



# Analytical Testing of Cannabis

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# Analytical Testing of Cannabis

Why is it important to test Cannabis?

- Cannabinoids are bioactive
- Correct dosages for medicinal uses
- THC are not present in products

# Analytical Testing of Cannabis

Why is it important to analytically test Cannabis?

- Farmers growing Hemp fibers
- There are different laws for Marijuana and Hemp
- Isolate standards and develop methods of analysis

# Hemp vs. Marijuana

if THC > 0.3 wt% → Marijuana

Medicinal use:

THC > 0.3 wt%

CBD: THC < 0.3 wt%

CBG: THC < 0.3 wt%

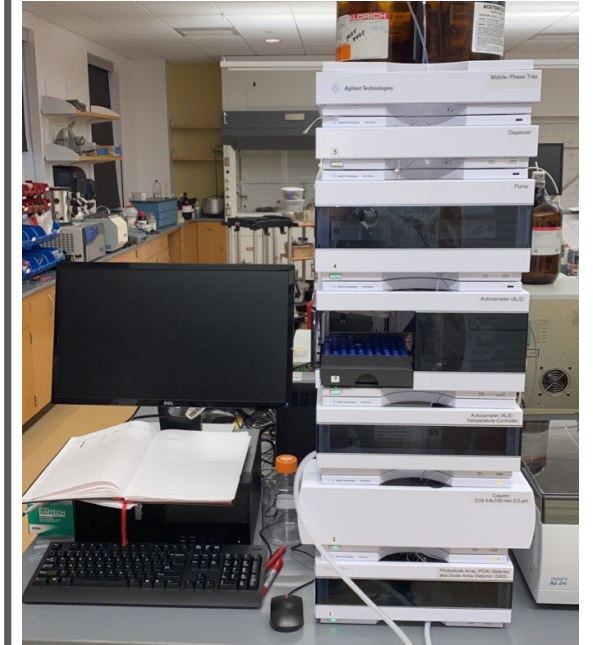
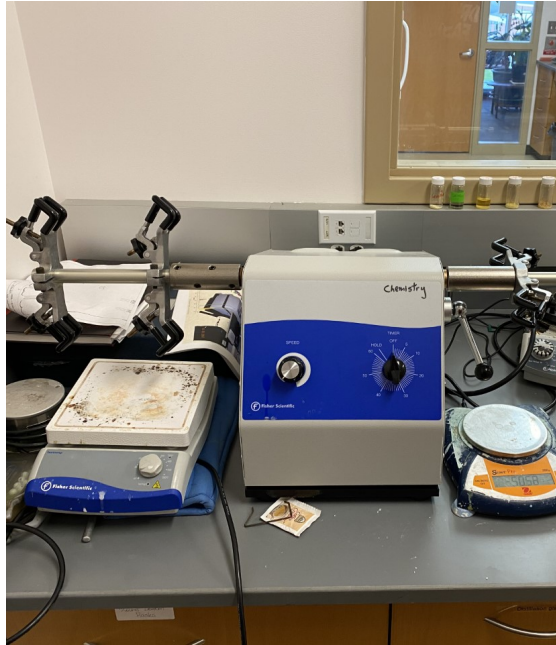
CBN: THC < 0.3 wt%

Plant material use:

