

# CERTIFICATE OF ANALYSIS

## ISO/IEC 17025:2017 ACCREDITATION #103104



Order #: 53491  
 Order Name: Koi Muscle Gel  
 Roll On 500mg  
 Batch#: 1375BB0422  
 Received: 05/04/2020  
 Completed: 05/08/2020



Koi CBD LLC  
 14631 Best Ave  
 Norwalk California, 90650  
 (877) 774-4779  
 morgan@koicbd.com



### Sample



N/D  
 D9-THC

0.644%  
 Total CBD

604.2 mg  
 Cannabinoids per  
 unit

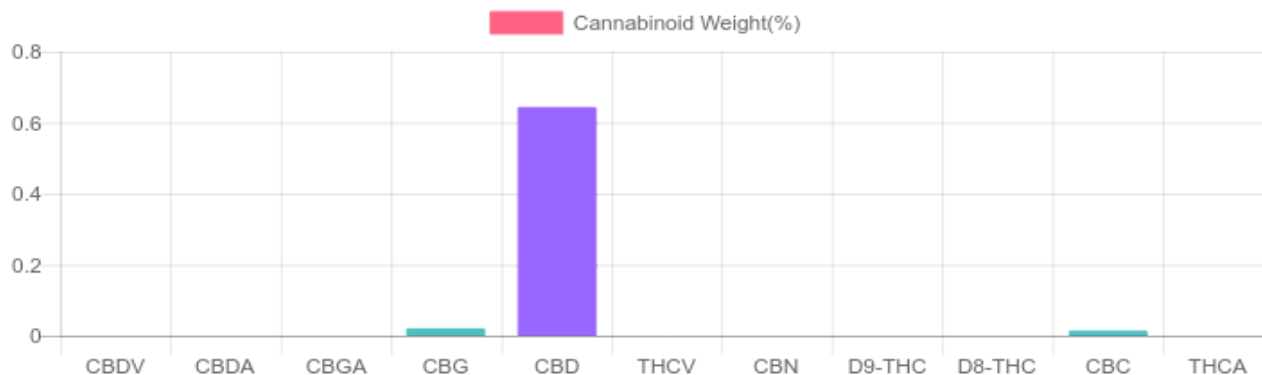
573.0 mg  
 CBD per  
 unit

### Cannabinoids Test

SHIMADZU INTEGRATED UPLC-PDA  
 GSL SOP 400  
 PREPARED: 05/04/2020 16:03:46

| Cannabinoids       | LOQ    | weight(%) | mg/g  | mg/unit |
|--------------------|--------|-----------|-------|---------|
| D9-THC             | 10 PPM | N/D       | N/D   | N/D     |
| THCA               | 10 PPM | N/D       | N/D   | N/D     |
| CBD                | 10 PPM | 0.644%    | 6.438 | 573.0   |
| CBDA               | 20 PPM | N/D       | N/D   | N/D     |
| CBDV               | 20 PPM | N/D       | N/D   | N/D     |
| CBC                | 10 PPM | 0.014%    | 0.137 | 12.2    |
| CBN                | 10 PPM | N/D       | N/D   | N/D     |
| CBG                | 10 PPM | 0.021%    | 0.213 | 19.0    |
| CBGA               | 20 PPM | N/D       | N/D   | N/D     |
| D8-THC             | 10 PPM | N/D       | N/D   | N/D     |
| THCV               | 10 PPM | N/D       | N/D   | N/D     |
| TOTAL D9-THC       |        | N/D       | N/D   | N/D     |
| TOTAL CBD*         |        | 0.644%    | 6.438 | 573.0   |
| TOTAL CANNABINOIDS |        | 0.679%    | 6.788 | 604.2   |

1 unit = 89 ml per unit x density (1) x  
 Cannabinoid concentration



Reporting Limit 10 ppm

\*Total CBD = CBD + CBDA x 0.877

N/D - Not Detected, B/LOQ - Below Limit of Quantification

Dr. Andrew Hall, Ph.D., Chief Scientific Officer

Ben Witten, MS, MT., Lab Director

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 1-833 TEST CBD



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### TERPENES: TOTAL (1.337%)

