

Detection of Cannabidiol and Cannabigerol by LC-MS for Kinetic Studies

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Objective:

To develop a method for the detection of CBD and CBG using LC-MS.

Introduction

- Cannabidiol (CBD) and Cannabigerol (CBG) are two cannabinoids found in cannabis.
- CBD is usually sold as an oil and has certain medicinal properties and no psychoactive components.
- Some medicinal properties include:
 - Antioxidative
 - Anti-inflammatory
- CBG is known to be neuroprotective
 - CBG can help with Parkinson's, Alzheimer's, and Neuropathy.
- CBG is the decarboxylated form of Cannabigerol acid (CBGA).
- CBGA is the parent molecule from which other cannabinoids are synthesized and often referred to as the "mother of all cannabinoids"

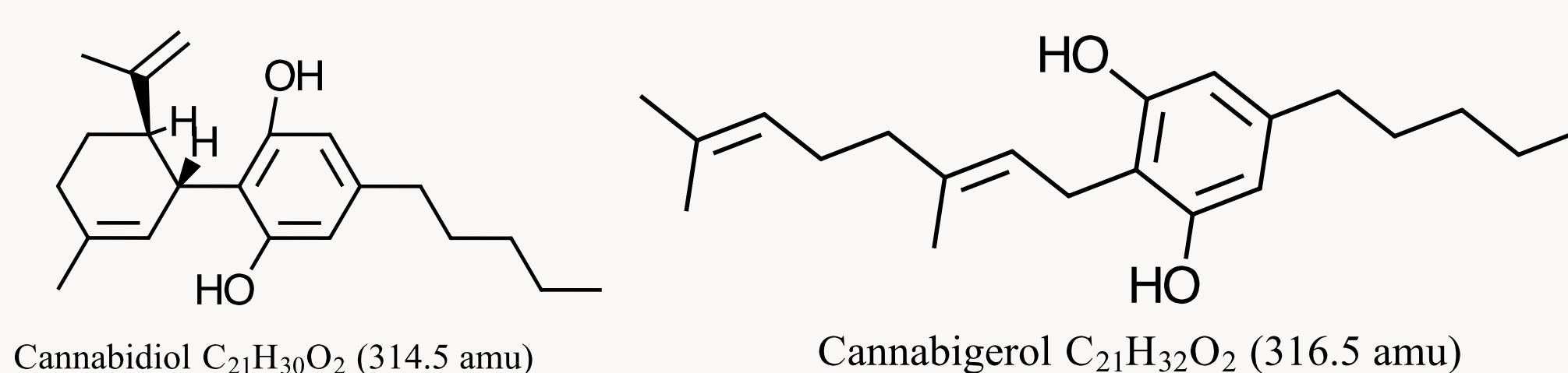


Figure 1. Structures of CBD and CBG drawn using ChemDoodle.

Method

Instrumentation

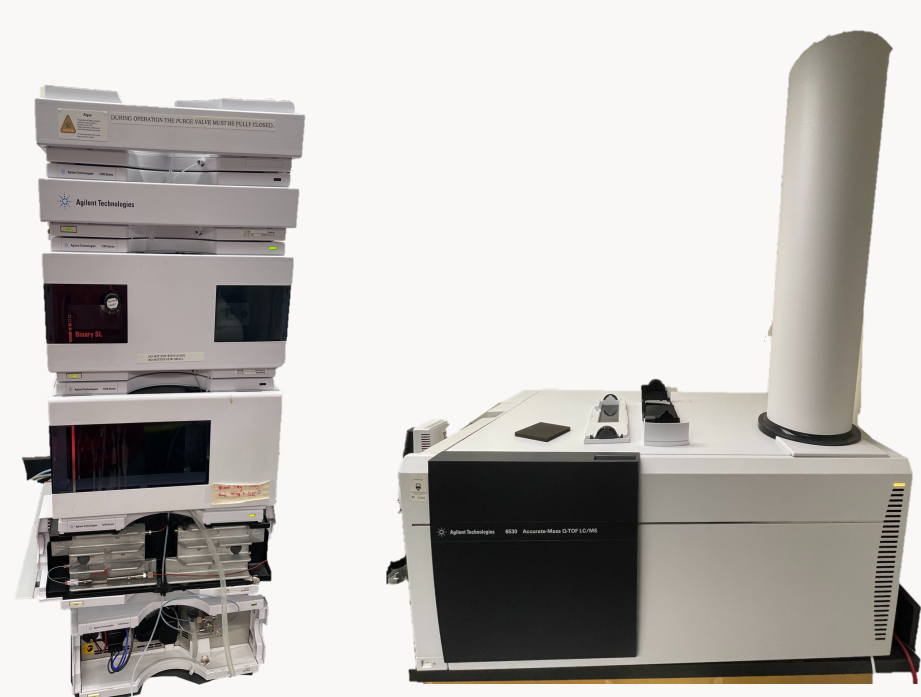


Figure 2. Agilent 1200 Series 6530 Accurate-Mass Q-TOF LC/MS.