Hemp

if THC < 0.3 wt% → Hemp

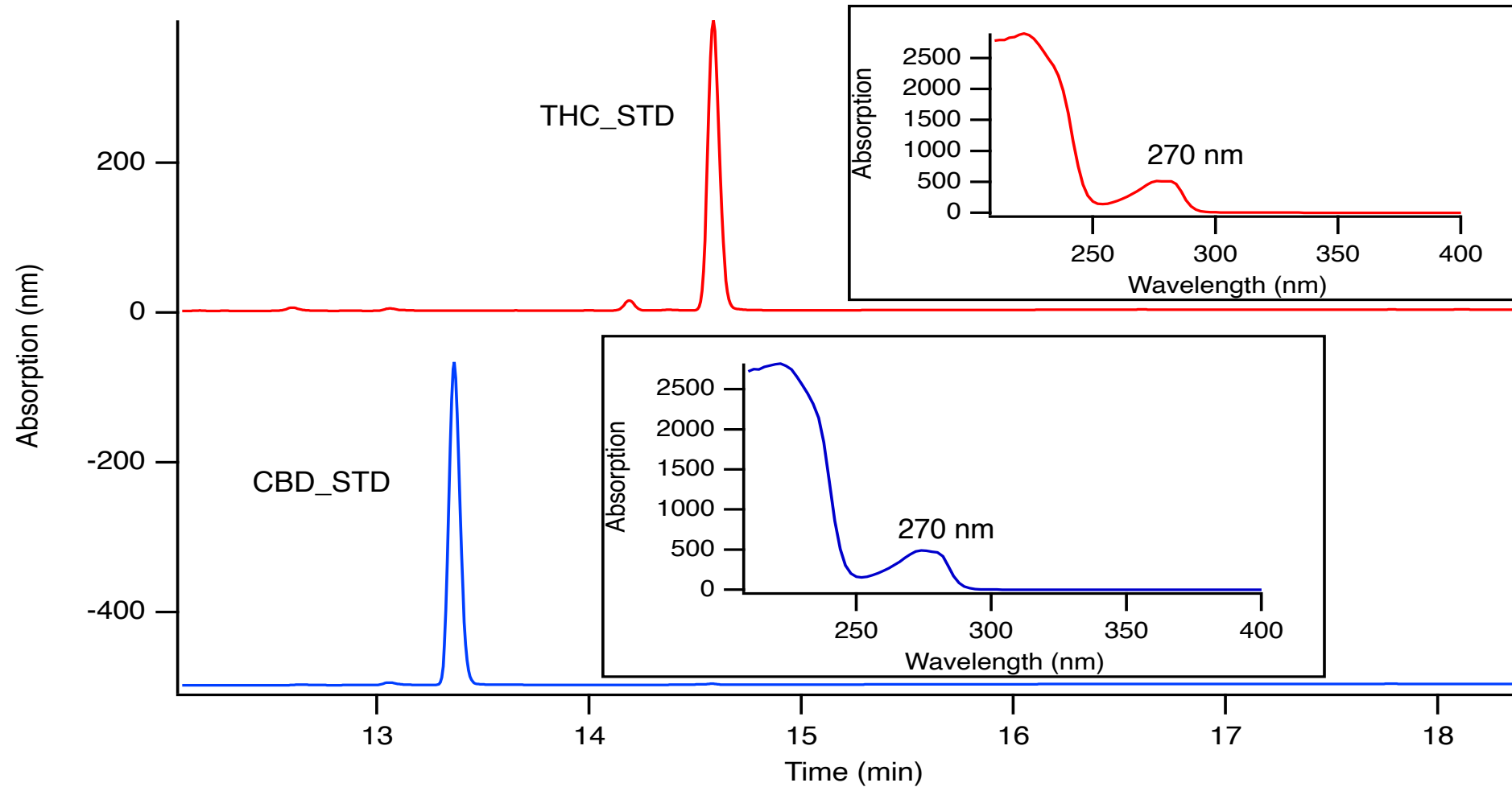




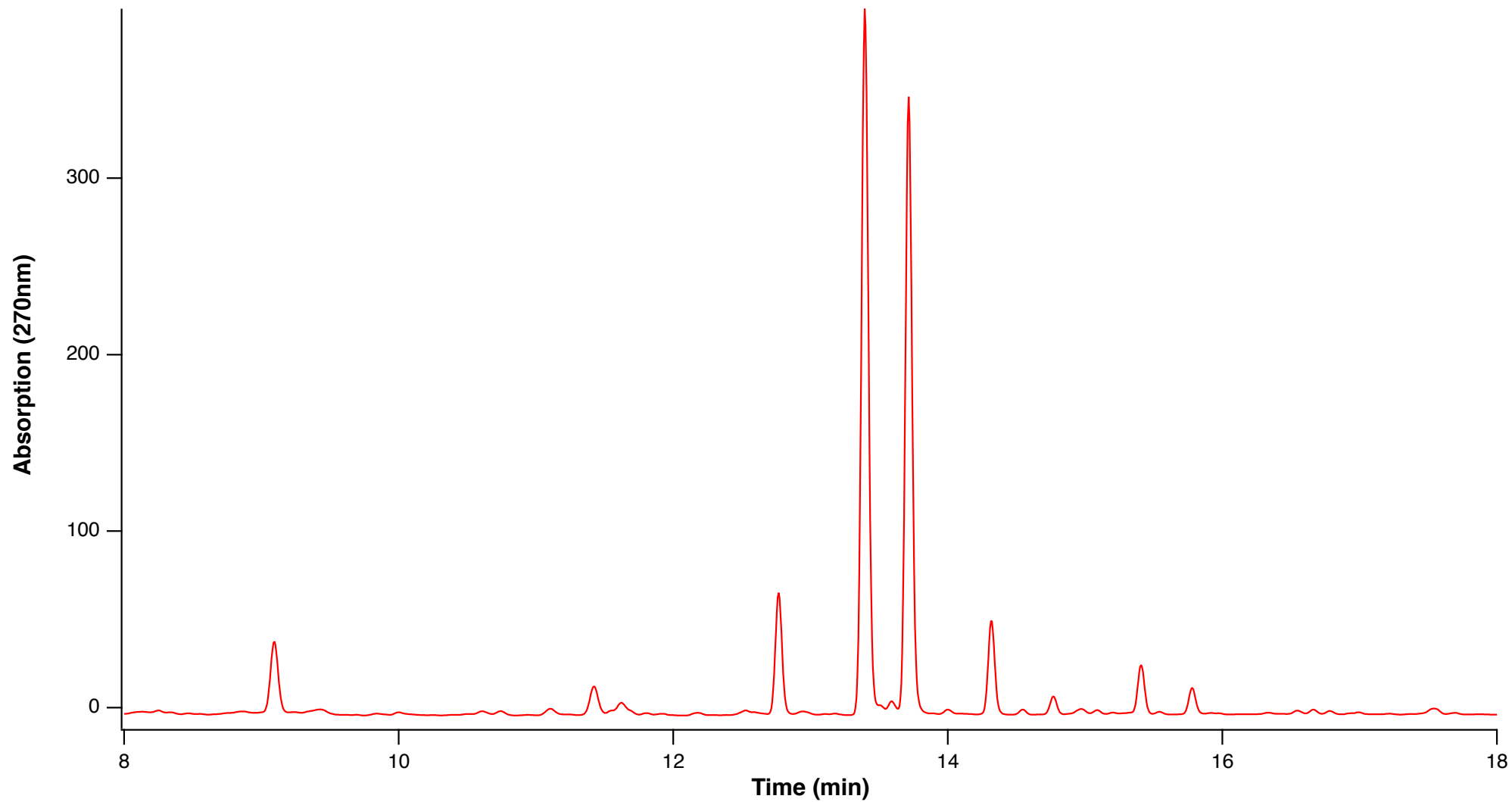
# Method

“Analysis of 17 Cannabinoids in Hemp and Cannabis.” Sigma, [www.sigmaaldrich.com/technical-documents/articles/analytical/food-beverage/analysis-of-cannabinoids.html?utm\\_campaign=AP\\_AA\\_MS\\_2020079018\\_50931\\_Cannabis-Potency-Workflow](http://www.sigmaaldrich.com/technical-documents/articles/analytical/food-beverage/analysis-of-cannabinoids.html?utm_campaign=AP_AA_MS_2020079018_50931_Cannabis-Potency-Workflow).

