Endoca Certificate of Analysis:
Organic Hemp CO_2 Extract
Cannabinoid Profile

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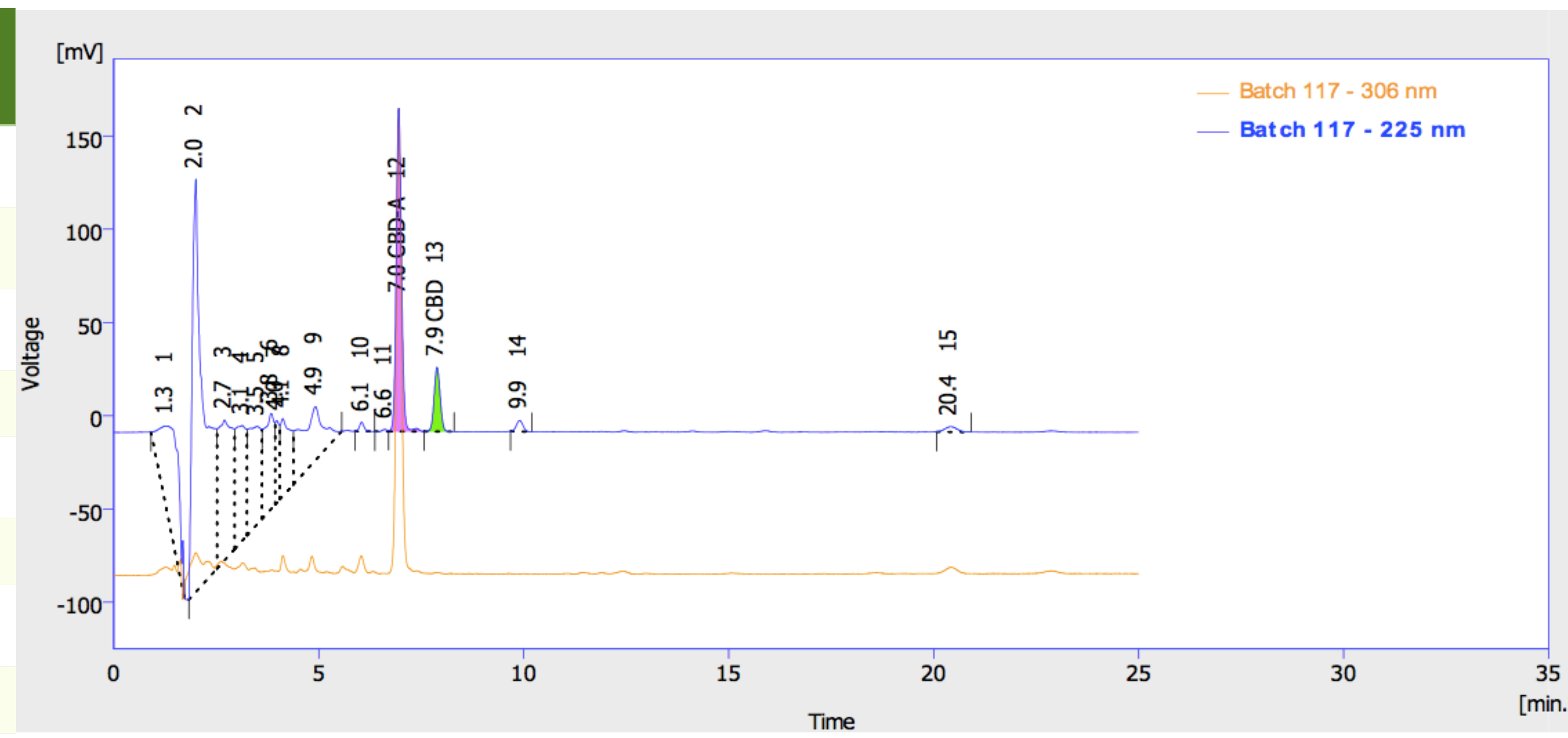
www.endoca.com
ISO 14001: 2004 certified; ISO 9001: 2008 certified
HACCP certified; GMP certified

Responsible Supervisor:	Martin Vangkilde
Responsible Technician:	Paul K.
Sample	Batch# 117
Date samples received:	17-April- 2015
Date analysis began:	17-April- 2015
Date sample report produced:	17-April- 2015
ID Number when available:	
Sample Mass	20 uL

