Forensic

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The Power of Precision

Don't miss any novel psychoactive substances in your sample

Using the Wiley MMHW LC-HR-MS/MS spectral library

Pierre Negri[1], Adrian M. Taylor[2]
[1]SCIEX, US; [2]SCIEX, CA

The recent influx of novel psychoactive substances (NPS) into the recreational drug market has posed serious public health and safety concerns. The ability to screen and accurately identify these chemicals is critical as these high potency substances continue to cause widespread intoxication and fatalities worldwide. High resolution mass spectrometry using the SCIEX TripleTOF® or X500R QTOF Systems combined with supporting software allows fast and confident NPS detection through the acquisition of comprehensive analyte-specific MS/MS fragment spectra, increasing selectivity and specificity for confident NPS identification.

The Wiley MMHW LC-HR-MS/MS spectral library enables accurate detection and identification of a large number of NPS and other related drugs of abuse through library spectral matching. Don't miss any NPS in your sample and increase your confidence in compound identification by using the world's most comprehensive reference used by clinical and forensic toxicologists. As shown in the example below, multiple points of high quality data are used to detect and identify the NPS 25I-NBOMe from a control blood sample. The MS/MS spectrum matched that of NPS 25I-NBOMe with an excellent fit score of 100%.

Key advantages of the Wiley MMHW LC-HR-MS/MS spectral library for NPS identification

- The Wiley MMHW LC-HR-MS/MS spectral library contains over 2,000 parent drugs or poisons, and over 3,000 of their metabolites or artifacts created using certified reference materials in over 95 compound classification groups
- Wide compound coverage including NPS carefully measured in a series of controlled conditions
- Library is compatible with SWATH® Acquisition workflows on the TripleTOF®, X-Series QTOF and QTRAP® Systems with SCIEX OS Software
- Confident identification of novel psychoactive substances in the forensic laboratory helps predicting the use of illicit drugs such as NPS and other drugs of abuse in the substance abusing population
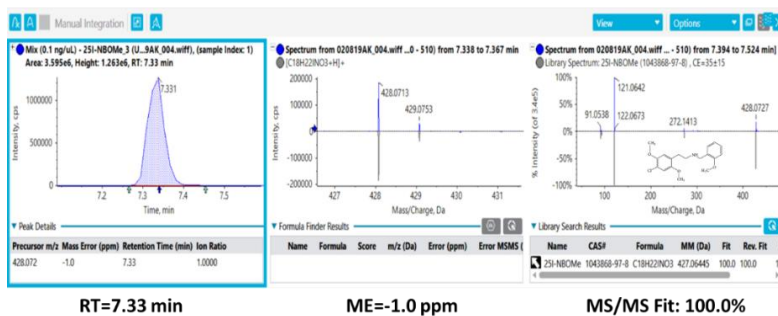

Figure 1: Increase analyte coverage and improve NPS identification using the Wiley MMHW LC-HR-MS/MS spectral library. XIC, TOF-MS and TOF-MS/MS spectra obtained showing confident and accurate identification of the NPS 25I-NBOMe from a control blood sample spiked with several NPS of interest. The sample was analyzed using SWATH® Acquisition on the SCIEX X500R QTOF System and the acquired data was searched against the Wiley MMHW LC-HR-MS/MS Library.