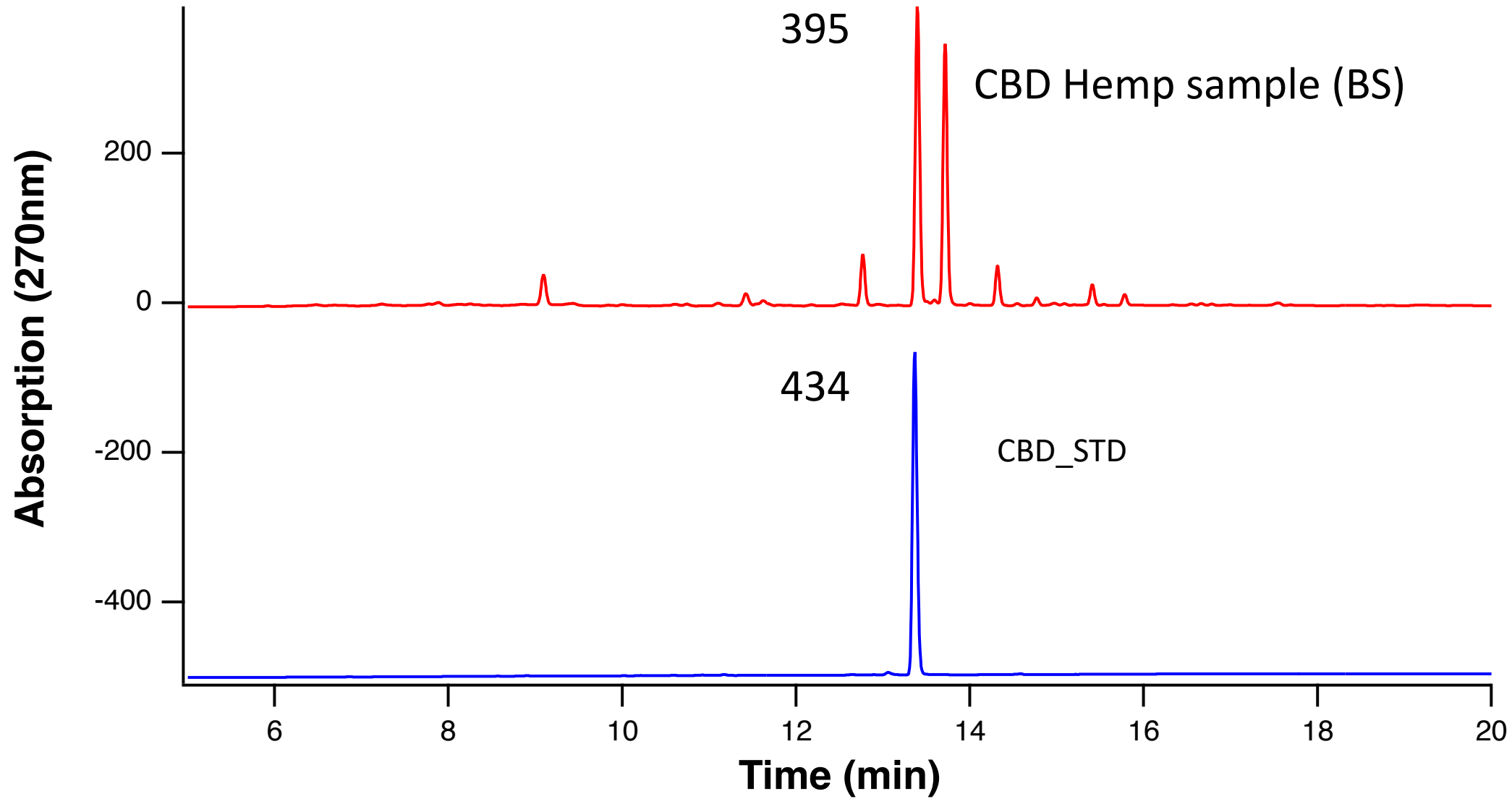
# High Performance Liquid Chromatography HPLC and Method Development