Column:	Poroshell 120 EC-C18, 3 x 100 mm, 2.7 mm (Agilent)
Column Temperature:	30 °C
Flow rate:	0.3 mL/min
80% Mobile phase A:	0.1% formic acid in water
20% Mobile phase B:	0.1% formic acid in acetonitrile
Mode of Ionization:	ESI +
Mass Range:	100-500 m/z

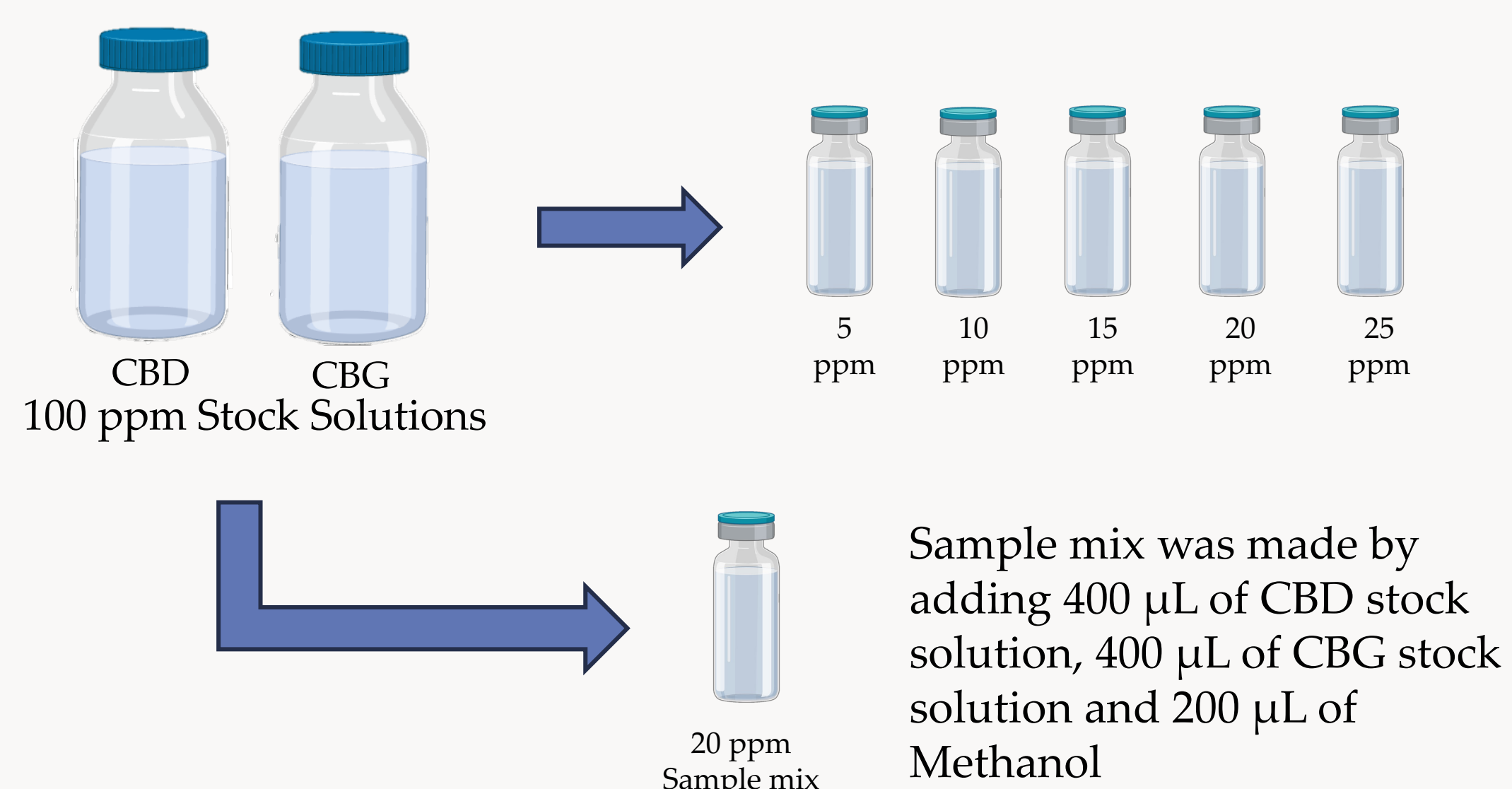
Table 1. Agilent LCMS-QTOF parameters.

