

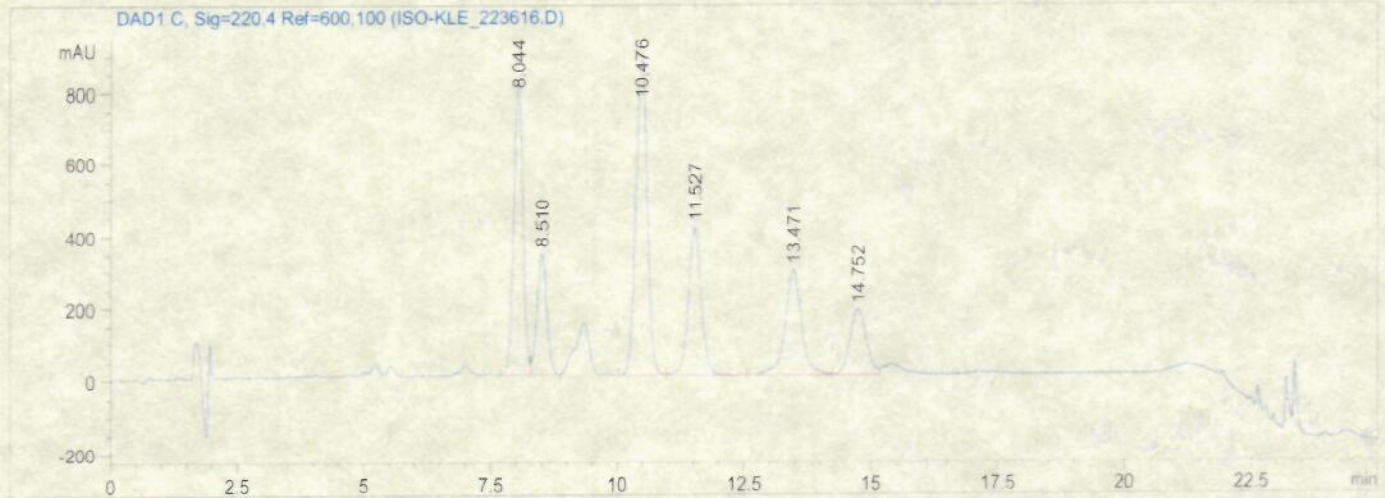
Wonderland Labs

Certificate of Analysis

14 MAY 2019

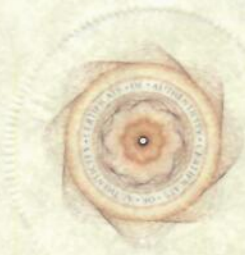
KAVA KAVA WATER SOL.

Client	SHAMAN BOTANICALS	Acquired By	Ricky R.
Sample Type	Powdered	Date Acquired:	05/08/2019
Sample Weight	2000mg	Acquisition Method	KLE_LN2-R01-28M
Dilution	1.0	Testing ID	ISO-KLE_223616.D
Vial	Vial 1	Date Processed	05/08/2019
Injection Volume	1 µl	Run Time	28 min
Sample Set	120890	Calibration ID	999-1111



#	Analyte	RT (min)	Area	Height	Kavalactone %	Kavalactone #
1	Methysticin	8.044	10375.4	822.039	1.21	6
2	Dihydromethysticin	8.510	4433.9	338.690	1.29	5
3	Kavain	10.476	13782.4	881.168	2.44	4
4	Dihydrokavain	11.527	7324.5	410.283	2.20	2
5	Yangonin	13.471	6589.9	295.610	1.02	3
6	Desmethoxyyangonin	14.752	4119.0	183.292	.65	1

Kavalactone Lineup: 4-2-5
 Total Kavalactone: 8.81%
 Total Flavokavain: N/A



SEAL OF AUTHENTICITY

VERIFIED BY: *[Signature]*

Quality Assurance: *[Signature]*

Wonderland LABS

Heavy Metals Analysis

21 MAY 2019

SHAMAN BOTANICAL

Product #	Lot #	Metals	Spec	Results
Kava Kava	N/A	Arsenic	< 10,000 ppb	23 ppb
		Cadmium	< 4,100 ppb	3 ppb
		Lead	< 900 ppb**	2 ppb**
		Mercury*	< 300 ppb	1 ppb
		Nickel***	< 1,000 ppb	159 ppb

