
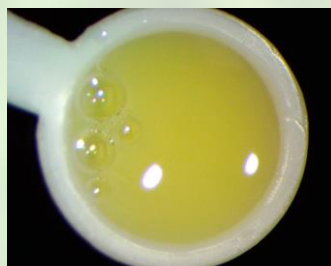


Certificate ID: **125041** Received: **5/6/24**
 Client Sample ID: **PBI Topical Nanoemulsion**
 Lot Number: **041924-0422**
 Matrix: **Concentrates/Extracts-nanoemulsion**



Pressure BioSciences, Inc.
480 NAPONSET BUILDING 10B
CANTON, MA 02021
PO# 103562
MDAR License # 25240244P

Authorization: Andrew Aubin, Lab Director	Signature: 	Date: 5/10/2024
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The data contained within this report was collected in accordance with the requirements of ISO/IEC17025:2017. I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the test article listed in this report. Reports may not be reproduced except in their entirety.

CN: Cannabinoid Profile & Potency [WI-10-17 & WI-10-17-01]

Analyst: SD

Test Date: 5/7/2024

The client sample was analyzed for plant-based cannabinoids by Liquid Chromatography (LC). The collected data was compared to data collected for certified reference standards at known concentrations.

125041-CN

ID	Weight %	Concentration (mg/mL)		
Δ9-THC	ND	ND		
THCV	ND	ND		
CBD	4.22	42.2		
CBDV	0.0147	0.147		
CBG	ND	ND		
CBC	ND	ND		
CBN	ND	ND		
THCA	ND	ND		
CBDA	ND	ND		
CBGA	ND	ND		
CBDVA	ND	ND		
Δ8-THC	ND	ND		
exo-THC	ND	ND		
Total	4.23	42.3	0%	Cannabinoids (wt%) 4.22%
Total THC	ND	ND		Limit of Quantitation (LOQ) = 0.0105 wt%
Total CBD	4.22	42.2		Limit of Detection (LOD) = 0.00350 wt%

Total THC (and Total CBD) are calculated values for total cannabinoids after heating, assuming complete decarboxylation of the acid to the neutral form. It is calculated based on the weight loss of the acid group during decarboxylation: Total THC = (0.877 x THCA) + THC. This calculation does not include other cannabinoid isomers (eg. D8-THC and exo-THC). ND=None detected above the limits of detection (LOD), which is one third of Limit of Quantification (LOQ). For values reported as "<LOQ", the estimated value is included in the calculated Total.

HM: Heavy Metal Analysis [WI-10-13]

Analyst: CJS

Test Date: 5/7/2024

This sample was analyzed by elemental analysis using Inductively Coupled Plasma Mass Spectrometry (ICP-MS) for the identification of heavy metal constituents. External calibration curves for heavy metals were used for quantitation, with an additional internal reference standard. Resulting data was compared with a sample blank. This test method was performed in accordance with the requirements of ISO/IEC 17025. These results relate only to the test article listed in this report. Reports may not be reproduced except in their entirety.

125041-HM

Symbol	Metal	Conc. ¹ (µg/kg)	RL	Use Limits ² (µg/kg)		Status
				All	Ingestion	
As	Arsenic	ND	50.0	200	1,500	PASS
Cd	Cadmium	ND	50.0	200	500	PASS
Hg	Mercury	ND	50.0	100	1,500	PASS
Pb	Lead	ND	50.0	500	1,000	PASS

1) ND = None detected above the indicated Reporting Limit (RL)

2) MA Dept. of Public Health: Protocol for MMJ and MIPS, Exhibit 4(a) for all products.

3) USP exposure limits based on daily oral dosing of 1g of concentrate for a 110 lb person.

MB1: Microbiological Contaminants [WI-10-09]

Analyst: SRD

Test Date: 5/6/2024

This sample was analyzed for microbiological contaminants using an automated Most Probable Number (MPN) methodology with cultured enrichments. This test method was performed in accordance with the requirements of ISO/IEC 17025. These results relate only to the test article listed in this report. Reports may not be reproduced except in their entirety.

125041-MB1

Symbol	Analysis	Results	Units	Limits*	Status
AC	Total Aerobic Bacterial Count	<100	CFU/g	10,000 CFU/g	PASS
CC	Total Coliform Bacterial Count	<100	CFU/g	100 CFU/g	PASS
EB	Total Bile Tolerant Gram Negative Count	<100	CFU/g	100 CFU/g	PASS
YM	Total Yeast & Mold	<100	CFU/g	1,000 CFU/g	PASS

Recommended limits established by the American Herbal Pharmacopoeia (AHP) monograph for Cannabis Inflorescence [2013], for consumable botanical products, including processed and unprocessed cannabis materials, and solvent-based extracts. All recorded Microbiological tests are within the established limits.

