup> grams) range. To measure the propofol glucuronide in hair, the hair is pulverized and the propofol glucuronide is extracted and enriched by solid phase extraction. The propofol glucuronide is then isolated, identified and quantitated using high pressure liquid chromatography coupled to the most sensitive

mass spectrometer currently available (LC-MS/MS).

In 1993 a paper was published showing that propofol may have an abuse potential in healthy volunteers<sup>1</sup> and fourteen years later a survey of 126 anesthesiology training programs revealed that eighteen percent of them reported incidences of propofol abuse among anaesthesiology personnel.<sup>2</sup>



Propofol is not a controlled substance and is widely available in hospitals and clinics. The extent of its abuse among healthcare professionals to date can only be estimated by self-report, report by others witnessing someone abusing the drug, and, unfortunately, *autopsies*.

As propofol abusers are usually highly-trained, medical professionals, they are aware that the urine assay can be beaten simply by abstaining from propofol abuse for three to five days prior to testing.

In response, USDTL developed assays to check for the metabolite propofol glucuronide deposited in human hair and nail matrixes. These new hair and fingernail assays are more difficult to get around, thus providing healthcare administrators the opportunity to determine the extent of propofol abuse within their organizations, get the propofol abusers into treatment programs, and save lives as well as careers. The propofol glucuronide hair and fingernail assays bring a potentially, deadly drug abuse problem, which has been effectively closeted, out into the light where its true extent can be objectively measured.

Anyone interested in obtaining further information about USDTL's hair and fingernail propofol glucuronide assay should contact USDTL Customer Service at 1-800-235-2367.

1. Zacny JP, Lichtor JL, Thompson W, Apfelbaum JL. Propofol at a Subanesthetic Dose May Have Abuse Potential in Healthy Volunteers. *Anesth. Analg* 1993 (77): 544-552.

2. Wischmeyer PE, Johnson BR, Wilson JE et al. A Survey of Propofol Abuse in Academic Anesthesia Programs. *Anesth. Analg* 2007 (105): 1066-1071.

**"We're working with large anesthesia groups who have found [proactive testing] to be very helpful as a tool for:**

- 1. keeping their physicians safe and,**
- 2. keeping their patients safe and,**
- 3. enhancing their business opportunities because of the high risk of this particular speciality."**

**~Dr. M Sucher MD,  
Greenberg & Sucher, PC**

## An interview with Michael A. Sucher, MD, Medical Director, President and Contract Manager Greenberg & Sucher PC. (transcribed)

By Nancy J. Parra

It was the third morning of much needed rain in Scottsdale, AZ. when my meeting with Dr. Michael Sucher was delayed due to a wrong turn on my part. A quick phone call had me moving in the proper direction and soon the receptionist stepped out to greet me and show to the office. Dr. Sucher is a man in constant motion with a shock of white hair and a genuine smile. He obliged my video camera asking only that we film in



his Assistant's office because she was on vacation and her office was tidier.

As I set up the camera, we talked about the conference I had attended in Chandler and the spookiness of the desert

at night and how it could lend itself to a suspenseful book. "One mystery series I enjoy is Janet Evanovich's Stephanie Plum series. I'm currently reading Explosive Eighteen," Sucher said. "It's the characters that keep me interested. Evanovich makes you care."

Caring is something Dr. Sucher does every day of his life. "I'm an Addiction Medicine Physician. I've been in this field for over twenty years, now. Most of my work centers around healthcare professionals and other professionals and executives. I help in assessing referral into treatment and after treatment to ensure to whoever might have an appropriate interest that the professional is sober and in recovery and safe to do whatever they do"

I had to ask, why he did what he does. After all he could have done anything. That gave him a laugh. "Well, I think addiction is one of those illnesses we are learning an amazing amount about every day. And that it's also probably the most treatable of chronic illnesses. You can have an outcome that in many ways could be better than if you had not dealt with it. There are not many chronic diseases such as cancer, heart disease, and diabetes, that you can make that kind of statement about.

Individuals who are high functioning and have high levels of responsibility in safety sense of occupations have a duty to the public that they certify to be safe and healthy enough to perform their jobs with appropriate skill and safety. For me to be able to help them understand and learn about their illness and get them the help that they need and help assure that they are safe and that they are doing well is a real privilege."

*How does United States Drug Testing Laboratories, Inc help you with your mission?*

"Interestingly enough for many years addiction was not looked at as a medical illness. I have always thought that it was a medical illness, a chronic medical illness.

It has signs and symptoms and you can diagnose this disease. There are certain testing modalities to help tell you what is truly going on with a particular patient. The most important and most objective testing we do is drug testing and USDTL in our minds is the premier laboratory in the country for doing the specialized type of testing that we have to do on individuals such as physicians and dentists and other high functioning professions.

We have patients who literally have access to everything legal and illegal and in unlimited quantity. To do high level drug testing you need a partner such as USDTL who understands our needs and understands the type of situations our patients get into. USDTL has really been at the forefront of hair testing, nail testing,

testing for alcohol metabolites, synthetic narcotics and sedatives that most labs don't have the ability or even the interest in developing those type of tests because the market for that type of testing is much more narrow than the broader testing like the DOT and other employers.

They really are leading the way in terms of markers for alcohol use. Alcohol is our biggest risk of relapse group. Regardless of what drug that got the patient in trouble because it's legal and widely available, it's inexpensive and rapidly eliminates from the body. So the ability to test for metabolites for alcohol and the level of duration and detection. The ability to test for those things in the

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hair and nails gives us much longer significant information. PEth in blood allows us to have a high degree of accuracy and comfort that we can look back for up to three weeks. It's this kind of leadership that makes USDTL the perfect partner for us.

"The highest risk group in medicine is anesthesiology. Anesthesiologists have a notoriously high rate of addiction and substance abuse issues. They are particularly prone to abusing operating room drugs such as fentanyl, sufentanil, and propofol. Drugs that are highly potent and have a short duration of action.

"The fact that we have partnered with USDTL means we can go forward to help anesthesia groups and hospitals to do proactive testing for operating room drugs to help identify and treat issues before they become a problem that causes harm to a physician or any other patient and the institutions that they work in.

It's that type of forward thinking and those types of programs that are *proactive* rather than reactive and waiting until something bad happens to be out there ahead of the curve is truly unique.

"I think it is the wave of the future.

"We did meet with the Medical Board of California recently. The Executive Director of the medical board was thrilled that someone was thinking proactively. He was extremely interested [in our program.]

"We're working with large anesthesia groups who have found this to be very helpful as a tool for: 1. keeping their physicians safe and, 2. keeping their patients safe and, 3. enhancing their business opportunities because of the high risk of this particular speciality. I think without a partner like USDTL doing something like this would not be possible.

This is just the beginning. Much more will be coming as we continue to look at other ways to serve patients, to serve professionals and other clients.



President Douglas Lewis

### Ask the President

**Q: Can Propofol Glucuronide be detected in matrixes other than Urine? Are there advantages to other matrixes?**

**A: Yes, Propofol Glucuronide is detectable in fingernail and hair specimens. These depot matrix specimens provide a wide window of detection for propofol ingestion and can show a history of propofol ingestion of weeks to months.**

*Do you have a question for USDTL?*

*You can ask President and Scientific Director, Douglas Lewis by e-mailing your questions to [nancy.parra@usdtl.com](mailto:nancy.parra@usdtl.com). Your question may be featured in our newsletter or on our blog at [www.usdtlblog.blogspot.com](http://www.usdtlblog.blogspot.com).*