Endoca 2,60% Total CBD: Cannabinoid Profile

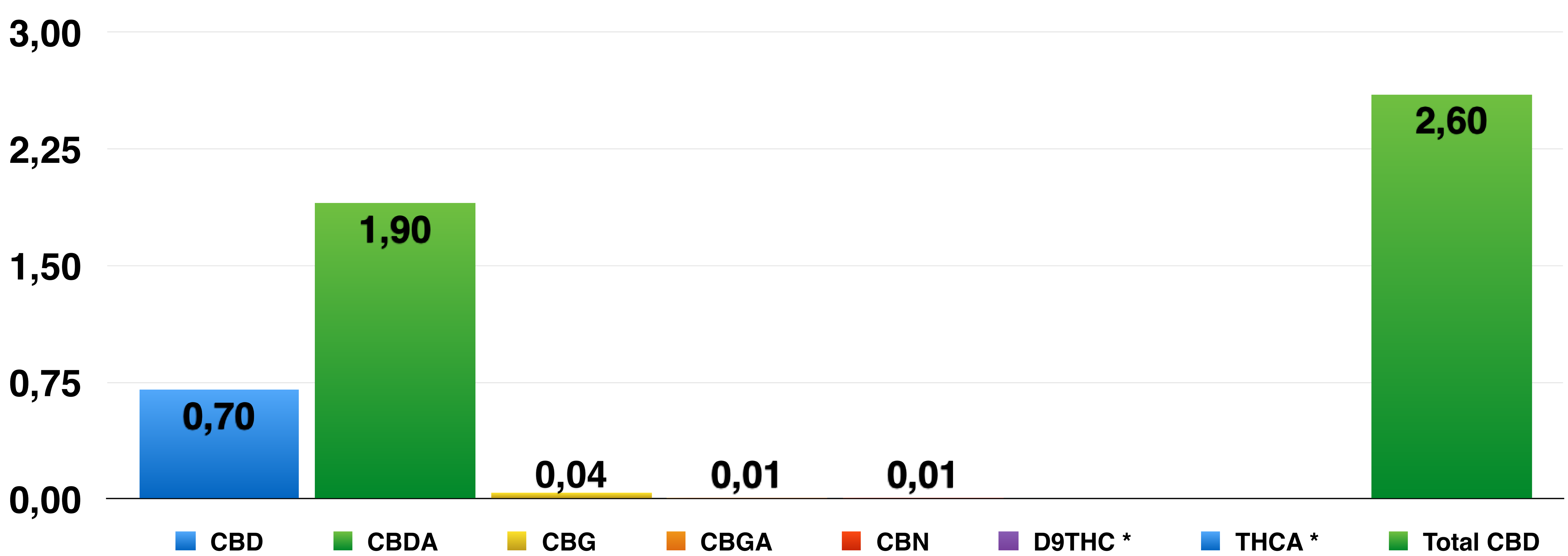
Component	Mass (%)	Amount (mg/g)	Limit
CBD	0,70	7,00	N/A
CBDA	1,90	19,00	N/A
CBG	0,04	0,40	N/A
CBGA	0,01	0,10	N/A
CBN	0,01	0,10	N/A
D9THC *	<0,20	<2,00	N/A
THCA *	<0,20	<2,00	N/A
Total CBD	2,60	26,00	N/A

HPLC Chromatograph Raw Data



* D9THC and THCA under detectable thresholds *

Cannabinoids as Percent of Total Mass



All tests carried are done so under strict certified laboratory protocols, guidelines and supervision.
See appendix for more information or contact us at www.endoca.com