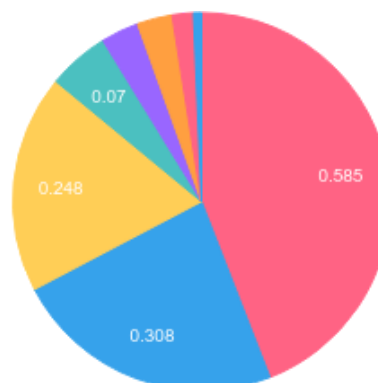
Headspace GCMS - Shimadzu GCMS QP2020 with HS20

GSL SOP 404

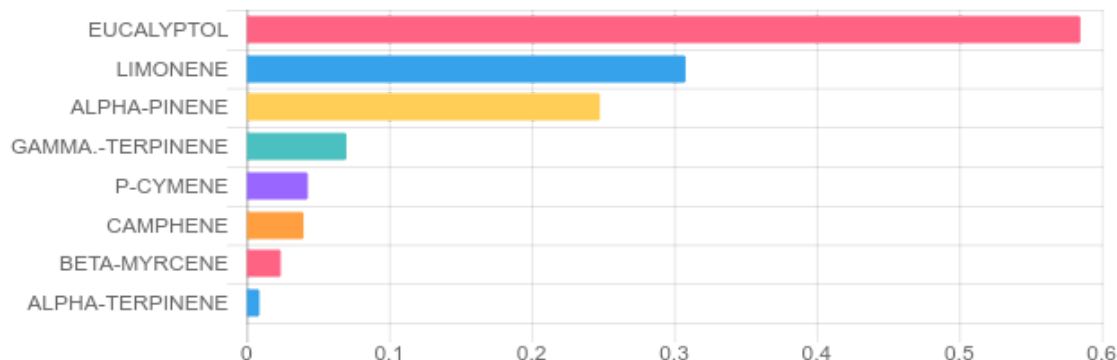
Prepared: 05/05/2020 16:21:05

| Terpene         | Results (%) | LOQ (%) | LOD (%) |
|-----------------|-------------|---------|---------|
| ALPHA-PINENE    | 0.248%      | 0.0067% | 0.0063% |
| ALPHA-TERPINENE | 0.009%      | 0.0067% | 0.0063% |
| BETA-MYRCENE    | 0.024%      | 0.0067% | 0.0063% |
| BETA-PINENE     | B/LOQ       | 0.0067% | 0.0063% |
| CAMPHENE        | 0.040%      | 0.0067% | 0.0063% |
| EUCALYPTOL      | 0.585%      | 0.0067% | 0.0063% |
| GAMMA-TERPINENE | 0.070%      | 0.0067% | 0.0016% |
| LIMONENE        | 0.308%      | 0.0067% | 0.0063% |
| LINALOOL        | B/LOQ       | 0.0067% | 0.0063% |
| P-CYMENE        | 0.043%      | 0.0067% | 0.0063% |

### Terpenes Breakdown



### Top Terpenes Results:



### Tested for but not present:

3-CARENE, TRANS-BETA-OCIMENE, CIS-BETA-OCIMENE, TERPINOLENE, ISOPULEGOL, GERANIOL, CARYOPHYLLENE, HUMULENE, CIS-NEROLIDOL, TRANS-NEROLIDOL, GUAIOL, CARYOPHYLLENE OXIDE, ALPHA-BISABOLOL

Dr. Andrew Hall, Ph.D., Chief Scientific Officer

Ben Witten, MS, MT., Lab Director

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 1-833-TEST-CBD



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### PESTICIDE ANALYSIS:

GSL SOP 401

PREPARED: 05/04/2020 17:19:21

GCMS-MS - Shimadzu GCMS-TQ8040

| Pesticide    | Action Level (ppm) | Results (ppm) | LOQ (ppm) | LOD (ppm) |
|--------------|--------------------|---------------|-----------|-----------|
| CAPTAN       | 0.700              | N/D           | 0.003     | 0.001     |
| CHLORDANE    | 0.100              | N/D           | 0.003     | 0.001     |
| CHLORFENAPYR | 0.100              | N/D           | 0.003     | 0.001     |
| COUMAPHOS    | 0.100              | N/D           | 0.003     | 0.001     |

