K22 Resources for Responding to the Challenge of Emerging Drugs: Where Is the Information Your Analysts Need?

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After attending this presentation, attendees will understand the forensic resources available to help assist analysts in identifying spectral data of emerging drugs.

This presentation will impact the forensic science community by providing an overview of the growing array of information and resources available to aid in the identification and interpretation of data related to emerging drugs.

Forensic laboratories are faced with a challenge when attempting to identify unknown compounds in a sample. The rise in prevalence of new designer drugs such as "Spice" and "bath salts" has increased this challenge as uncontrolled drug analogs rapidly appear on the drug market. There exists a need in the community to provide laboratory personnel with assistance in identifying these emerging designer drugs as many of these compounds have yet to be identified and characterized in the literature.

In October 2012, the National Institute of Justice (NIJ) sponsored an analog working group meeting at which professionals representing several disciplines of forensic science were present. Attendees included commercial vendors, research institutes, federal, state, and local crime laboratories, DEA, and customs. The group discussed major challenges that forensic laboratories are faced with when trying to identify emerging drugs. Input on the most valuable resources utilized by these attendees was recorded and compiled for distribution in addition to resources identified by Response To Intervention (RTI) scientists. Resources include downloadable Electron Ionization/Mass Spectrometry (EI/MS) spectral libraries such as the Scientific Working Group for the Analysis of Seized Drugs (SWGDRUG), the American Academy of Forensic Sciences (AAFS), and Cayman Chemical mass spectral library, all of which are freely available to download online. Other downloadable resources include commercial spectral libraries that include tandem MS data and EI/MS spectral data. There are free, Web-accessible and searchable databases, such as ForensicDB, that include multiple spectral methods, structures, and instrumental parameters. Other resources include drug monographs, peer-reviewed spectral data, and active discussion forums. All of these resources provide the forensic community with spectral data for comparison and other helpful information to assist with unknown compound identification.

Although several resources are available, the challenge remains to adequately disseminate this information to the forensics community. Consolidation of these resources would allow valuable information to become available in multiple formats, therefore reaching a wider audience.

Forensic Resources, Spectral Databases, Designer Drugs