

CERTIFICATE OF ANALYSIS:

25mg THC FREE MUSCLE & JOINT CAPSULES

Product Name

25mg THC Free Muscle & Joint Capsules

Batch Number

1230119

Manufacture Date

February 25, 2019

Expiration Date

February 2021

Product Description

This product is hemp derived crystalline cannabidiol, blended with a combination of glucosamine, cat's claw, broswellia serrata, curcumin, white willow, MSM, chondroitin sulfate, and piperine. CBD content is double validated through HPLC and convergence chromatography.

Qualitative Analysis

OBSERVATION	METHOD	RESULT
Foreign Matter	Gross Visual/Microscopic	Absent
Color	Gross Visual/Microscopic	Light Brown / Tan
Molds & Mildews	Gross Visual/Microscopic	Absent
Smell	Olfactory	Neutral
Product Feel	Tactile	Powdery, Fine

Quantitative Analysis

Cannabinoid Analysis

RESULT: PASS

IDENTIFICATION	METHOD	RESULT	
		%wt/wt	mg/serving
Cannabinoid	HPLC-DAD		
Cannabidiolic Acid (CBDA)	HPLC-DAD	N/D	N/D
Cannabidiol (CBD)	HPLC-DAD	3.85%	24.45
Cannabidiol (CBD)**	Convergence Chromatography	3.13%	22.79
Cannabidivarin (CBDV)	HPLC-DAD	0.01%	0.07
Tetrahydrocannabinolic Acid (THCA)	HPLC-DAD	N/D	N/D
Δ -9-Tetrahydrocannabinol (Δ -9-THC)	HPLC-DAD	N/D	N/D
Cannabinol (CBN)	HPLC-DAD	N/D	N/D
Cannabichromene (CBC)	HPLC-DAD	N/D	N/D

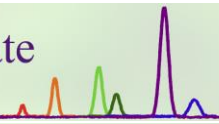
**Denotes third party analysis. Source data available upon request.

N/A NOT APPLICABLE TO PRODUCT TYPE

N/D NOT DETECTED



Christopher E Stubbs, CSO



Certificate ID: **50704**

Received: **3/14/19**

Scan QR Code for authenticity



Client Sample ID: **NVL_J&M_031319**



Lot Number: **1230119**

Matrix: **Capsules/Tablets - Capsule**

Authorization: Jon Podgorni, Lab Manager	Signature: <i>Jon Podgorni</i>	Date: 3/29/2019
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The data contained within this report was collected in accordance with the requirements of ISO/IEC17025:2005. 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: *JSG*

Test Date: 3/26/2019

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.

50704-CN

ID	Weight %	Conc.		
D9-THC	ND	ND		
THCV	ND	ND		
CBD	3.13 wt %	22.79 mg/capsule		
CBDV	ND	ND		
CBG	ND	ND		
CBC	ND	ND		
CBN	ND	ND		
THCA	ND	ND		
CBDA	ND	ND		
CBGA	ND	ND		
D8-THC	ND	ND		
exo-THC	ND	ND		
Total	3.13 wt%	22.79 mg/capsule	0%	Cannabinoids (wt%) 3.1%
Max THC	-	-		
Max CBD	3.13 wt%	22.79 mg/capsule		

Max THC (and Max 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: Max 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 (LLD)

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

Analyst: JFD

Test Date: 3/20/2019

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.

50704-HM

Symbol	Metal	Conc. ¹	Units	MDL	Use Limits ²		Units	Status
					All	Ingestion		
As	Arsenic	70	µg/kg	4	200	1500	µg/kg	PASS
Cd	Cadmium	47	µg/kg	1	200	500	µg/kg	PASS
Hg	Mercury	ND	µg/kg	2	100	1500	µg/kg	PASS
Pb	Lead	230	µg/kg	2	500	1000	µg/kg	PASS

1) ND = None detected to Lowest Limits of Detection (LLD)

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: MM

Test Date: 3/15/2019

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.

50704-MB1

Symbol	Analysis	Results	Units	Limits*	Status
AC	Total Aerobic Bacterial Count	<100	CFU/g	100,000 CFU/g	PASS
CC	Total Coliform Bacterial Count	<100	CFU/g	1,000 CFU/g	PASS
EB	Total Bile Tolerant Gram Negative Count	<100	CFU/g	1,000 CFU/g	PASS
YM	Total Yeast & Mold	=210	CFU/g	10,000 CFU/g	PASS

Note: All recorded Microbiological tests are within the established limits.

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.

50704-VC

Compound	CAS	Amount ¹	Limit ²	RL	Status
Propane	74-98-6	ND	1,000 ppm	2	PASS
Isobutane	75-28-5	ND	1,000 ppm	2	PASS
Butane	106-97-8	ND	1,000 ppm	2	PASS
Methanol	67-56-1	53 ppm	3,000 ppm	20	PASS
Ethanol	64-17-5	21 ppm	5,000 ppm	20	PASS
Acetone	67-64-1	687 ppm	1,000 ppm	20	PASS
Isopropanol	67-63-0	101 ppm	5,000 ppm	20	PASS
Acetonitrile	75-05-8	ND	410 ppm	20	PASS
Hexane	110-54-3	33 ppm	290 ppm	20	PASS
Ethyl Acetate	141-78-6	53 ppm	5,000 ppm	20	PASS
Heptane	142-82-5	ND	5,000 ppm	20	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 on 3/31/16. Butane/Propane limits are based on limits established for state of Colorado.

END OF REPORT