LCMS-MS - Shimadzu LCMS-8060

| Pesticide           | Action Level (ppm) | Results (ppm) | LOQ (ppm) | LOD (ppm) |
|---------------------|--------------------|---------------|-----------|-----------|
| ABAMECTIN B1A       | 0.100              | N/D           | 0.005     | 0.001     |
| ACEPHATE            | 0.100              | N/D           | 0.001     | 0.001     |
| ACEQUINOCYL         | 0.100              | N/D           | 0.001     | 0.001     |
| ACETAMIPRID         | 0.100              | N/D           | 0.005     | 0.001     |
| ALDICARB            | 0.100              | N/D           | 0.005     | 0.001     |
| AZOXYSTROBIN        | 0.100              | N/D           | 0.001     | 0.001     |
| BIFENAZATE          | 0.100              | N/D           | 0.005     | 0.001     |
| BIFENTHRIN          | 3.000              | N/D           | 0.005     | 0.001     |
| BOSCALID            | 0.100              | N/D           | 0.005     | 0.001     |
| CARBARYL            | 0.500              | N/D           | 0.003     | 0.001     |
| CARBOFURAN          | 0.100              | N/D           | 0.001     | 0.001     |
| CHLORANTRANILIPROLE | 10.000             | N/D           | 0.005     | 0.005     |
| CHLORPYRIFOS        | 0.100              | N/D           | 0.001     | 0.001     |
| CLOFENTEZINE        | 0.100              | N/D           | 0.001     | 0.001     |
| DAMINOZIDE          | 0.100              | N/D           | 0.005     | 0.001     |
| DIAZINON            | 0.100              | N/D           | 0.001     | 0.001     |
| DICHLORVOS          | 0.100              | N/D           | 0.005     | 0.001     |
| DIMETHOATE          | 0.100              | N/D           | 0.001     | 0.001     |
| DIMETHOMORPH        | 2.000              | N/D           | 0.005     | 0.001     |
| ETHOPROPHOS         | 0.100              | N/D           | 0.001     | 0.001     |
| ETOFENPROX          | 0.100              | N/D           | 0.001     | 0.001     |
| ETOXAZOLE           | 0.100              | N/D           | 0.010     | 0.005     |
| FENHEXAMID          | 0.100              | N/D           | 0.005     | 0.001     |
| FENOXYCARB          | 0.100              | N/D           | 0.005     | 0.001     |
| FENPYROXIMATE       | 0.100              | N/D           | 0.001     | 0.001     |
| FIPRONIL            | 0.100              | N/D           | 0.003     | 0.001     |
| FLONICAMID          | 0.100              | N/D           | 0.025     | 0.010     |
| FLUDIOXONIL         | 0.100              | N/D           | 0.003     | 0.001     |
| HEXYTHIAZOX         | 0.100              | N/D           | 0.005     | 0.001     |
| IMAZALIL            | 0.100              | N/D           | 0.005     | 0.001     |

| Pesticide               | Action Level (ppm) | Results (ppm) | LOQ (ppm) | LOD (ppm) |
|-------------------------|--------------------|---------------|-----------|-----------|
| CYFLUTHRIN              | 2.000              | N/D           | 0.003     | 0.001     |
| CYPERMETHRIN            | 1.000              | N/D           | 0.003     | 0.001     |
| PARATHION-METHYL        | 0.100              | N/D           | 0.003     | 0.001     |
| PENTACHLORONITROBENZENE | 0.100              | N/D           | 0.003     | 0.001     |