References

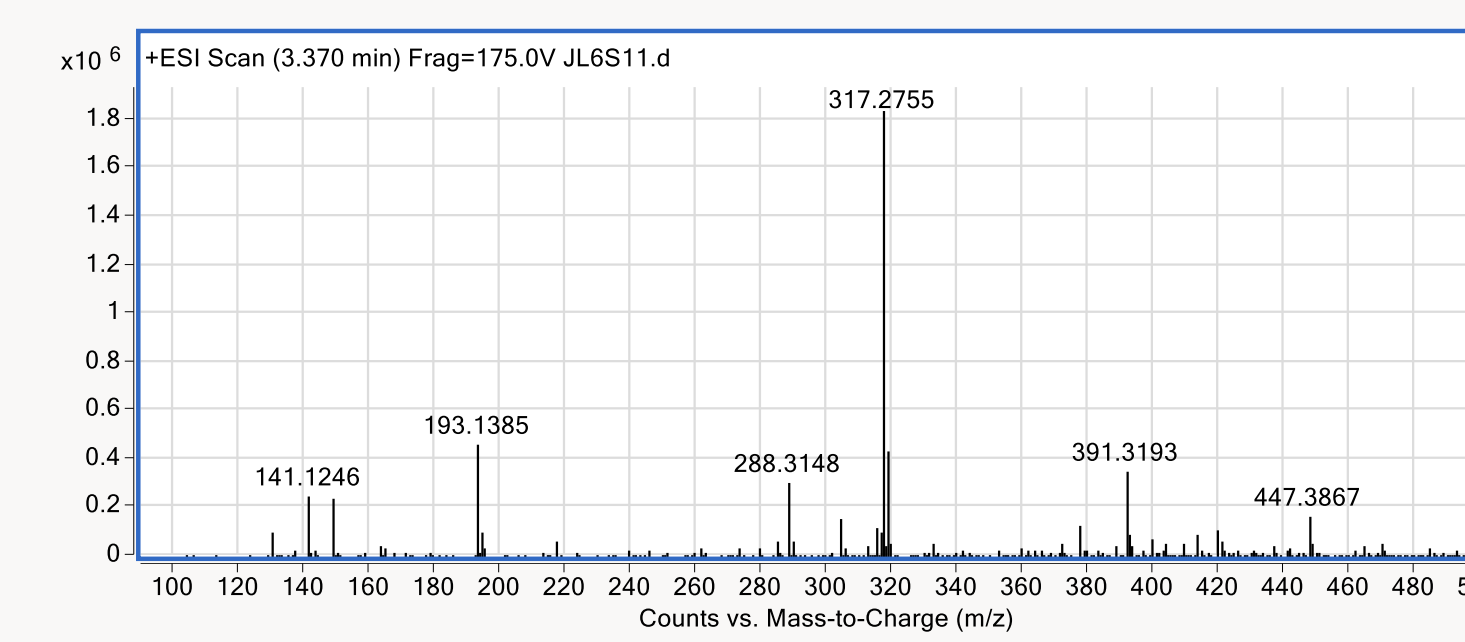
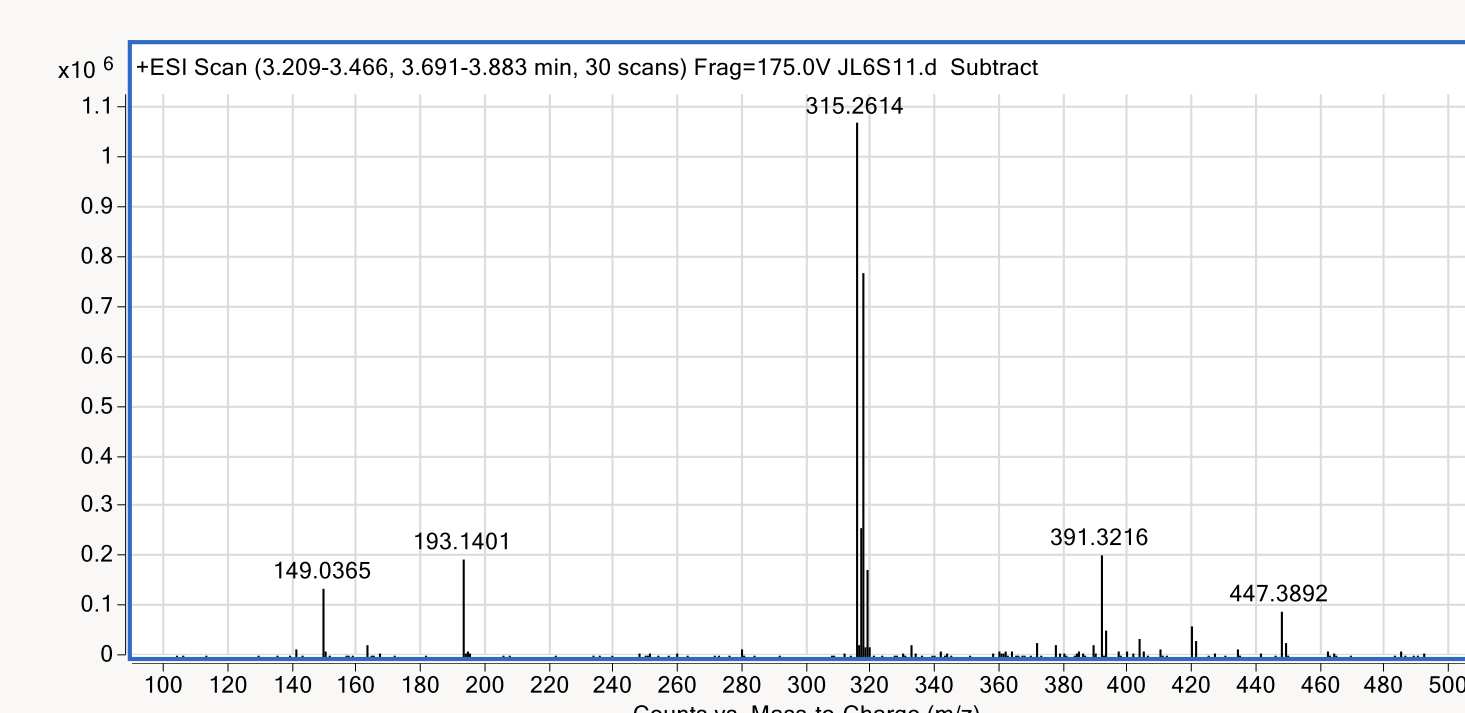
