Cannabinoids Separation by Using mini LC-80 HPLC

Instrumentation

HPLC condition:-

- HPLC : model mini LC-80 (Biometrics Technologies Inc.)
- Column : Raptor ARC-18, 2.7 µm, length 150 mm and internal diameter 4.6 mm (Restek)
- Flowrate : 1.5 mL/min
- Detector : UV at 228 nm
- Isocratic system
- Mobile phase :
  A: 5 mM Ammonium formate in water, 0.1% formic acid
  B: Acetonitrile, 0.1% formic acid
  Mobile phase ratio A: B = 25 : 75
- Sample Injection volume: 20 µL

Cannabinoids Standard

- Cannabinoids Standard (3 components) 1000 µg/mL, Restek
  (Cannabinol (CBN), Cannabidiol (CBD), △9-Tetrahydrocanabinol (△9-THC))
- Cannabigerol (CBG) 1000 µg/mL, Restek
- Tetrahydrocannabivarin (THCV) 1000 µg/mL, Restek
- △8-Tetrahydrocanabinol (△8-THC) 1000 µg/mL, Restek

Biometrics Technologies, Inc.
1220 N. Market St. Suite 806, Wilmington, DE 19801, USA.
Website: www.biometrics-technologies.com

Preparation of 100 ppm of cannabinoids solution (Stock solution)

Cannabinoids of 100 ppm was prepared by pipetting 100 µL each standard bottom to the a vial and making it to the 1.0 mL with the mobile phase.

Preparation of working cannabinoids standard solution

The working standard solution was prepared by pipetting 100, 200, 300, 400, 500 µL stock solution into vials and then making it to the 1.0 mL with the mobile phase.

Result and discussion

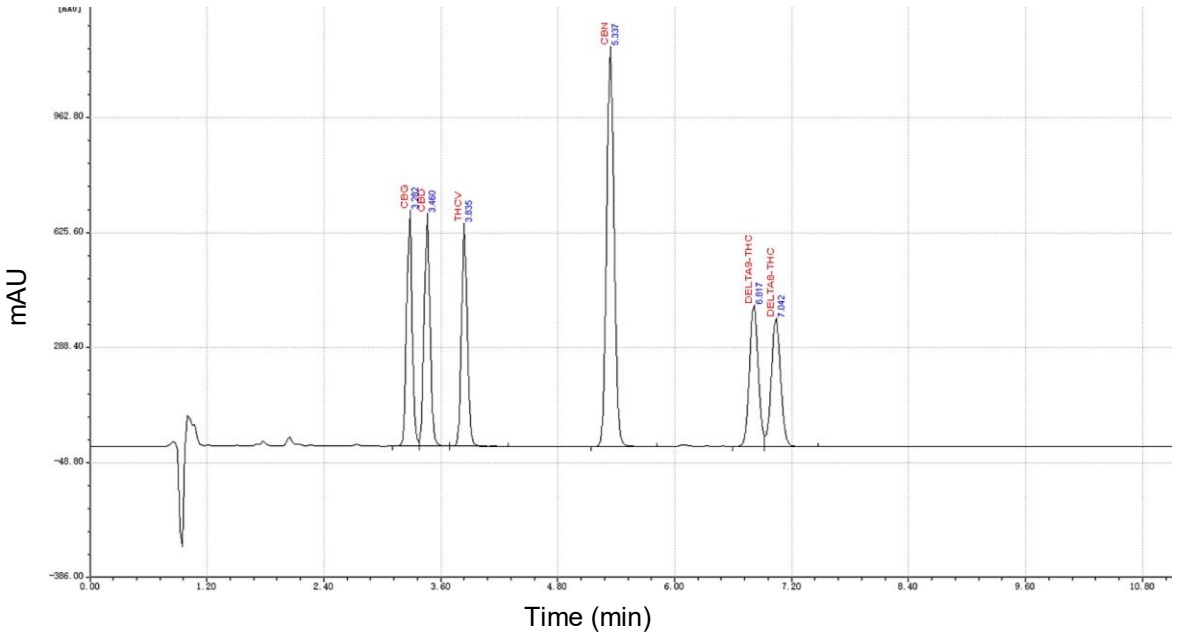

Figure 1. Chromatogram of 100 ppm cannabinoid standard 20 µL Injection, 228 nm UV Detector

Figure 1 Shows the Chromatogram for the cannabinoids analysis. The chromatogram shows 6 peaks corresponding to in order of elution Cannabigerol (CBG) at 3.284 min, Cannabidiol (CBD) at 3.460 min, Tetrahydrocannabivarin (THCV) at 3.835 min, Cannabinol (CBN) at 5.33 min, △9-Tetrahydrocanabinol (△9-THC) at 6.817 min and △8-Tetrahydrocanabinol (△8-THC) at 7.042 min.