MB2: Pathogenic Bacterial Contaminants [WI-10-10]

Analyst: SRD

Test Date: 5/7/2024

This sample was analyzed for pathogenic bacteria using an automated Enzyme Linked Fluorescent Assay (ELFA). This test method was performed in accordance with the requirements of ISO/IEC 17025. These results relate only to the test article listed in this report. Reports may not be reproduced except in their entirety. Quality control checks are performed monthly by running both a positive and a negative control sample for each pathogen. Reports may not be reproduced except in their entirety.

125041-MB2

Test ID	Analysis	Results	Units	Limits*	Status
125041-ECPT	E. coli (O157)	Negative	NA	Non Detected	PASS
125041-SPT	Salmonella	Negative	NA	Non Detected	PASS

Note: All recorded pathogenic bacteria tests passed.

MY: Mycotoxin Testing [WI-10-05]

Analyst: RAM

Test Date: 5/7/2024

This sample was analyzed for mycotoxins using an Immunoaffinity based assay (IA). Data was compared to readings from standard reference materials. This test method was performed in accordance with the requirements of ISO/IEC 17025. These results relate only to the test article listed in this report. Reports may not be reproduced except in their entirety.

125041-MY

Test ID	Date	Results	MDL	Limits	Status*
Total Aflatoxin	5/7/2024	< MDL	2 ppb	< 20 ppb	PASS
Total Ochratoxin	5/7/2024	< MDL	3 ppb	< 20 ppb	PASS

PST: Pesticide Analysis [WI-10-11]

Analyst: KEM

Test Date: 5/7/2024

The client sample was analyzed for pesticides using Liquid Chromatography with Mass Spectrometric detection (LC/MS/MS). The method used for sample prep was based on the European method for pesticide analysis (EN 15662).

125041-PST

Analyte	CAS	Result	Units	LOD	Limits (ppb)	Status
Abamectin	71751-41-2	ND	ppb	19	10	PASS
Azoxystrobin	131860-33-8	ND	ppb	5	100	PASS
Bifenazate	149877-41-8	ND	ppb	5	100	PASS
Bifenthrin	82657-04-3	ND	ppb	5	3000	PASS
Cyfluthrin	68359-37-5	ND	ppb	100	2000	PASS
Dichlorvos	62-73-7	ND	ppb	50	10	PASS
Etoxazole	153233-91-1	ND	ppb	5	100	PASS
Fenoxycarb	72490-01-8	ND	ppb	5	10	PASS
Imazalil	35554-44-0	ND	ppb	50	10	PASS
Imidacloprid	138261-41-3	ND	ppb	5	5000	PASS
Myclobutanil	88671-89-0	ND	ppb	5	100	PASS
Paclobutrazol	76738-62-0	ND	ppb	5	10	PASS
Piperonyl butoxide	51-03-6	ND	ppb	5	3000	PASS
Pyrethrin	8003-34-7	ND	ppb	9	10	PASS
Spinosad	168316-95-8	ND	ppb	3	10	PASS
Spiromesifen	283594-90-1	ND	ppb	5	100	PASS
Spirotetramat	203313-25-1	ND	ppb	5	100	PASS
Trifloxystrobin	141517-21-7	ND	ppb	5	100	PASS

* Pesticide results reported against action limits established by the State of California Bureau of Cannabis Control, California Code of Regulations Title 16, Division 42. ND indicates "none detected" above the limit of detection (LOD). Analytes marked with (*) indicate analytes for which no recovery was observed for a pre-spiked matrix sample due to matrix interference.

VC: Analysis of Volatile Organic Compounds [WI-10-28]*Analyst: BKB**Test Date: 5/6/2024*

The client sample was analyzed by Head-Space Gas Chromatography (HS-GC). The collected data was compared to data collected for certified reference standards at known concentrations.

125041-VC

Compound	CAS	Amount ¹	Limit ²	RL	Status
Propane	74-98-6	ND	1,000 ppm	4	PASS
Isobutane	75-28-5	ND	1,000 ppm	4	PASS
Butane	106-97-8	ND	1,000 ppm	4	PASS
Methanol	67-56-1	ND	3,000 ppm	100	PASS
Pentane	109-66-0	ND	5,000 ppm	100	PASS
Ethanol	64-17-5	221 ppm	5,000 ppm	100	PASS
Acetone	67-64-1	ND	5,000 ppm	100	PASS
Isopropanol	67-63-0	ND	5,000 ppm	100	PASS
Acetonitrile	75-05-8	ND	410 ppm	100	PASS
Hexane	110-54-3	ND	290 ppm	100	PASS
Heptane	142-82-5	ND	5,000 ppm	100	PASS

1) ND = Not detected at a level greater than the Reporting Limit (RL).

2) In ppm, based on USP recommended limits for residual solvents, adopted by the Massachusetts Department of Public Health for cannabis concentrates and extracts on 3/31/16. Butane/Propane limits are based on limits established for state of Colorado.

(*) For ethanol, as many formulations contain flavorings based on ethanol extracts of natural products, no status has been assigned.

END OF REPORT