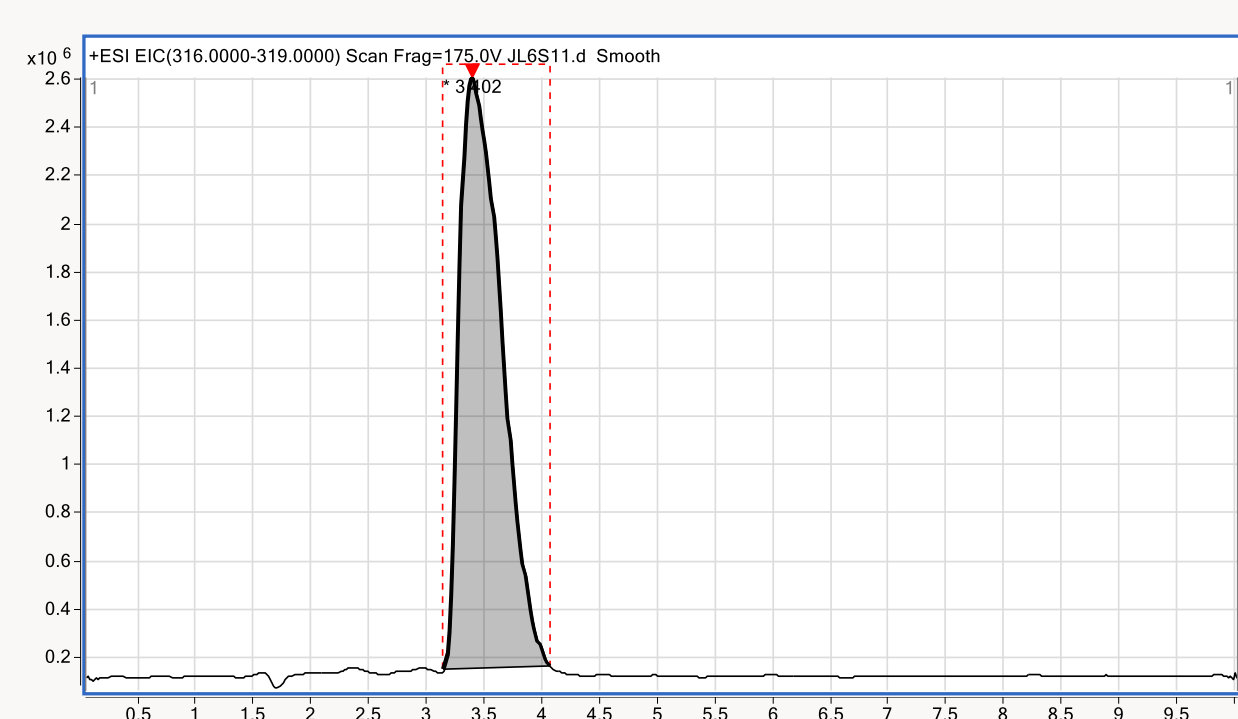
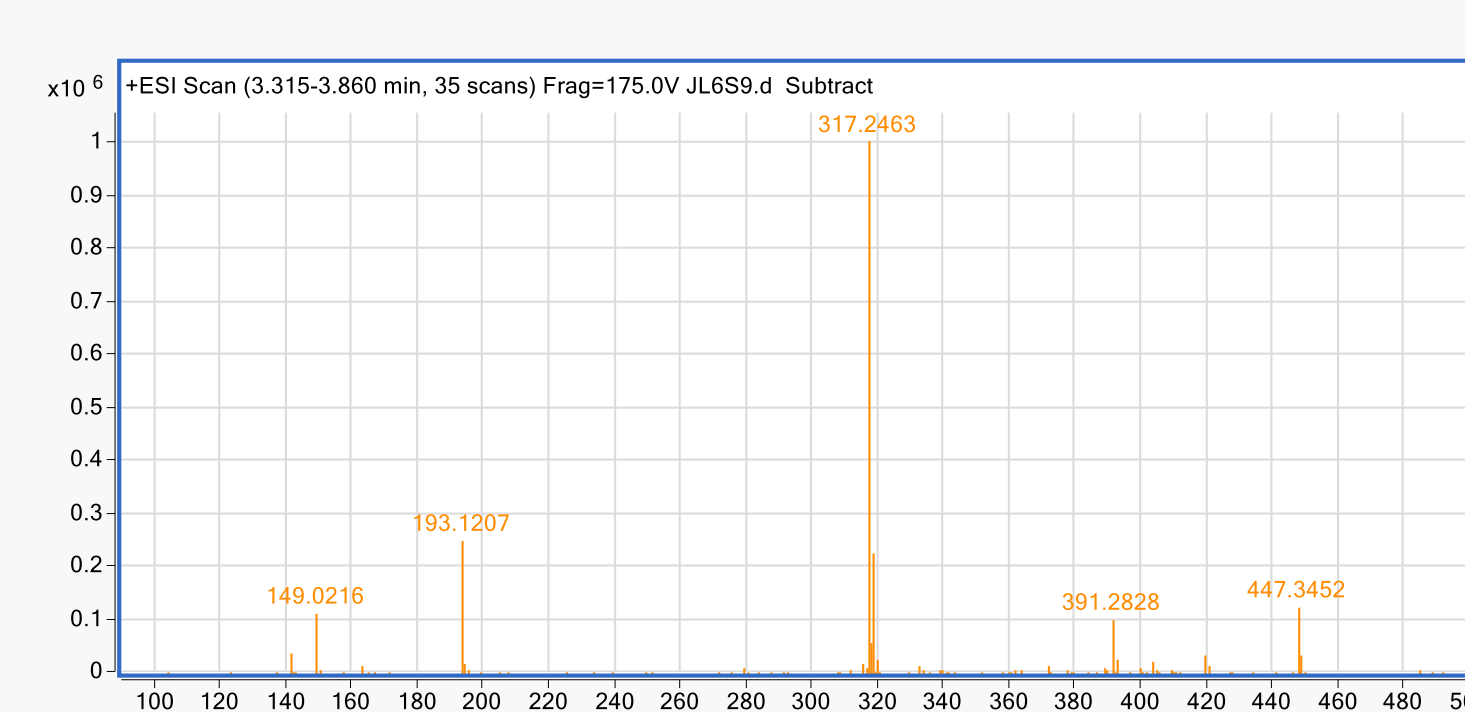
