No group of illicit substances has posed a bigger challenge for the drug testing industry than synthetic cannabinoids (syn-cans), better known by the street names “Spice” and “K2.” New and different syn-cans are routinely created. The massive number available and constantly evolving variety have turned syn-cann testing into a cat and mouse game of epic proportions. They are so difficult to test for, that one of the most often reported reasons for using syn-can’s is for a drug user to avoid a positive drug test result.

The traditional approach to drug testing may not be the best way to come at the problem of syn-can testing. But, there is a way to build a better mousetrap. Enter, nails and hair - drug testing specimens with long-term windows of detection.

The primary problem with syn-can testing is cost. The nature of the syn-can drug trade makes comprehensive testing for syn-can use nearly impossible. Drug testing in fingernails and hair, however, provides a clever and powerful way to get around the limitations in syn-can testing. Let’s break it down into details.

First, a little history. The first synthetic cannabinoid (known as JWH-018) was first detected in the product “Spice” in December 2008. Since then, more than 500 syn-can’s have been discovered in “herbal” products that are sold over-the-counter. Over 500! That’s almost 2 new synthetic cannabinoids being developed every week - not including the ones we are unaware of.

How can you test for a class of substances that evolves at such a rapid pace? The types and amounts of syn-can’s in the horde of “Spice” products on the market varies greatly. You simply can not test for every single syn-can out there. This is where syn-can testing becomes too cost prohibitive, and a logistical nightmare.

On top of all that, you don’t always know what you are testing for. You won’t be able to test for syn-cans that have not yet been discovered. Take for example the syn-can product known as “Purple Haze,” which claims to be “JWH Free.” Several chemical families of syn-can’s have been discovered, and most syn-can’s fall into the JWH category. In fact, JWH compounds are what are most commonly tested for, when attempting to detect syn-can’s. If “Purple Haze” is actually lacking any JWH compounds, how can it be detected?

How do fingernail and hair specimens overcome the difficulties of syn-can testing? The short answer is, they don’t. Instead, fingernail and hair testing allow addiction professionals to circumvent the pitfalls of syn-can use and detection and get to the root of a syn-can user’s drug problem - their drug of choice.

It turns out that syn-can’s are not the drug of choice for most users. A recent 2014 survey of syn-can users found that 71% of them only used syn-can’s to avoid a positive drug test. Once the threat of drug testing has passed, they return to their drug of choice. A separate research study reported that for 80% of syn-can users, the co-occurring drug of choice was marijuana. Other drugs included cocaine, MDMA (“Ecstasy”), benzodiazepines, heroin, and others. Co-occurring drug use was discovered in that study using hair specimens.

This is where fingernails and hair can help. The window of detection in fingernail testing is up to six months, and up to three months in hair. With such an extended look-back, fingernail and hair testing will detect a syn-can users drug of choice, even if the user took a break from their preferred drug in anticipation of an upcoming drug test. Whether for addiction

Continued on page 2, Syn-Can.

Purple Haze, a synthetic cannabinoid that advertises itself as “JWH Free”, which, if true, would make detection much more difficult than normal. (iStock Photo)
DEA Reschedules Hydrocodone Combination Products From Schedule III to Schedule II

Beginning October 6th, hydrocodone combination products (HCP) are now classified on Schedule II of the DEA list of controlled substances. Hydrocodone by itself is a Schedule II drug, but previous to the new ruling, HCPs have been part of Schedule III since the Controlled Substances Act was first passed in 1971. The rescheduling will dramatically change the restrictions on prescriptions of HCPs.

USDTL Develops Assay to Detect Zolpidem (Ambien®) in Fingernails And Hair
By Joseph Salerno, Science Writer, USDTL

Des Plaines, IL - United States Drug Testing Laboratories, Inc. (USDTL), a forensic laboratory specializing in drug and alcohol testing using advanced specimens, has released a new assay to detect zolpidem (Ambien®) use in fingernail and hair specimens. Previously available only in urine and oral fluid specimens, zolpidem testing in fingernails and hair offers forensic drug testing professionals new, powerful tools to meet their drug testing needs.