Endoca Certificate of Analysis:
Organic Hemp CO_2 Extract
Terpenoid Profile

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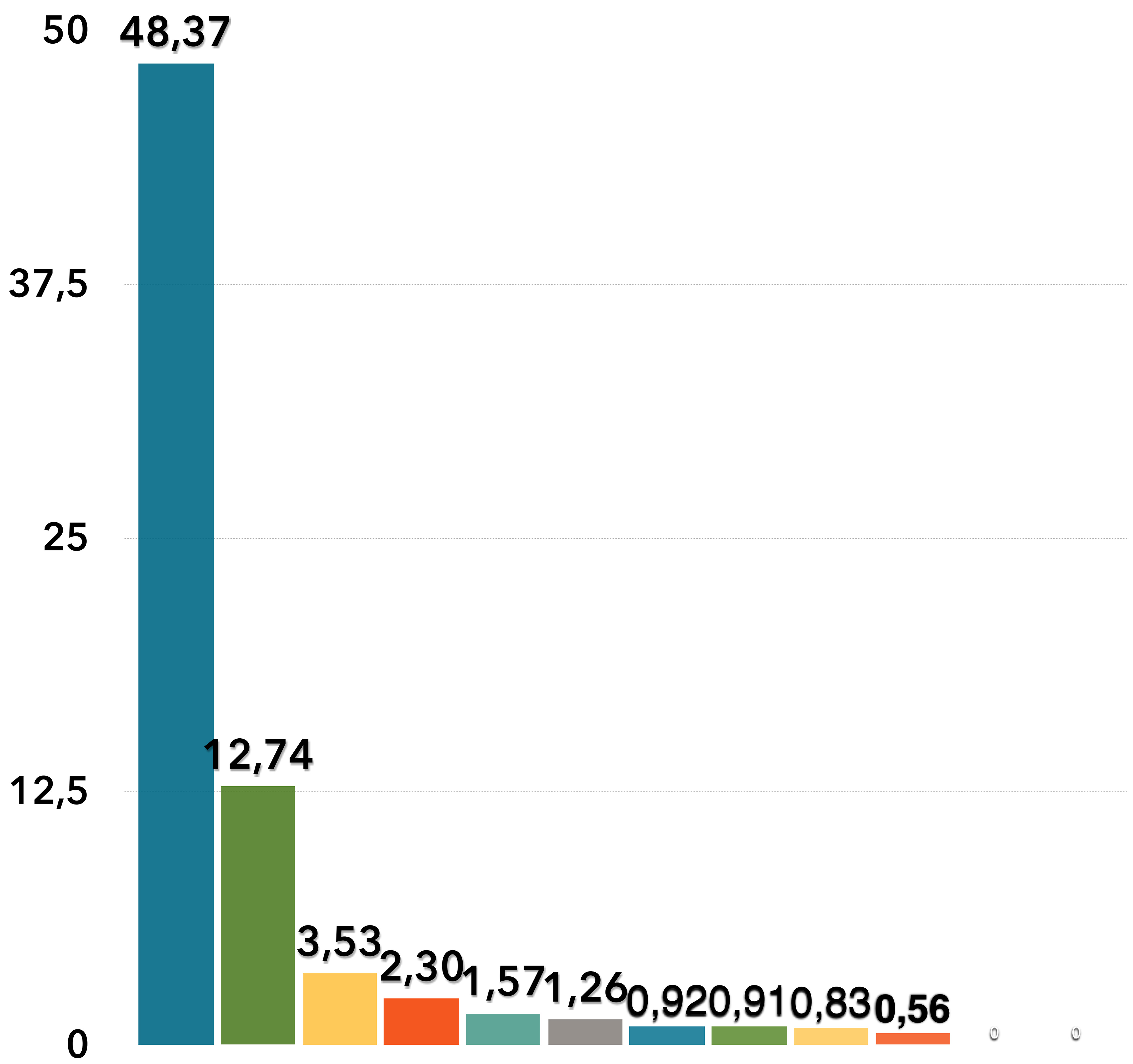
Endoca 2,60% Total CBD:
Terpenoid Profile:

Component	Amount %
β-Caryophyllene	48,37
α-Humulene	12,74
Caryophyllene oxide	3,53
Myrcene	2,30
α-Pinene	1,57
Terpinolene	1,26
Humulene epoxide II	0,92
Other	0,91
β-Pinene	0,83
E-β-Ocimene	0,56
Sabinene	0,00
Linalool	0,00

EO from CO2 extract, 60 MPa,
Terpenoid yield 0,35% (W/V)

Terpenoid Distribution



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Endoca Certificate of Analysis:
Organic Hemp CO_2 Extract
Microbial Profile

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Sample	Batch# 117
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Date sample report produced:	17-April- 2015
ID Number when available:	
Sample Mass	20 uL

Endoca 2,60% Total CBD: Microbial Profile:

Component	Mass (%)	Amount (mg/g)	Limit
Listeria Monocytogenes	0,00	ND	ND
E-Coli	0,00	ND	ND
Fungi	< 0.01	ND	ND
Salmonella	0,00	ND	ND
Molds	0,00	ND	ND