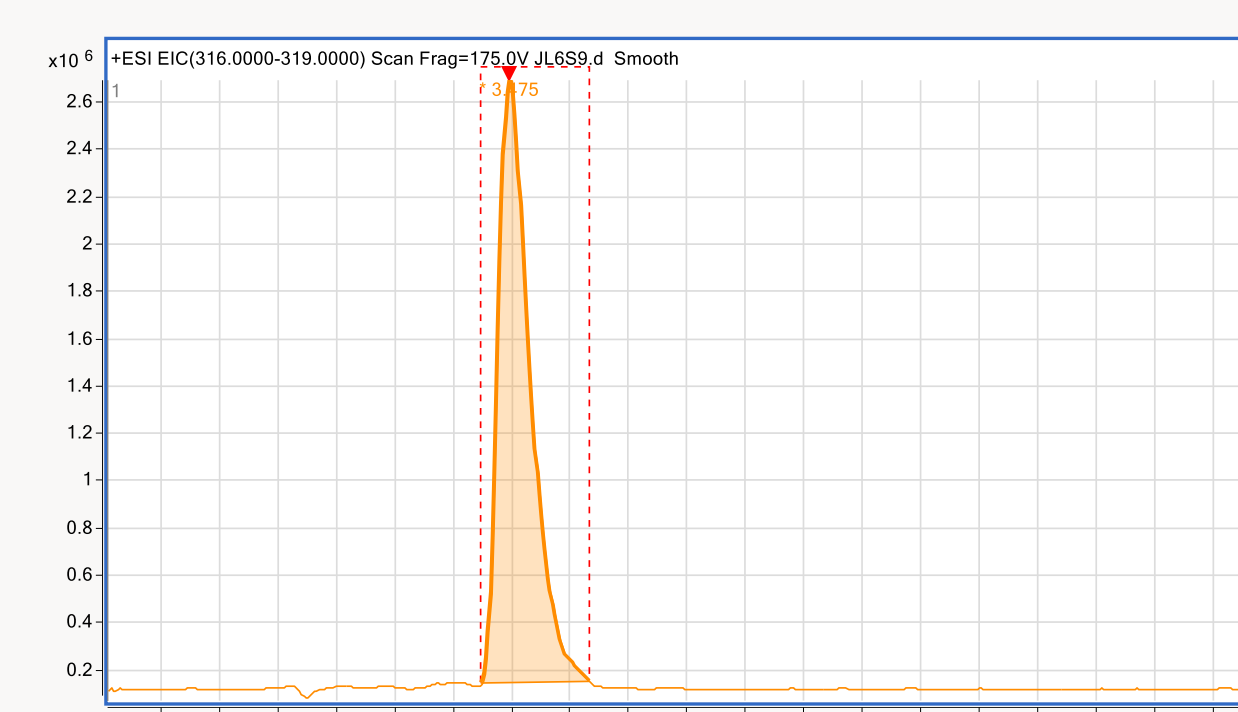
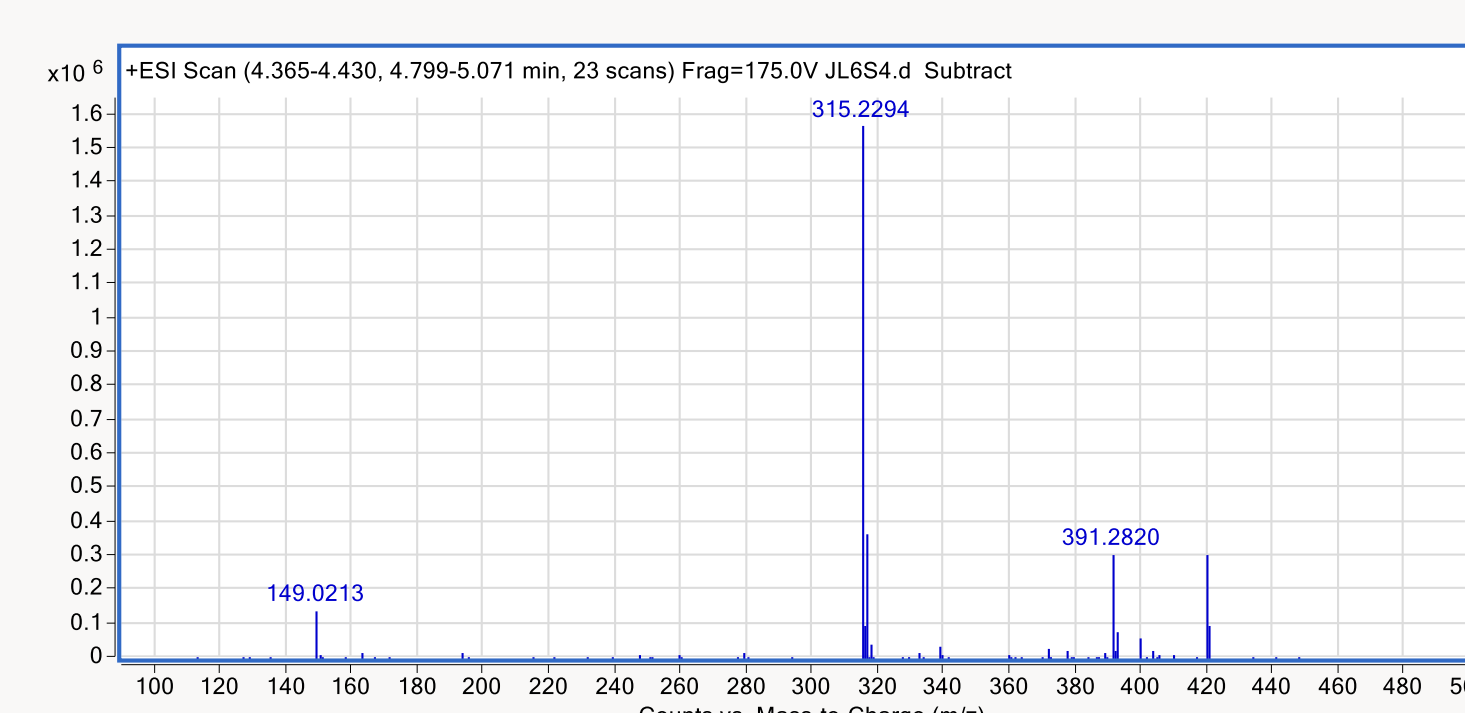