# CBD Hemp sample (BS) Galena IL



# Data





# Calculating Percent of CBD

$$\frac{434}{1 \text{ mg/ml}} = \frac{395}{x} \quad x = 0.91 \text{ mg/ml}$$

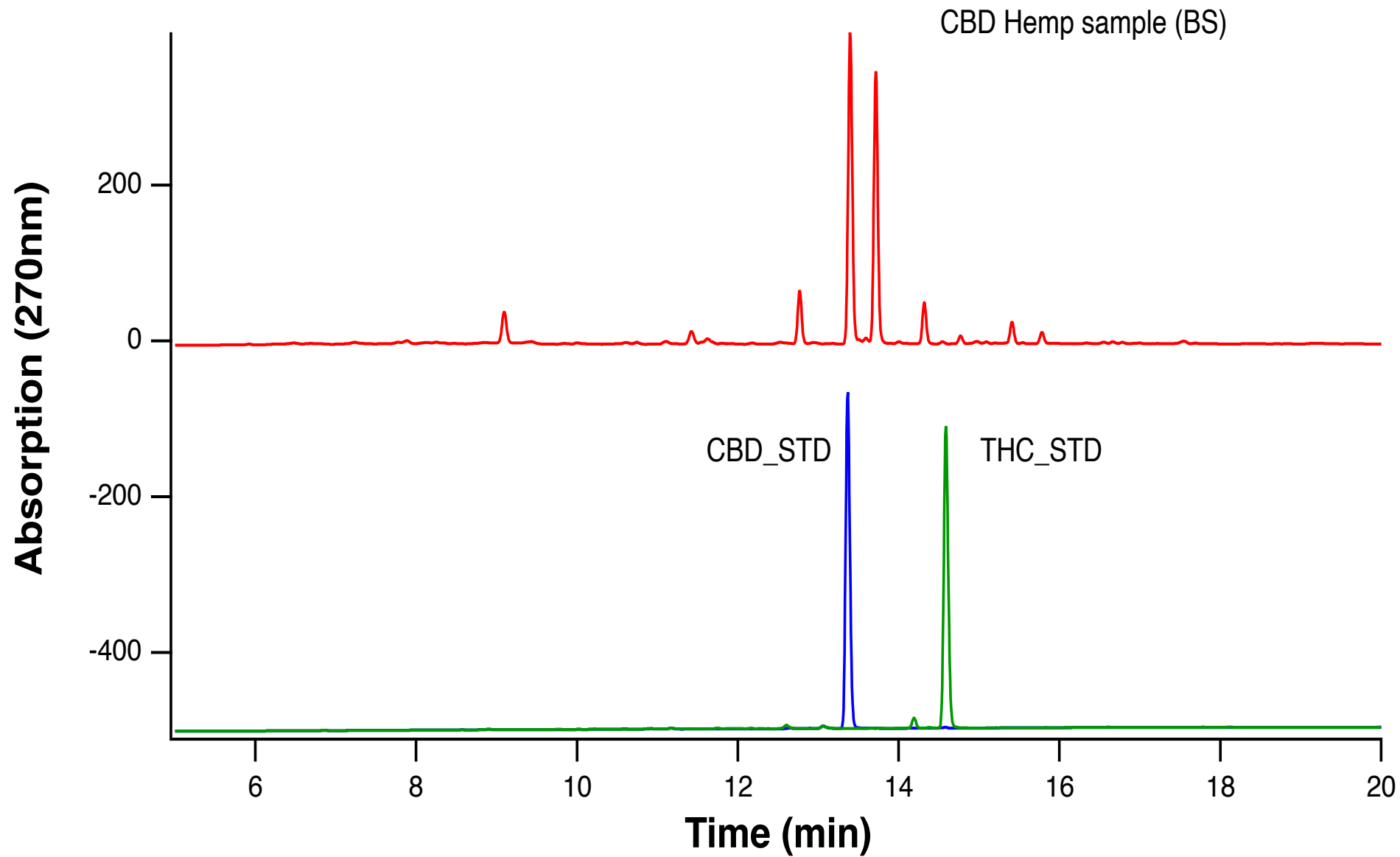
$$5 \text{ ml} \times \frac{0.91 \text{ mg}}{1 \text{ ml}} = 4.5 \text{ mg CBD}$$

Problem:

We found **4.5%** CBD in the Hemp sample from Galena IL

Sample label: 21% CBD in the Hemp sample

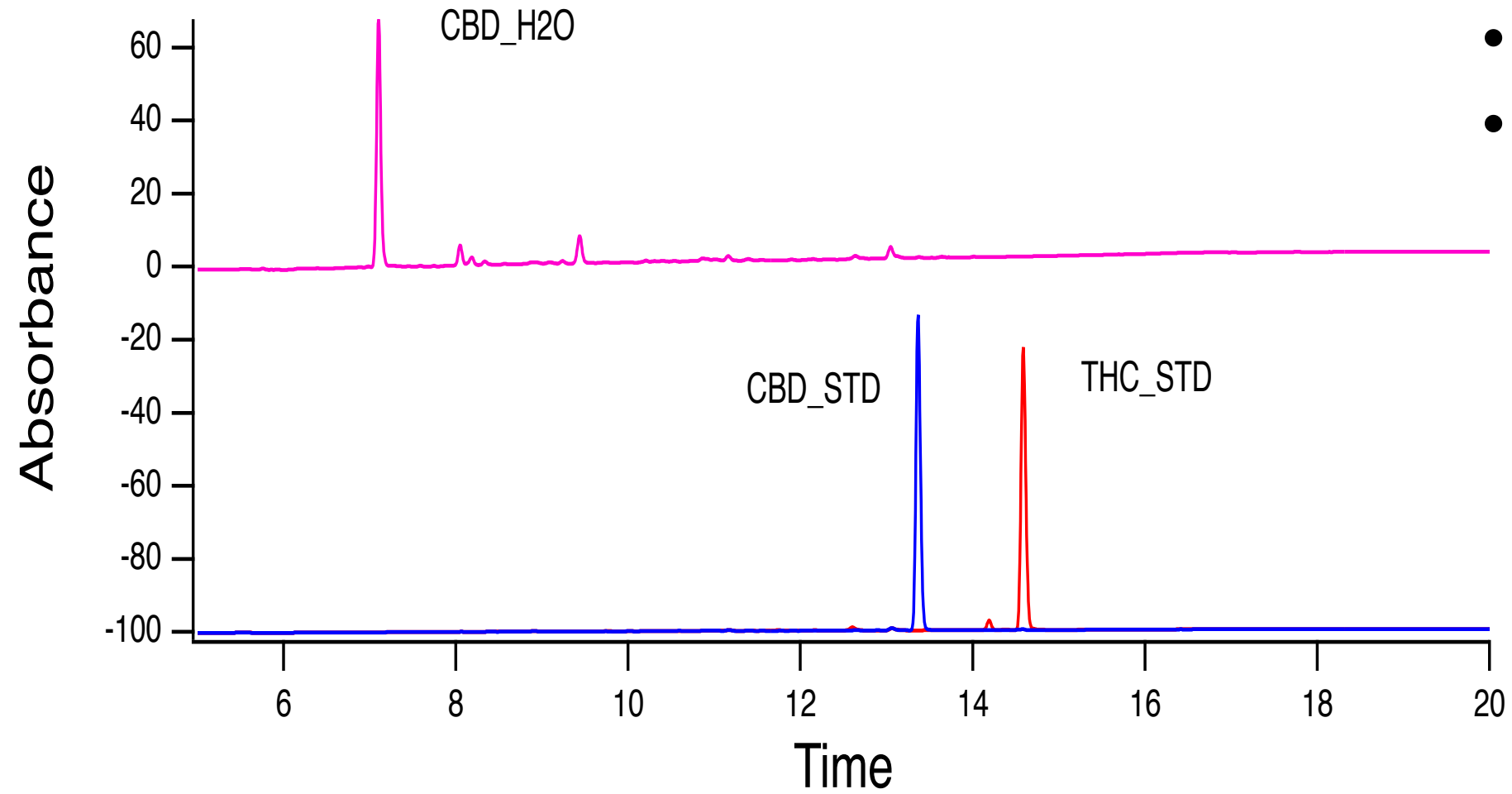
# Other Peaks





Sugar free. Gluten free.  
Alcohol free. Our sparkling  
water is crafted with  
naturally occurring  
ingredients which may help  
mediate stress, reduce pain,  
and assist you toward living  
a happier life.

# Data



# Claims

- No CBD
- No THC

# Processing Material / Improving Method

Liquid Nitrogen and Mortar

Methanol vs. Ethanol

More standards

Other improvements?

# Acknowledgements

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Questions?