All Mycotoxins at Non Detectable (ND) levels

Conclusions:

All microbial residues including Listeria, Monocytogenes, E-Coli, Fungi, Salmonella and Molds are all below detectable thresholds

Endoca Certificate of Analysis:
Organic Hemp CO_2 Extract
Heavy Metals Profile

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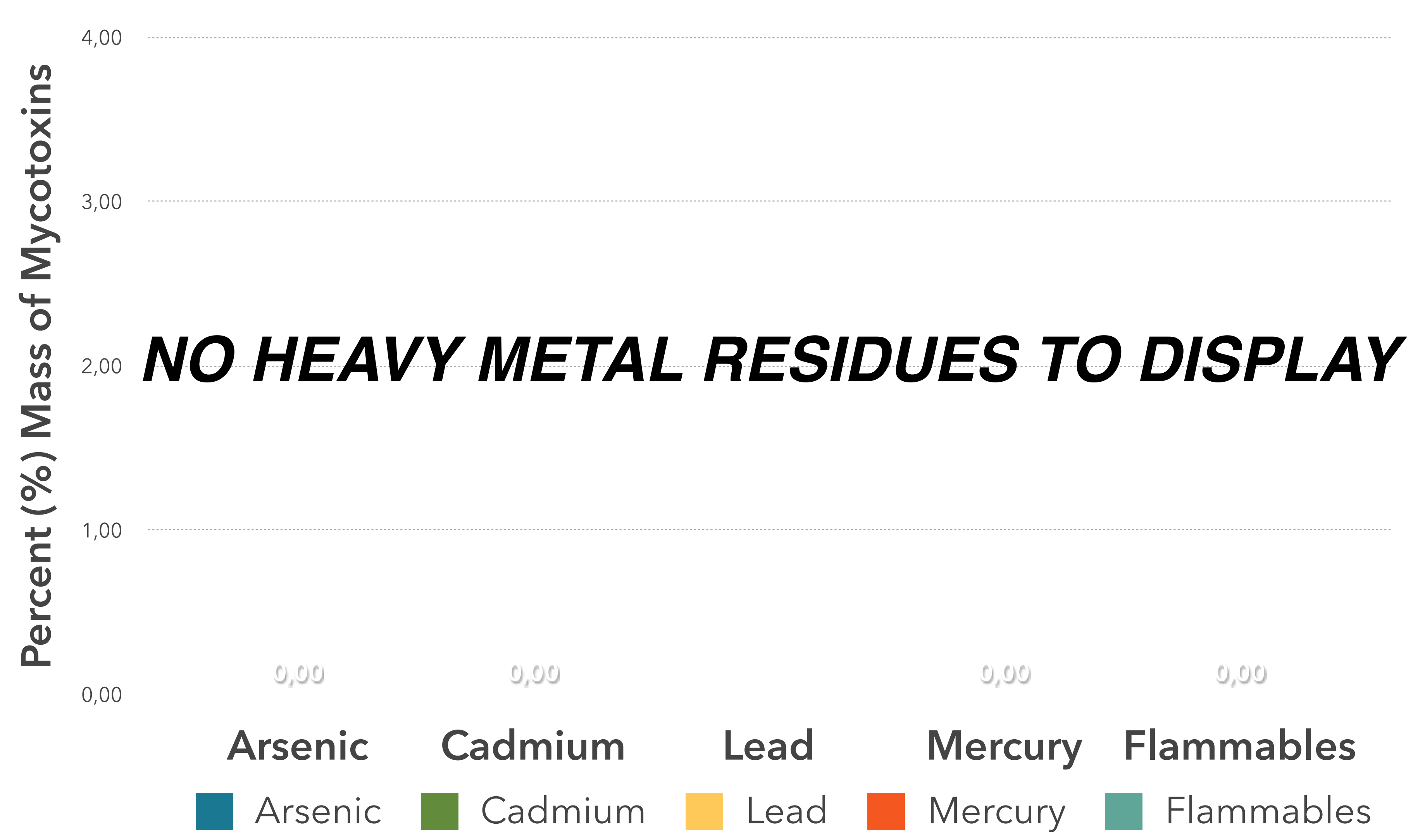
Sample	Batch# 117
Date samples received:	17-April- 2015
Date analysis began:	17-April- 2015
Date sample report produced:	17-April- 2015
ID Number when available:	
Sample Mass	20 uL

Endoca 2,60% Total CBD: Heavy Metals Profile:

Component	Mass (%)	Amount (mg/g)	Limit
Arsenic	0,00	ND	ND
Cadmium	0,00	ND	ND
Lead	< 0.01	ND	ND
Mercury	0,00	ND	ND
Flammables	0,00	ND	ND

All Heavy Metals at Non Detectable (ND) levels



Conclusions:
No heavy metal residues detected.
No flammable residues detected.
No chemical residues detected.