Since its approval in 1993 for the treatment of insomnia, zolpidem has become one of the most popular and most prescribed sleep aids. Zolpidem is a sedative-hypnotic medication that affects the same areas of the brain as benzodiazepines. In 2011, 39 million prescriptions for zolpidem products were written in the United States.1

Zolpidem use carries some risks of harm, especially when taken in combination with other substances. The number of emergency department visits related to zolpidem grew by 136% from 2004 (12,792) to 2011 (30,149).2 Other substances were involved in 57% of those ED visits, including benzodiazepines (26%), narcotic pain relievers (25%), and alcohol (14%).3

The development of zolpidem testing is driven by USDTL’s ongoing commitment to be a leader in substance abuse and alcohol detection. Zolpidem testing in fingernails and hair is now available as of October 1st, 2014.

Our Research and Development Group has made significant breakthroughs in detecting alcohol and other substances of abuse. We offer a wide range of testing services and specialize in hard to detect substances of abuse, customized assays, and advanced drug testing specimens. For more information please visit us at www.USDTL.com.

References
2. Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality. (May 1, 2013). Emergency Department Visits for Adverse Reactions Involving the Insomnia Medication Zolpidem. Rockville, MD.
Des Plaines, IL - USDTL is proud to welcome Dr. Adam Negrusz, Ph.D., F-ABFT, as our new Laboratory Director. Dr. Negrusz succeeds to the position following the previous Laboratory Director, Dr. Charles Plate, Ph.D., who is transitioning to Research Director for USDTL’s Research & Development Group.

Dr. Negrusz comes to us from the University of Illinois at Chicago where he remains an Adjunct Associate Professor in the Department of Biopharmaceutical Sciences, College of Pharmacy. Dr. Negrusz received his Bachelor of Pharmacy from Nicholas Copernicus Medical University in Krakow, Poland (1981), as well as his Ph.D. in Pharmaceutical Sciences (1989). In 2001 he received a Habilitated Doctor degree (senior doctorate degree) from Jagiellonian University, Krakow, Poland. Dr. Negrusz is a registered pharmacist (1981) and licensed toxicologist (1987) in Poland.

After 8 years at the Department of Toxicology Medical University in Krakow, he joined the University of Illinois at Chicago in 1990 where he developed various procedures including the analysis of meconium, amniotic fluid and umbilical cord for cocaine. After completion of his postdoctoral training, he worked for one year as a toxicologist at the Cook County Office of the Medical Examiner.

In 1993 Dr. Negrusz rejoined the University of Illinois. In 1995 he became an Assistant Professor of Forensic Sciences and the Assistant Director of graduate studies in Forensic Sciences. In 2002 Dr. Negrusz was promoted to the rank of Associate Professor with tenure. In 2004 he was appointed Director of the University of Illinois at Chicago Animal Forensic Toxicology Laboratory. He remained in this capacity until his departure from the University in 2014.

Dr. Negrusz brings a wealth of experience to USDTL, including over 33 years in academic forensic toxicology and drug analysis. He has published nearly 60 peer-reviewed research articles and several chapters of academic textbooks. Dr. Negrusz has presented nearly 70 abstracts at scientific meetings, over 30 professional analytical chemistry reports for sponsors, and many standard operating procedures.

He is a Fellow (Toxicology Section) of the American Academy of Forensic Sciences where he served for one year as a Section Chair. Dr. Negrusz is a member of the Society of Forensic Toxicologists, where he served as a member of the Board of Directors for three years; The International Association of Forensic Toxicologists; The Society of Hair Testing; the Midwest Association for Toxicology and Therapeutic Drug Monitoring; and the Polish Society of Toxicology.

As our research efforts continue to expand at a rapid pace, Dr. Charles Plate inaugurates the new Research Director position for USDTL. In his 10 years as Laboratory Director, Dr. Plate has secured nearly three million dollars in U.S. National Institutes of Health research funding for USDTL resulting in many innovative substance abuse testing tools, such as drug and alcohol testing in umbilical cord tissue, ethyl glucuronide testing in hair and nail specimens, and phosphatidylethanol (direct alcohol biomarker) testing in dried blood spots.

Like what we have to share?
Follow us throughout the year!
We participate in the following social media and contribute new information on a timely basis.

Subscribe to eNews and other informational material and our blog at www.USDTL.com/about/newsletters.
© 2014 United States Drug Testing Laboratories, Inc.
Upcoming Events:

- January 7-9 – The 22nd Annual Children’s Law Institute Conference – Albuquerque, NM
- February 26-28 – FSAM Addiction Health Summit – Tampa, FL
- April 23-26 – The 46th American Society of Addiction Medicine Annual Conference - Innovations in Addiction Medicine and Science – Austin, TX
- April 24-27 – Federation of State Physician Health Programs 2015 Annual Meeting & Conference – Fort Worth, TX