

Overview

- The MT Explorer 30 (MTE 30) is a compact ion trap tandem mass spectrometer suitable for both lab-based workflows and field deployment. It enables rapid, sensitive, and accurate identification of trace analytes.
- As the cannabis industry expands and regulatory frameworks around cannabis continue to evolve, the need for reliable detection of cannabinoids has grown. Here we demonstrate successful application of a miniature portable mass spectrometer equipped with an atmospheric pressure chemical ionization (APCI) source for the detection of cannabinoids. The system provides real-time screening and confirmation, supporting quality control, regulatory compliance, and forensic analysis.

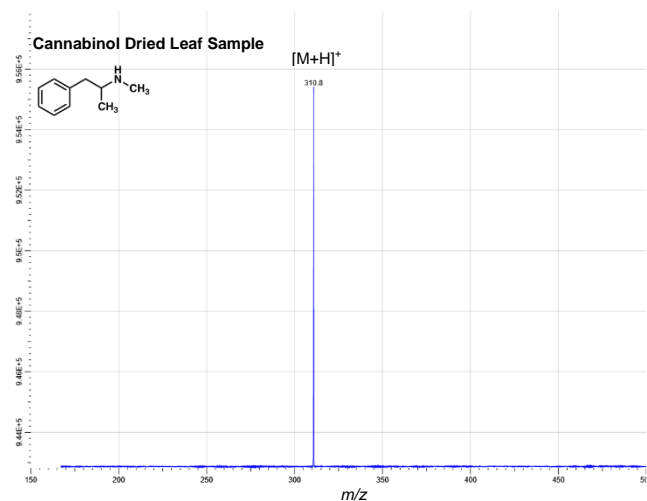
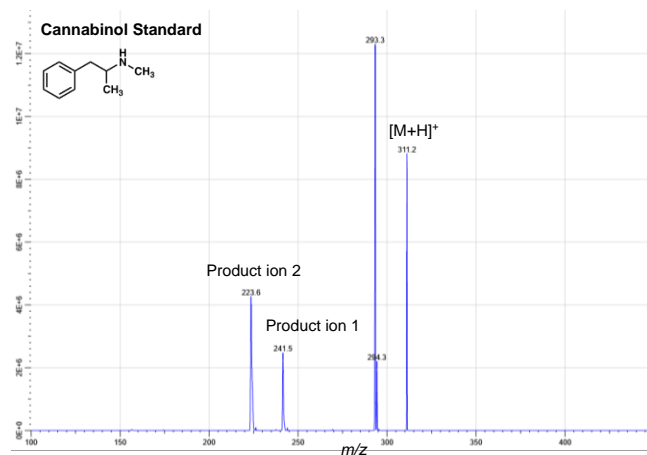
Methods

A cannabinol reference standard was obtained and diluted to a working concentration. Dried cannabis leaf was also obtained for direct analysis of the dried leaf sample. APCI-MS and APCI-MS/MS were employed for analysis on the MTE 30. 2 μL of samples were introduced to the source via micropipette and evaporated by infrared heating.



MT Explorer 30 Mass Spectrometer

Results



Results and Discussion

The MTE30 is suited for cannabinol analysis, successfully detecting cannabinol $[M+H]^+$ m/z 310.8 from direct analysis of a dried leaf sample. Additionally, the cannabinol standard was analyzed using APCI-MS/MS, producing the precursor $[M+H]^+$ m/z 311.2 and known product ions at m/z 241.5 and 223.6.