All tests carried are done so under strict certified laboratory protocols, guidelines and supervision. See appendix for more information or contact us at www.endoca.com

Endoca Certificate of Analysis:
Organic Hemp CO_2 Extract
Appendix & Pesticide Profile

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Sample Mass	20 uL

Pesticide Analysis: Our tests looked for residue of nearly 300 known pesticides finding no evidence of any over detectable limits.

Endoca Labs tests our products thoroughly. Nearly 300 of the below pesticides concentrations were measured and we are proud to say that all tests measured below our detectable limits. Most tests have a threshold of 0.01 mg/k, while only a handful of tests have a threshold value of <0.05 mg/kg. Not a single test of Endoca products went over detectable threshold limits.

PESTICIDES MEASURED

Acrinathrin Azoxystrobin Biphenhin Bitertanol Biphenyl Bromopropylate Bromuconazole Bupirimate Cadusafos Captafol Captan Chlorphenson Chlorfenapyr Chlorfenvinphos Chlorothalonil Chlorprophame 3,5-Dichloraniline Chlorpyriphos Chlorpyrifos-methyl Chlorthal-dimethyl Cyfluthrin Cypermethrin Cyproconazole Cyprodinil Clomazone o,p-DDE P,P-DDE o,p-DDD P,P-DDD o,p-DDT p,p-DDT Deltamethri Diazinon Diclofop-methyl Dieldrin Dichlobenil Dichlofluanid Dichlorvos Dicloran Dicofol Dicrotophos Diethofencarb Diflubenzuron Dimetachlor Diniconazole Dodemorph Diphenylamine Alpha-Endosulfan Beta-Endosulfan Endosulfan-sulphate Ethion Etofumesate Ethoprophos Ehtoxyquin Etoxazole Etridiazole Etrimphos Famoxadone Fenarimol Fenazaquin Fenchlorphos Fenhexamid Fenihothion Fenpropidin Fenpropimorph Fenvalerate Formothion Fipronil Fipronil-sulfone Fludioxonil Flusilazole Flutriafol Folpet Fuberidazole Furathiocarb Hexaconazole HCB Alpha-HCH Beta-HCH Delta-HCH Heptachlor Heptachlor-epoxidceis Heptachlor-epoxidtreans Iprodione Iprovalicarb Lambda- cyhalothrin Lindane Mecarbam Metalaxv Metazachlor Methidathion Metribuzin Mevinphos Myclobutanil Nuarimol Orthophenylphenol Oxadixyl Paclobutrazol Parathion Parathion-methyl Paraoxon-methyl Paraoxon-ethyl Penconazole Pendimethaline Permethrin Phenthoate Phorate Procymidone Profenofos Propiconazole Propyzamide Pyrazophos Pyrethrins Pyridaben Pyrimethanil Pyriproxyfen Quinoxifen Quitozene Pentachloraniline Phosphamidon Pyrifenox Prometryn Propanil Propoxur Proquinazid Prothiofos Simazine Spiroxamine T au-fluvalinate T ebuconazole T ebufenpyrad T ecnazene T efluthrin T erbuthylazine T etraconazole T etradifon T etramethrine T olclofos-methyl T olylfluanid Transfluthrin Triadimephon Triadimenol Trialate Trifloxystrobin Triflumizole Vinclozolin DDT isomersum Heptachlor (heptachloarnd heptachloer poxidsum) Trifluraline Chlorobenzilate 3-Chloraniline Abamectin (AvermectinBla and AvermectinBlb sum) Acetamiprid Aldicarb Aldikarbsulphone Aldicarbsulphoxide Azinphos-ethyl Azinphos-methyl Benalaxyl Benfuracarb Boscalid Buprofezin Carbaryl Carbendazim Carbofuran 3-hydroksicarbofuran Carbosulfan Chloridazon Cymoxanil Clofentezin Clothianidin Demeton-S-methyl Demeton-S-methyslulfoxid Diafenthiuron Difenoconazole Dimethoate Dimethomorph Diuron EPN Epoxiconazole Ethirimol Etofenprox Fenamidone Fenbuconazole Fenbutatinoxid Fenoxycarb Fenpyroximate Fenpropathrin Fensulfothion Fenthion Fenthionsulphone Fenthionsulphoxide Fluazinam Flufenoxuron Fluquinconazole Fonofos Formetanate Fosthiazate Hexythiazox Imazalil Imidacloprid Indoxacarb Isofenphos Methacrifos Isofenphos-methyl Krezoxim-methyl Linuron Lufenuron Malaoxon Malathion Mepanipirim Mepronil Metamitron Metconazole Methamidophos Methiocarb Methiocarbsulphone Methiocarbsulfoxide Methomyl Methoxyfenozide Metobromuron Monocrotophos Monolinuron Omethoate Oxamyl Pencycuron Phenmedipham Phosalone Phosmet Phosmeot xon Phoxim Pymetrozine Piperonylbutoxide Pyraclostrobin Pyridaphenthion Pyridate Pyrifenox Pirimicarb Pirimicarbdesmethyl Pirimiphos-methyl Primisulfuron-methyl Prochloraz Propamocarb Propargite Prothioconazole Prothioconazole-desthio Quinalphos SpinosynA SpinosynD Sulfotep T ebufenozide T eflubenzuron Thiabendazole Thiacloprid Thiamethoxam Thiodicar Thiophanate-methyl Tralkoxydim Triazophos Trichlorfon Triflumuron Triforine Triticonazole Zoxamide Acephate Amitraz Fenamiphos Fenamiphosulphone Fenamiphosulfoxid Nitempiram Fenthionoxonsulphone Fenthionoxonsulfoxid Kumapho Piriphenox Mehibuzine DEET

