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METHODS FOR QUANTIFICATION OF THE MAIN CANNABINOIDS IN CBD OIL

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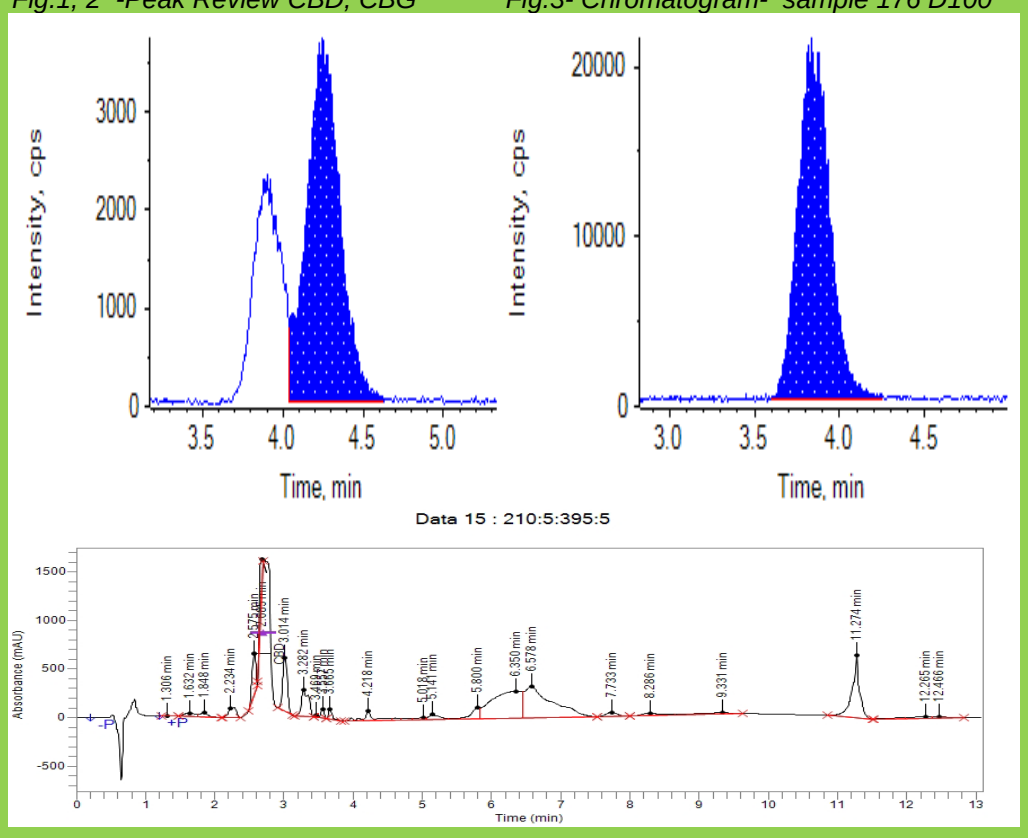
Introduction

The present paper describes a series of analytical methods used for the separation of cannabinoids necessary for the analysis of the oils with CBD from the market. Using chromatographic methods we can determine the original composition of cannabinoids in oils by direct analysis. From this reason, the qualitative and quantitative certification is necessary through a selective, simple and fast method.

Fig.1, 2 -Peak Review CBD, CBG

Fig.3- Chromatogram- sample 176 D100



Conclusion

The analytical methods easily characterize and quantify CBD in the oils available from the commercial sources for offering a robust instrument for the determination of the potency, safety and quality, with usages both in human medicine and in the veterinary one.

Results

UHPLC-PDA

Chromatographic separation was achievied using a PerkinElmer Brownlee Analytical C18 column (50mm×4,6mm i.d., 5µm), using and gradient elution with 0,1% formic acid in water as mobile mobile phase A and 0.1% formic acid in acetonitrile as mobile phase B. The flow rate was 0,4mL/min and the injection volume was 5µL. For quantification, the detection wavelength was set at 210 nm.

LC/MS

The calibration curve was drawn in the range 10 - 100 ng / mL. The limit of detection at the level of 3.12 ng / mL was validated.

The method was developed on a UHPLC column (1.9 µm particles) - Perkin Elmer Brownlee Analytical DB AQ C18 1.9 µm 100x2.1 mm.

It is widely reported in the literature that CBD coelutes with a related cannabinoid -CBG. For this reason the analytical UHPLC-PDA result was confirmed with a complementary technique –MS. The CBD content of the commercial samples analyzed in this study is not clearly specified by the manufacturer. Analysis of the three samples of hemp oils revealed the actual CBD concentration in the samples, highlighting the need for this kind of analytical method.

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