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BSCG ANALYTICAL REPORT
CERTIFIED CBD

REPORTING ADDRESS:

fourfive
Fountain Court, 2 Victoria Square
St Albans, Hertfordshire
United Kingdom, AL1 3TF

REPORT DATE: October 16, 2019
RECEIVE DATE: September 26, 2019
BRAND NAME: fourfive
PRODUCT NAME: cbd muscle rub
BATCH #: FFCB005
LAB ID #: 278827 / 1910445
PRODUCT TYPE: Finished Product

CANNABINOID PROFILE TESTING

METHOD: Quantitative Analysis of Cannabinoids by High Performance Liquid Chromatography with UltraViolet Detector (HPLC-UV) in Accordance with ISO/IEC 17025:2005 Validated Standard Operating Procedure.

Density of Product (1.0 g/ml - water, 0.925 g/ml - oil, 0.945 g/ml - MCT oil) 0.925
Serving Size on Package (ml) 0
Package Size (ml) 45
Suggested Use Per Day (ml) 0

Analyte	RESULTS		CALCULATED VALUES			PERCENT	
	mg/kg *	RL	mg/g	mg/serving	mg/package	%	Pass/Fail
Cannabidiol (CBD)	10800	493	9.99	0.00	449.55	1.08	
Cannabidiolic Acid (CBDA)	0	49.3	0.00	0.00	0.00	0.00	
Cannabigerol (CBG)	0	49.3	0.00	0.00	0.00	0.00	
Cannabinol (CBN)	0	49.3	0.00	0.00	0.00	0.00	
Delta 9-Tetrahydrocannabinol (D9-THC)	0	49.3	0.00	0.00	0.00	0.00	
Delta 8-Tetrahydrocannabinol (D8-THC)	0	49.3	0.00	0.00	0.00	0.00	
Cannabichromene (CBC)	0	49.3	0.00	0.00	0.00	0.00	
Tetrahydrocannabinolic acid (THCA)	0	49.3	0.00	0.00	0.00	0.00	
Total Cannabinoids	10800		9.99	0.00	449.55	1.08	
Max THC (THC + 0.877*THCA)			0.00	0.00	0.00	0.00	Pass
Max CBD (CBD + 0.877*CBDA)			9.99	0.00	449.55	1.08	Pass
Other Cannabinoids			0.00	0.00	0.00	0.00	

Notes:
Max THC must be <0.30% to Pass
RL - Reporting Limit
* Zero indicates the analyte was not detected subject to the RL.
Max THC and Max CBD are calculated values based on the weight loss of the acid group assuming complete decarboxylation of the acid to the neutral form

CONTAMINANTS - SOLVENTS

METHOD: Residual Solvents by Head Space Gas Chromatography Flame Ionization Detection Mass Spectrometry (HS GC FID/MS) in Accordance with ISO/IEC 17025:2005 Validated Standard Operating Procedure.

Solvent	Category	Result	RL (ppm)	Action Level (ppm)	Pass/Fail
1,2-Dichloroethane	I	ND	<1	Present	Pass
Benzene	I	ND	<1	Present	Pass
Chloroform	I	ND	<1	Present	Pass
Ethylene oxide	I	ND	<1	Present	Pass
Methylene chloride	I	ND	<1	Present	Pass
Trichloroethene	I	ND	<1	Present	Pass
Acetone	II	ND	<1	5000	Pass
Acetonitrile	II	ND	<1	410	Pass
Butane	II	ND	<1	5000	Pass
Diethyl ether	II	ND	<1	5000	Pass
Ethanol	II	ND	<1	5000	Pass
Ethyl acetate	II	ND	<1	5000	Pass
Heptane	II	ND	<1	5000	Pass
Hexane	II	ND	<1	290	Pass
Isopropanol	II	ND	<1	5000	Pass
Methanol	II	ND	<1	3000	Pass
Pentane	II	ND	<1	5000	Pass
Propane	II	ND	<1	5000	Pass
Toluene	II	ND	<1	890	Pass
Total xylenes (ortho-, meta-, para-)	II	ND	<1	2170	Pass

Notes:
ND - Not Detected
RL - Reporting Limit
California Bureau of Cannabis Control Emergency Regulation Text Solvent List and Action Level Used
Pass/Fail based on Action Level



CONTAMINANTS - PESTICIDES

METHOD: USP 40 <561>, sample meets European Pharmacopeial Pesticides Residual limits for all compounds.
No Quintozone residues detected.

RESULTS (Pass/Fail based on Limit):

Compound	Limit (PPM)	Result
Acephate	0.1	Pass
Alachlor	0.05	Pass
Aldrin and dieldrin	0.05	Pass
Azinphos-ethyl	0.1	Pass
Azinphos-methyl	1	Pass
Bromine, inorganic	50	Pass
Bromophos-ethyl	0.05	Pass
Bromophos-methyl	0.05	Pass
Bromopropylate	3	Pass
Chlordane	0.05	Pass
Chlorfenvinphos	0.5	Pass
Chlorpyrifos-ethyl	0.2	Pass
Chlorpyrifos-methyl	0.1	Pass
Chlorthal-dimethyl	0.01	Pass
Cyfluthrin (sum of gamma-Cyhalothrin	0.1	Pass
Cypermethrin	1	Pass
DDT (sum of o,p'-DDE, p,p'-DDE, o,p'-DDT, p,p'-DDT, o,p'-DDD, and p,p'-DDD)	1	Pass
Deltamethrin	0.5	Pass
Diazinon	0.5	Pass
Dichlofuanid	0.1	Pass
Dichlorvos	1	Pass
Dicofol	0.5	Pass
Dimethoate and omethoate	0.1	Pass
Dithiocarbamate (as CS2)	2	Pass
Endosulfan (includes endosulfan I, II, sulfate)	3	Pass
Endrin	0.05	Pass
Ethion	2	Pass
Etrimphos	0.05	Pass
Fenchlorphos (sum of fenchlorophos and fenchlorophos-oxon)	0.1	Pass
Fenitrothion	0.1	Pass
Fenpropathrin	0.03	Pass
Fensulfothion	0.05	Pass
Fenthion	0.05	Pass
Fenvalerate	1.5	Pass
Flucytrinrate	0.05	Pass