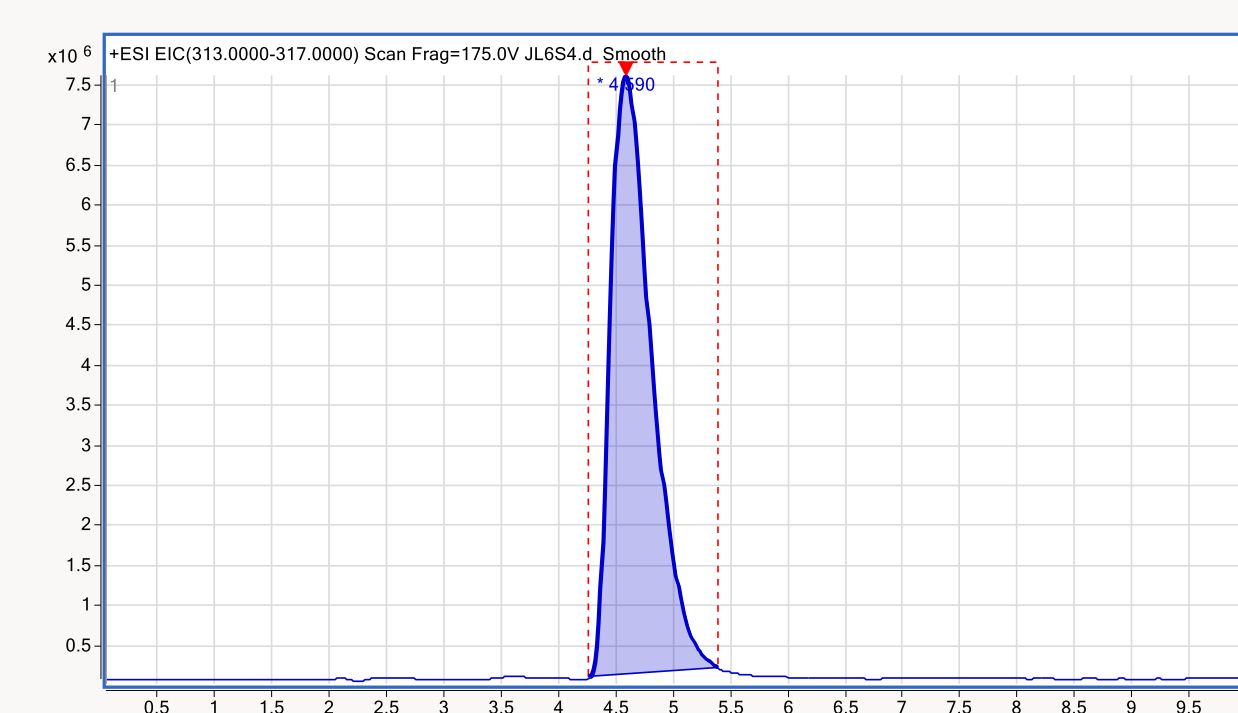
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Method