Sample Set: 120890

Heavy Metals (USA): PASS

Heavy Metals (CA): PASS



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VERIFIED BY: *[Signature]*

Quality Assurance: *Michelle Harris*

WONDERLAND LABS

Certificate of Analysis (BIOLOGICAL)

23 MAY 2019

SHAMAN BOTANICAL

Total Aerobics, Yeast & Mold, Coliforms, E. coli, Salmonella, & Staphylococcus

USP NF Aerobic Plate Count				USP NF Total Yeast		USP NF Total Mold	
Sample	Lot #	Spec*	Result*	Spec	Result	Spec	Result
Kratom	N/A	5x10 ⁵ CFU/g	1.6x10 ⁴ CFU/g	10 ⁵ CFU/g	3.4x10 ² CFU/g	10 ⁵ CFU/g	3.4x10 ² CFU/g
Kava Kava	N/A	5x10 ⁵ CFU/g	<10 CFU/g	10 ⁵ CFU/g	<10 CFU/g	10 ⁵ CFU/g	<10 CFU/g

FDA(BAM)CH.4 Coliforms 3 tube MPN				USP NF E. Coli POS/NEG		USP NF Salmonella ELFA		USP NF Staphylococcus Aureus	
Sample	Lot #	Spec	Result	Spec	Result	Spec	Result	Spec	Result
Kratom	N/A	10 ⁴ CFU/g	10 ³ CFU/g	POS/NEG	NEG	POS/NEG	NEG	POS/NEG	NEG
Kava Kava	N/A	10 ⁴ CFU/g	10 CFU/g	POS/NEG	NEG	POS/NEG	NEG	POS/NEG	NEG

* Results are in CFU/g. The detection level for testing Yeast, Mold, and Salmonella is <10 CFU/g. FDA BAM detection level for Coliforms and E.Coli is <3 CFU/g.

Typical Aerobic Plate Count Range for Mitragyna speciosa is 500,000 CFU/g

Sample Set: 120890
 Test Date: 05/15/19
 Bio Final: PASS



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VERIFIED BY: *[Signature]*

Quality Assurance: *[Signature]*



Heavy Metals Analysis

REVISION 999-1111

INFORMATIONAL RESULTS KEY

United States Pharmacopeia (USP) Limit for Nutritional Supplements:

- Arsenic 3.000 ppm / 3000.000 ppb
- Cadmium 3.000 ppm / 3000.000 ppb
- Lead 10.000 ppm / 10000.000 ppb
- Mercury 3.000 ppm / 3000.000 ppb
- Nickel 1.000 ppm / 1000 ppb***

California Proposition 65 Daily Limits for Heavy Metals:

- Arsenic 10 ppm / 10,000.000 ppb
- Cadmium 4.1 ppm / 4,100.000 ppb
- Lead 0.5 ppm / 500.000 ppb**
- Methyl Mercury 0.3 ppm / 300.000 ppb

For labels with a single daily dose of 500mg, the PPM in products cannot be higher than:

- Arsenic = 20.000 ppm / 20,000.000 ppb
- Cadmium = 8.000 ppm / 8,000.000 ppb
- Lead = 0.900 ppm / 900.000 ppb
- Mercury = 0.600 ppm / 600.000 ppb

FDA Tolerable Daily Diet Lead intake:

- Children <6 years old = 6.000 ppm / 6000.000 ppb
- Pregnant women = 25.000 ppm / 25000.000 ppb
- Adults = 75.000 ppm / 75000.000 ppb

* Methyl mercury is included in total Mercury. Method AOAC 993.14 is equivalent to method ICP-MS USP <730>.

** California's Proposition 65 set up overly restrictive limits for many materials in relation to lead. There are many plants that have higher levels of lead than is acceptable in the State of California. One example is *Mitragyna speciosa*, which naturally has lead levels above 500 ppb.

This restriction will technically cause a FAIL for any material above 500 ppb in the State of California, which is why we have separated out that state from all the others in the USA.

If your CA result comes back as a "HI-LEAD", you may be required to place notices on your material, or it may be a material that cannot technically be sold for consumption in the state of California.

*** According to the USP, the safe Tolerable Upper Intake Level of Nickel for adults is 1.0mg/day, rounded down. This equates to 1,000 ppb for any consumable material.