

Precursor Detection Using an Agilent Resolve Tactical Handheld Raman Analyzer

Authors

Sam Walker and Ana Blanco
Agilent Technologies, Inc.

Introduction

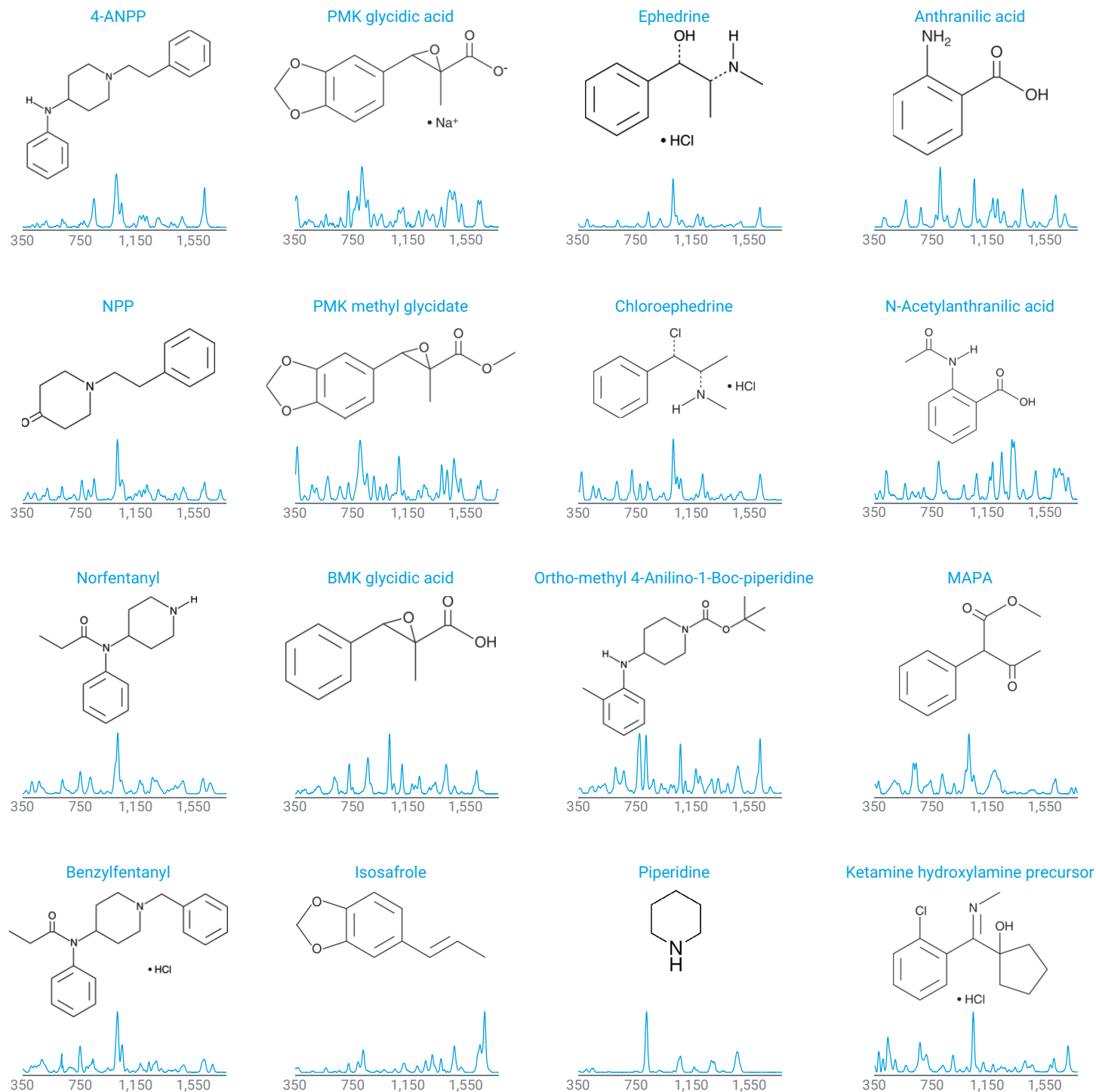
Chemicals used in the illicit manufacturing of narcotic drugs and psychoactive substances are known as "drug precursors". Drug precursors include chemicals that are one reaction away from being the drug (e.g. 4-ANPP to fentanyl), chemicals that are used in a wide range of legal applications from fragrances (e.g. benzaldehyde) to solvents (e.g. toluene), and chemicals that are multiple reaction steps away from the drug itself, sometimes called a "pre-precursor". The resulting "pre-precursor" may be sufficiently different from the main precursor that it circumnavigates legislation, mobilizing drug synthesis to any country.

The **Agilent Resolve tactical handheld Raman analyzer** uses **spatially offset Raman spectroscopy (SORS)** technology to identify hazardous materials, explosives, and narcotics concealed behind single and multiple barriers. These barriers can include colored and opaque plastics, glass, paper, card, wrapping, and fabrics. The combination of SORS, high data quality, reduced fluorescence interference, and a library continuously updated with new psychoactive substances makes the Resolve a powerful tool in the detection and identification of controlled substances. As of library version 43, over 80 different precursors can be identified using Resolve.



Figure 1. Agilent Resolve tactical handheld Raman analyzer.

Structure and Raman spectra of some precursor materials included in the Resolve library



Conclusion

The Agilent Resolve tactical handheld Raman analyzer can be used for the fast, direct identification of drug precursors in the original packaging. Direct analysis using the Resolve minimizes the risk of accidental exposure to the compounds by law enforcers.

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