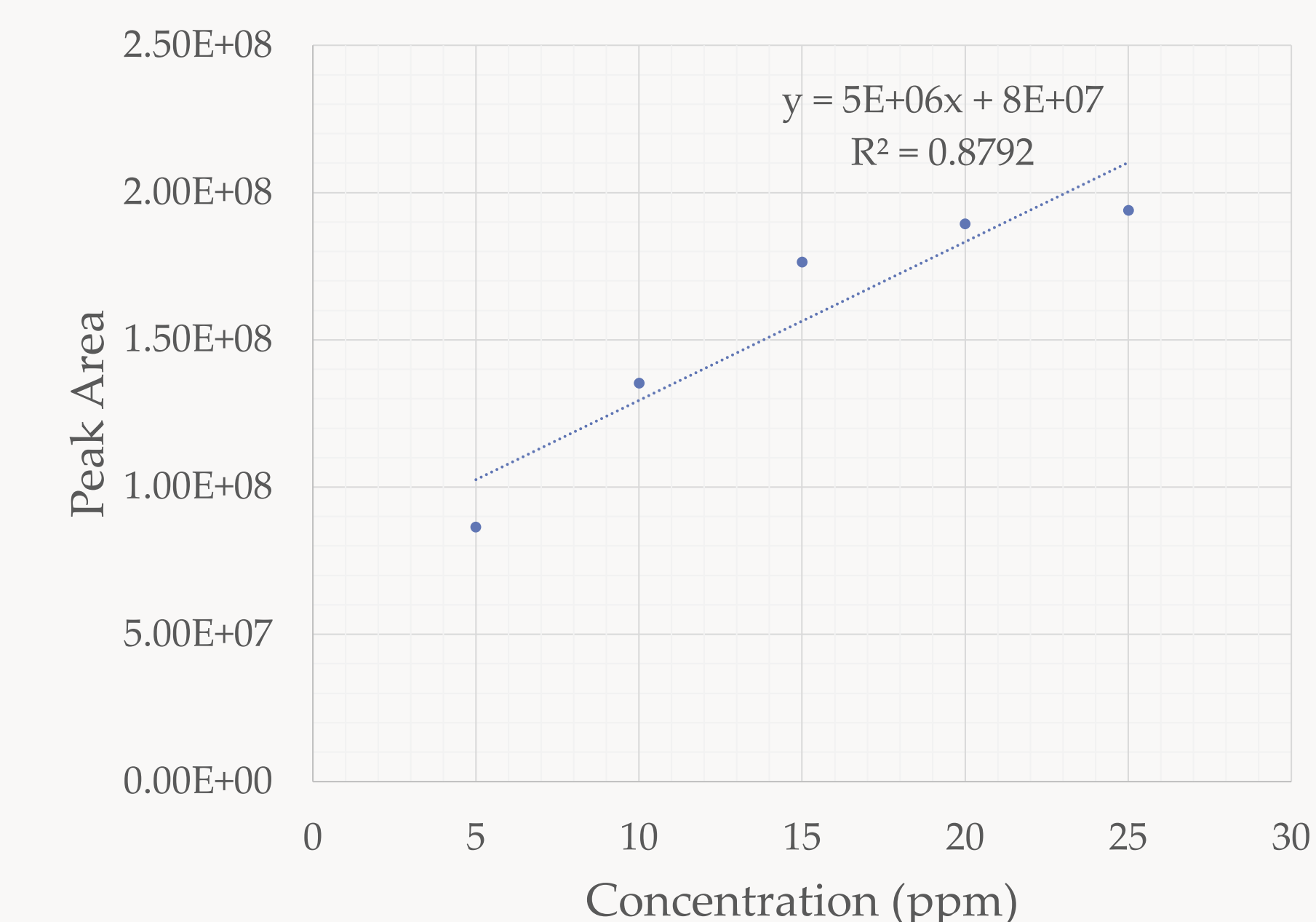
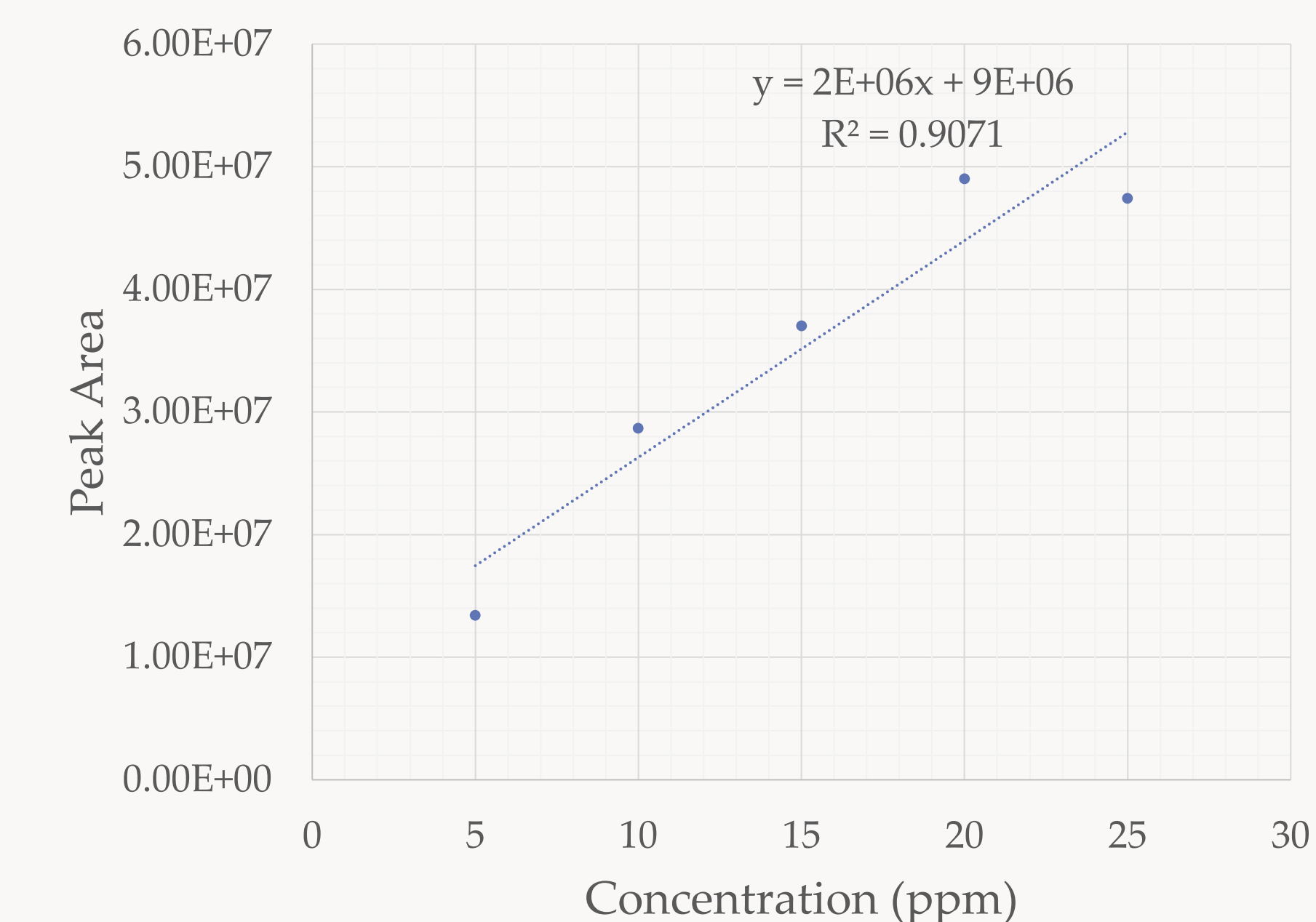
Experimental Procedure



Results



Results



Conclusion and Future Directions

- CBD and CBG standards ranging from 5 ppm to 25 ppm were able to be detected individually.
- CBD and CBG were able to be detected in a sample containing both compounds.
- The method was optimized to yield sharp peaks.

Future Directions

- Test the stability of CBG in different conditions.
- Test the kinetics of conversion of CBG to Δ^9 -Tetrahydrocannabinol (THC).
- Optimize the method for the separation of the CBD and CBG peaks.

Acknowledgments

I would like to thank Dr. Kingsley Donkor for his guidance and support.
I would also like to thank Carla Figueroa for her help with this project, Western Diversification Canada for the purchase of the LC-MS, and TRU Department of Chemistry for resources.