| Pesticide       | Action Level (ppm) | Results (ppm) | LOQ (ppm) | LOD (ppm) |
|-----------------|--------------------|---------------|-----------|-----------|
| IMIDACLOPRID    | 5.000              | N/D           | 0.005     | 0.001     |
| KRESOXIM-METHYL | 0.100              | N/D           | 0.010     | 0.005     |
| MALATHION       | 0.500              | N/D           | 0.005     | 0.001     |
| METALAXYL       | 2.000              | N/D           | 0.001     | 0.001     |
| METHIOCARB      | 0.100              | N/D           | 0.005     | 0.001     |
| METHOMYL        | 1.000              | N/D           | 0.001     | 0.001     |
| MEVINPHOS       | 0.100              | N/D           | 0.001     | 0.001     |
| MYCLOBUTANIL    | 0.100              | N/D           | 0.005     | 0.001     |
| NALED           | 0.100              | N/D           | 0.005     | 0.001     |
| OXAMYL          | 0.500              | N/D           | 0.001     | 0.001     |
| PACLOBUTRAZOL   | 0.100              | N/D           | 0.005     | 0.001     |
| PERMETHRINS     | 0.500              | N/D           | 0.005     | 0.001     |
| PHOSMET         | 0.100              | N/D           | 0.005     | 0.001     |
| PIPERONYL       | 3.000              | N/D           | 0.001     | 0.001     |
| BUTOXIDE        |                    |               |           |           |
| PRALLETHRIN     | 0.100              | N/D           | 0.005     | 0.005     |
| PROPICONAZOLE   | 0.100              | N/D           | 0.010     | 0.005     |
| PROPOXUR        | 0.100              | N/D           | 0.001     | 0.001     |
| PYRETHRINS      |                    |               |           |           |
| (PYRETHRIN I)   | 0.500              | N/D           | 0.005     | 0.005     |
| PYRIDABEN       | 0.100              | N/D           | 0.005     | 0.001     |
| SPINETORAM      | 0.100              | N/D           | 0.001     | 0.001     |
| SPINOSAD        | 0.100              | N/D           | 0.001     | 0.001     |
| SPIROMESIFEN    | 0.100              | N/D           | 0.005     | 0.001     |
| SPIROTETRAMAT   | 0.100              | N/D           | 0.001     | 0.001     |
| SPIROXAMINE     | 0.100              | N/D           | 0.001     | 0.001     |
| TEBUCONAZOLE    | 0.100              | N/D           | 0.005     | 0.001     |
| THIACLOPRID     | 0.100              | N/D           | 0.001     | 0.001     |
| THIAMETHOXAM    | 5.000              | N/D           | 0.001     | 0.001     |
| TRIFLOXYSTROBIN | 0.100              | N/D           | 0.001     | 0.001     |

N/D = Not Detected, A/LOQ = Above LOQ Level, B/LOQ = Below LOQ Level, B/LOD = Below LOD Level

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### RESIDUAL SOLVENTS:

Headspace GCMS - Shimadzu GCMS QP2020 with HS20

GSL SOP 405

Prepared: 05/05/2020 14:40:41

| Residual Solvent         | Action Level (ppm) | Results (ppm) | LOQ (ppm) | LOD (ppm) |
|--------------------------|--------------------|---------------|-----------|-----------|
| 1,1-DICHLOROETHENE       | 8                  | N/D           | 0.63      | 0.63      |
| 1,2-DICHLOROETHANE       | 2                  | N/D           | 0.12      | 0.02      |
| ACETONE                  | 5,000              | N/D           | 140       | 20        |
| ACETONITRILE             | 410                | N/D           | 25        | 1         |
| BENZENE                  | 1                  | N/D           | 1         | 0.5       |
| BUTANE                   | 5,000              | N/D           | 50        | 10        |
| CHLOROFORM               | 1                  | N/D           | 1         | 0.5       |
| CIS 1,2-DICHLOROETHENE   | 5                  | N/D           | 0.73      | 0.18      |
| ETHANOL                  | 5,000              | N/D           | 140       | 20        |
| ETHYL ACETATE            | 5,000              | N/D           | 140       | 20        |
| ETHYL ETHER              | 5,000              | N/D           | 140       | 20        |
| ETHYLENE OXIDE           | 1                  | N/D           | 0         | 0         |
| ISOPROPYL ALCOHOL        | 5,000              | N/D           | 140       | 20        |
| METHANOL                 | 3,000              | N/D           | 100       | 20        |
| METHYLENE CHLORIDE       | 125                | N/D           | 0.15      | 0.15      |
| N-HEPTANE                | 5,000              | N/D           | 140       | 20        |
| N-HEXANE                 | 290                | N/D           | 18        | 10        |
| PENTANE                  | 5,000              | N/D           | 140       | 20        |
| PROPANE                  | 5,000              | N/D           | 20        | 1         |
| TOLUENE                  | 890                | N/D           | 53        | 1         |
| TRANS 1,2-DICHLOROETHENE | 5                  | N/D           | 0.73      | 0.18      |
| TRICHLOROETHENE          | 1                  | N/D           | 1         | 0.5       |
| XYLENES                  | 150                | N/D           | 130       | 20        |

### Notes

Ethanol is part of the ingredients.