Our laboratory analysis is standardized after following protocols:

LST EN ISO 6579:2003 / AC:2006 / P:2007
LST EN ISO 11290-1:2003 / A1:2004 / P:2005
LST ISO 16649-2:2002 / P:2009
LST ISO 21527-2:2008
Method PLM 486G

Note on Cannabinoid Testing:

All cannabinoids in their acid forms (ending in "-A") are convertible to their non-acid forms via a decarboxylation process (heating). The components lose mass through this process. To find the total theoretical active cannabinoids, one multiplies the acid forms by 87.7%. For example, THC-A can be converted to active THC using the formula: THC-A x 0.877 = THC. In this case, the Max THC for the sample is: Max THC = (THC-A x 0.877) + THC. This method has been validated according to the principles of the International Conference on Harmonisation.

Chromatographic Analysis:

Analysis of cannabinoids content was performed using Shimadzu HPLC system equipped with a SIL 30AC autoinjector with sample cooler, vacuum degassing unit DGU 20A5, pump LC-30AD. Separation of all cannabinoids was accomplished on a Supelco Discovery HS C18 (25 x 4.6 mm, 5 μm) RP column coupled with C18 pre column maintained at 30 °C by a CTO-20AC column oven.
Isocratic elution consisted of acetonitrile:water (FA 0.5%) (4:1) was done in 30 min. The flow rate was maintained at 0.8 ml/min. The cannabinoids CBD and CBDA were monitored at 225 and 306 nm respectively using SPD-M20A diode array detector. The injection volume of 1 mg/ml sample was 20 μl. Data evaluation was performed using Lab Solutions software.
Quantification of cannabinoids was obtained from linear regression equation of calibration curve of individual reference standard by plotting concentration versus the area ratio.
The calibration range for CBD was linear from 5 to 500 μg/ml and for CBDA from 5 to 500 μg/ml.
Elution order CBD-A (RT 9.5 min), CBD (RT 11.1 min).

Sample preparation for HPLC analysis

0.01 g (±.0001) of homogeneous cannabis extract was diluted with 1 ml of methanol (HPLC grade). Solution was sonicated for 5 min and vortexing for 10 sec. Samples before HPLC analysis were centrifuged at 4800 rpm and further diluted with methanol to the final concentration of 1 mg/ml.