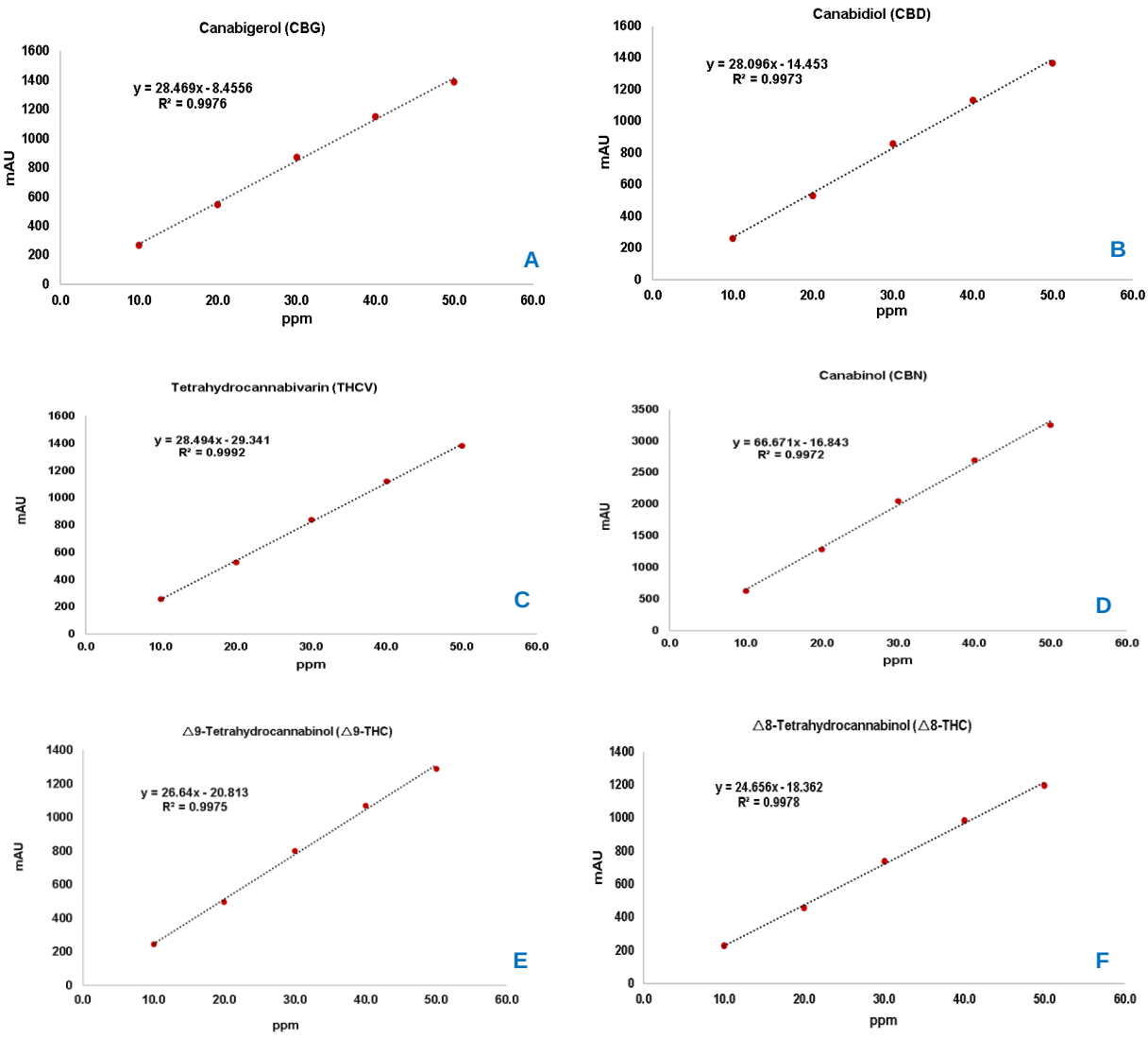

Figure 2. The calibration curve of mix cannabinoids standard solution A- Canabigerol (CBG), B- Cannabidiol (CBD) , C- Tetrahydrocannabivarin (THCV), D- Canabinol (CBN), E- △9-Tetrahydrocannabinol (△9-THC), F- △8-Tetrahydrocannabinol (△8-THC)

Figure 2 shows the calibration curve of cannabinoids which are prepared by using mix standard solution in concentration range of of 10–50 ppm. The corresponding equation and correlation coefficient are shown.

Conclusion

The compact mini LC-80 has been designed to give the chemist to have an easy-to-use HPLC for a wide range applications. The cannabinoids separation have been reported in this note showing off the application carried out in analytical laboratories can be easily and rapidly using mini HPLC.