Compound	Limit (PPM)	Result
t-Fluvalinate	0.05	Pass
Fonofos	0.05	Pass
Heptachlor	0.05	Pass
Heptachlor Epoxide	0.05	Pass
Hexachlorobenzene	0.1	Pass
Hexachlorocyclohexane	0.3	Pass
Lindane	0.6	Pass
Malathion and malaoxon	1	Pass
Mecarban	0.05	Pass
Methacriphos	0.05	Pass
Methamidophos	0.05	Pass
Methidathion	0.2	Pass
Methoxychlor	0.05	Pass
Mirex	0.01	Pass
Monocrotophos	0.1	Pass
Parathion-ethyl and Paraoxon-ethyl	0.5	Pass
Parathion-methyl and Paraoxon-methyl	0.2	Pass
Pencimethalin	0.1	Pass
Pentachloranisol	0.01	Pass
Permethrin and isomers	1	Pass
Phosalone	0.1	Pass
Phosmet	0.05	Pass
Piperonyl butoxide	3	Pass
Pirimiphos-ethyl	0.05	Pass
Pirimiphos-methyl	4	Pass
Procymidone	0.1	Pass
Profenophos	0.1	Pass
Prothiophos	0.05	Pass
Pyrethrins	3	Pass
Quinalphos	0.05	Pass
Quintozone (PCNB) (includes alpha-BHC, beta-BHC, delta-BHC)	1	Pass
S-421	0.02	Pass
Tecnazene	0.05	Pass
Tetradifon	0.3	Pass
Vinclozolin	0.4	Pass

CONTAMINANTS - MICROBIOLOGICAL AGENTS

METHOD: USP <2021>, USP <2022>, AOAC <991.14>

RESULTS (cfu/g, ND, or Absent/Present):

LIMITS - Finished Products/Ingredients, Botanical Extract

Test	Result	USP	ANSI 173	AHPA	CBCC
Total Plate Count	<10	1 x 10 ⁴	1 x 10 ⁴	1 x 10 ⁴	N/A
Yeast and Mold	<10	1 x 10 ³	1 x 10 ³	1 x 10 ³	N/A
Total Coliforms	<10	N/A	1 x 10 ^{2 a}	1 x 10 ²	N/A
E. Coli	ND	Absent	ND	ND	ND
Salmonella species	ND	Absent	ND	ND	ND
Staphylococcus aureus	ND	N/A	ND	N/A	N/A
Pseudomonas aeruginosa	ND	N/A	N/A	N/A	N/A
	Pass/Fail	Pass	Pass	Pass	Pass

Notes:

ND - Not Detected

N/A - Not Applicable

California Bureau of Cannabis Control (CBCC) Emergency Regulation Text

USP 40-NF 35 <2023> - Microbiological Attributes of Nonsterile Nutritional and Dietary Supplements - May 1, 2017

ANSI 173 - 2013 (a - ANSI 173 limits reference enterbacteriaceae as opposed to total coliforms)

AHPA Guidance Policies - Rev. 07/03/17



BANNED SUBSTANCES CONTROL GROUP

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CONTAMINANTS - HEAVY METALS

METHOD: Quantitative Analysis of Heavy Metals by Inductively Coupled Plasma Mass Spectrometry (ICP-MS) for Arsenic, Cadmium, Lead, Mercury, Chromium

RESULTS (ppm):

ACCEPTABLE LEVELS: (ppm) - Cosmetics

METAL	RESULT	US FDA	Canada	Germany
Arsenic	0.002	NA	3	0.5
Cadmium	<0.001	NA	3	0.1
Mercury	0.004	1	1	0.1
Lead	0.010	10	10	2
Chromium	0.077	50	N/A	NA
	Pass/Fail	Pass	Pass	Pass

Notes:
US FDA Testing of Cosmetics for Arsenic, Cadmium, Chromium, Cobalt, Lead, Mercury, and Nickel Content - May 7, 2019
German Federal Office of Consumer Protection and Food Safety (BVL) - July 24, 2017
Government of Canada - Guidance on Heavy Metal Impurities in Cosmetics - July 20, 2012

BANNED SUBSTANCE TESTING

METHOD: Samples of the item were extracted and analyzed according to in-house methods for nutritional supplements by qualitative instrumental screen using ultra-high-performance liquid chromatography / high-resolution mass spectrometry (UHPLC/HRMS). Method detection levels, which vary based on compound and matrix analyzed, are estimated to be in the 2-500 ng/g range for most compounds in most items.

TESTING MENU: The testing menu covers 489 compounds including WADA Prohibited Substances and other prescription, over-the-counter, and illicit drugs not banned in sport. Details are available at <https://www.bscg.org/certified-drug-free-testing-menu-wada-prohibited-list-and-more/>.

RESULTS: No compounds from the testing menu were detected in the item.

Please contact info@bscg.org with any concerns or questions.

Sincerely,

Oliver Catlin
President