



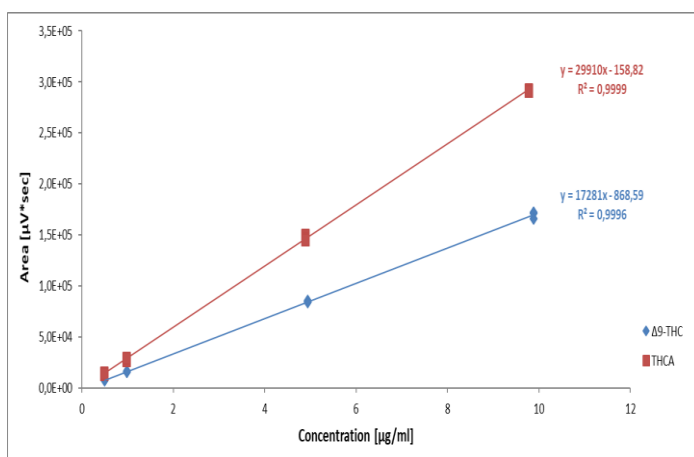
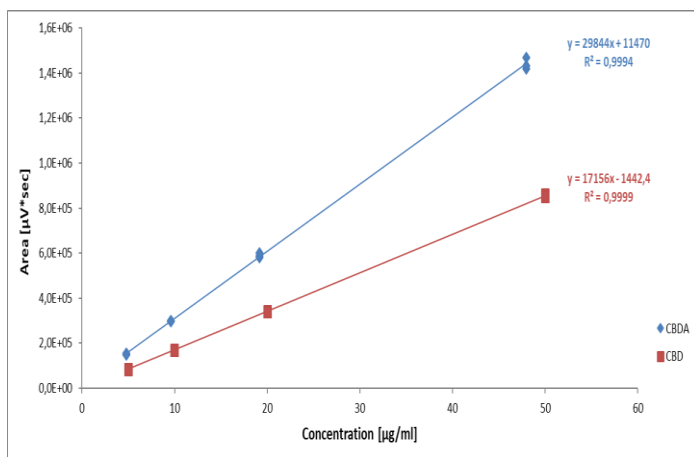
ŁUKASIEWICZ RESEARCH NETWORK
NEW CHEMICAL SYNTHESSES INSTITUTE
RESEARCH LABORATORY

24-110 PUŁAWY, Al. Tysiąclecia Państwa Polskiego 13A
tel. +48 81 4731400, +48 81 4731402; fax +48 81 4731410; ins@ins.pulawy.pl

QUALITY CERTIFICATE 192/2019

Type of sample: Liquid CBD
Sample name /Batch: 27,75 mg/ml CBD PG/VG B:01/10/2019 (A.R.)
CAS13956-29-1
Client's name: Limucan GmbH
Kleines Feld 17
49448 Marl, Deutschland
No sample identification: 53/2019/18
Date of start testing: 03.10.2019
Date of end testing: 09.10.2019
Operator: E. Józwik

Calibration:



Test results¹⁾:

CBDV (cannabidivarine)	< L.O.D.
CBDA (cannabidiolic acid)	< L.O.D.
CBG (cannabigerol)	< L.O.D.
CBD (cannabidiol)	2,328 ± 0,098 % (w/w)
CBN (cannabinol)	< L.O.D.
Δ-9-THC (delta-9-tetrahydrocannabinol)	< L.O.D.
Δ-8-THC (delta-8-tetrahydrocannabinol)	< L.O.D.
CBC (cannabichromene)	< L.O.D.
THCA (delta-9-tetrahydrocannabinolic acid)	< L.O.D.

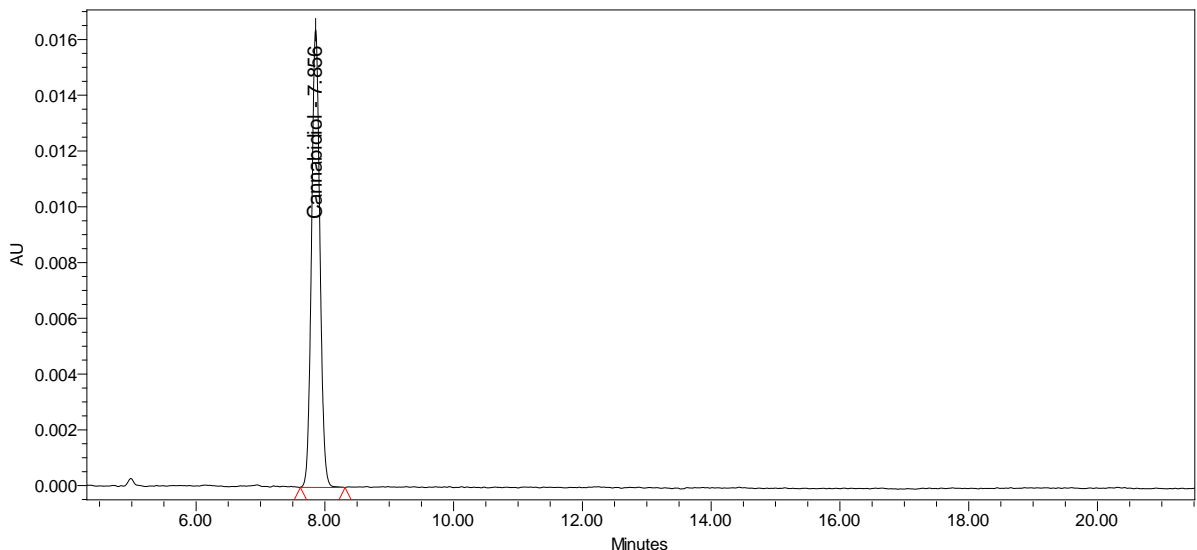
$\Sigma\text{THC} = \text{THC} + (0,8772 \times \text{THCA})$ < L.O.D.

L.O.Q (limit of quantification) = 0,150% (w/w)

L.O.D (limit of detection) = 0,063% (w/w)

¹⁾ the given extended uncertainty (U) is based on standard uncertainty multiplied by extension factor k=2 providing confidence level of 95%. Sampling uncertainty was not taken into account in calculations.

According to the High Performance Liquid Chromatography (HPLC) method with a Photodiode Array Detector (PAD)



It declares that the above results relate only to the sample identification number 53/2019/18, and that without the written consent of the Head of the Laboratory of Analytical certificate may not be reproduced otherwise than in its entirety.

Date of issue: 09.10.2019

Quality manager: Mariusz Chmiel

END