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### Microbial Analysis:

Microbial Analysis GSL SOP 406

Uploaded: 05/08/2020 11:42:27

PCR - Agilent AriaMX

| Test                   | Test Method Used | Device Used | LOD               | Allowable Criteria | Actual Result   | Pass/Fail |
|------------------------|------------------|-------------|-------------------|--------------------|-----------------|-----------|
| STEC E.COLI*           | USP 61/62†       | ARIAMX PCR  | 2 COPIES OF DNA   | PRESENCE / ABSENT  | BELOW LOD       | PASS      |
| SALMONELLA*            | USP 61/62†       | ARIAMX PCR  | 5 COPIES OF DNA   | PRESENCE / ABSENT  | BELOW LOD       | PASS      |
| ASPERGILLUS            | USP 61/62†       | ARIAMX PCR  | ASP_LOD***        | PRESENCE / ABSENT  | BELOW LOD       | PASS      |
| YEAST AND MOLD         | USP 61/62†       | ARIAMX PCR  | 363.05518 CFU/G** | 1,000              | BELOW THRESHOLD | PASS      |
| TOTAL AEROBIC BACTERIA | USP 61/62†       | ARIAMX PCR  | 0.25316 CFU/G**   | 10,000             | BELOW THRESHOLD | PASS      |
| COLIFORM               | USP 61/62†       | ARIAMX PCR  | 3.41539 CFU/G**   | 100                | BELOW THRESHOLD | PASS      |
| ENTEROBACTERIACEAE     | USP 61/62†       | ARIAMX PCR  | 0.32951 CFU/G**   | 100                | BELOW THRESHOLD | PASS      |

† USP 61 (enumeration of bacteria TAC, TYM, and ENT/Coliform), USP 62 (identifying specific species E.coli Aspergillus etc)

\* STEC and Salmonella run as Multiplex

\*\* CFU/g Calculation based on Select Category Type Gummy MIP/Extract Flower matrix

\*\*\* Flavus = 2 Copies of DNA / Fumigatis = 2 Copies of DNA Niger = 20 Copies of DNA / Terrus = 10 copies of DNA

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### Mycotoxin Analysis:

LC-MS - Shimadzu LCMS-8060  
GSL SOP 401

Uploaded: 05/05/2020 15:05:15

| Analyte      | Action Lvl (ppb) | Results (ppb) |
|--------------|------------------|---------------|
| AFLATOXIN B1 | 20               | N/D           |
| AFLATOXIN B2 | 20               | N/D           |
| AFLATOXIN G1 | 20               | N/D           |
| AFLATOXIN G2 | 20               | N/D           |
| OCHRATOXIN A | 20               | N/D           |

LOQ is 4ppb, LOD is 1ppb

### Water Activity:

HD-3A Water Activity Meter - GSL SOP 407

Uploaded: 05/05/2020 16:16:20

#### Water

0.87

### Heavy Metals Analysis:

ICP-MS - Shimadzu ICPMS-2030  
GSL SOP 403

Uploaded: 05/05/2020 16:59:07

| Metal        | Action Level (ppb) | Result (ppb) |
|--------------|--------------------|--------------|
| ARSENIC (AS) | 200                | B/LOQ        |
| CADMIUM (CD) | 200                | B/LOQ        |
| MERCURY (HG) | 100                | B/LOQ        |
| LEAD (PB)    | 500                | B/LOQ        |

Lower Limit of Quantitation (LOQ) is 75 ppb

### Filth and Foreign Materials Analysis:

Microscope - Amscope Simul-Focal Trinocular Stereo Zoom Microscope - GSL SOP 409

Uploaded: 05/05/2020 16:21:43

Pass: No Foreign Materials Detected

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