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CERTIFICATE OF ANALYSIS

Gotu Kola Extract (*Centella asiatica*)

Material Lot #:	20458	Analysis Date:	09/04/2020
Country of Origin:	China	Retesting Date:	09/04/2023
Analysis	Claim	Result	
Triterpenoid Saponins	≥ 70%	76.0%	

Tset	Specification	Result
HPLC Assay		
Asiaticoside	≥ 18%	18.2%
Madecassoside+ Asiaticoside B	≥ 55%	57.1%
ICP-MS		
Arsenic	≤ 1.5 ppm	0.001 ppm
Lead	≤ 0.5 ppm	0.028 ppm
Cadmium	≤ 0.5 ppm	< 0.001 ppm
Mercury	≤ 0.5 ppm	< 0.001 ppm
Total Aerobic Count	< 1000 cfu/g	Conforms
Yeast & Mold	< 100 cfu/g	Conforms
Coliform	< 10 cfu/g	Conforms
<i>E.coli</i>	Negative	Conforms
Salmonella	Negative	Conforms

Gotu Kola Extract should be stored at or below room temperature in a tightly sealed durable container.
Gotu Kola Extract should be protected from excess heat, direct sunlight, excess humidity, and moisture.
Gotu Kola Extract has a retesting period of 3 years from the date of analysis when properly stored.

CERTIFICATE OF ANALYSIS

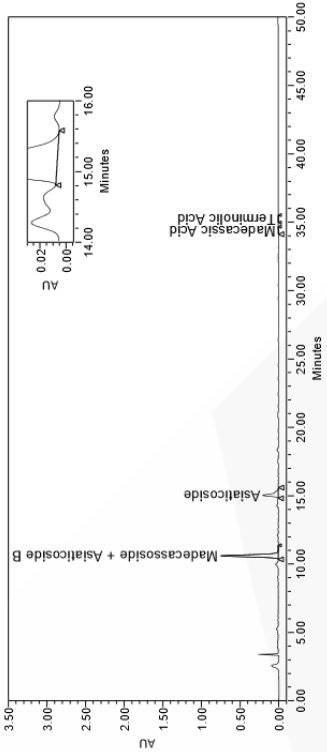


12661 HOOVER STREET GARDEN GROVE, CA 92841 | P. 714-754-4372 | F. 714-668-9972 | WWW.ALKEMIST.COM

Report Issued To: Synaptent
47 W. Polk St.
Chicago Illinois 60605

Sample Name: Gotu Kola Extract
Description: Powdered extract; Foil Pouch
Lot #: 20458
AL #: 20226CEK_2
Analysis ID: 142053
Received: 08/13/20

Determination of Total Triterpene Derivatives by HPLC



Ret. Time (min)	Compound Name	Prep 1 (% as is)	Prep 2 (% as is)	Average (% as is)	Average (% dry basis)	Specification	Result
10.6	Madecassoside+Asiaticoside B	55.603	55.435	55.189	57.118	N/A	N/A
15.0	Asiaticoside	18.148	18.058	18.103	18.624	N/A	N/A
34.4	Madecassoside	0.146	0.129	0.137	0.141	N/A	N/A
35.2	Terminoic acid	0.127	0.129	0.129	0.133	N/A	N/A
45.7	Asiatic acid	N/D	N/D	N/D	N/D	N/A	N/A
Total Triterpene Derivatives		74.023	73.753	73.888	76.0157	Report Only	N/A

Chromatographic Conditions:

Method: USP Powdered Centella asiatica Extract
Column: API38 Zorbax SB-C18 (250 x 4.6 mm)
Temperature: 25°C
Flow Rate: 1.0 mL/min
Injection Volume: 10 µL
UV Detection: 200 nm
Mobile Phase: 0.3% Phosphoric acid in Water
HPLC Instrument: Alliance_4

Sample Preparation:

Weighted 50 mg into a 10 mL volumetric flask, filled to volume with methanol, vortexed for 30 seconds and sonicated for 30 minutes at room temperature. Filtered through a 0.45 µm PTFE syringe filter, discarding the first few mL of filtrate.

Report Summary:

Conclusion: This "Gotu Kola Extract" test sample contains an average of 76% Triterpene derivatives on the dried basis.
OOS Reference: N/A
Loss on Drying: 2.80%
Notebook Reference: LC149 p.138

Analysis Date : 09/04/20 **Analyzed By:** M Edwards

Authorized By: Celine Deneuve
Analytical Chemistry Supervisor

This report applies to the sample investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. This report is for the exclusive use of the party who requested the report and not for public dissemination or use by third parties, including for promotional purposes, without the prior written permission of Alkemist Labs. This report provides technical results for a specific sample and the report shall not be construed as a guarantee of quality or performance. Any violation of these conditions renders the report and its results void.
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Celine Deneuve
Date: 2020.09.04
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Certificate of Analysis

Client:
Synaptent LLC
47 W Polk Street, 100-241
Chicago, IL 60654

Sample Collected By: Client

Product Name	Gotu Kola Extract	Product Lot Number	20458
Report Date	10/06/20	Laboratory Number	20080813

Description	Method	Specification	Results
Lead	ICP-MS	<0.5 ppm	0.028 ppm
Arsenic	ICP-MS	<0.5 ppm	0.001 ppm
Cadmium	ICP-MS	<0.5 ppm	<0.001 ppm
Mercury	ICP-MS	<0.5 ppm	<0.001 ppm
Total Aerobic Count	Biolumix	<1,000 cfu/g	<1,000 cfu/g
Yeast & Mold	Biolumix	<100 cfu/g	<100 cfu/g
E. Coli	Biolumix	Absent	Absent
Coliform	Biolumix	<10 cfu/g	<10 cfu/g
Salmonella	Biolumix	Absent	Absent

Collin Thomas
Laboratory Manager

10/06/2020
Date

The result(s) stated in this report is only for the sample submitted. This report may not be reproduced in whole or in part, nor may any reference be made to the work, the result, or the company in any news release, public announcements or advertising without our prior written consent.

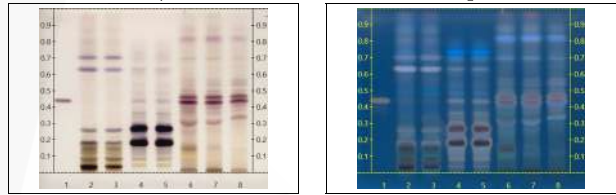
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Certificate Issued To:
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Work performed at:
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Certificate of Analysis: Gotu Kola Extract (20458) High Performance Thin-Layer Chromatography with Photo-Documentation



Company Name: Synaptent
Title: Gotu Kola Extract
Plant Part: entire
Sample Received: 08/13/20
Sample Packaging: Foil Pouch
Form of Botanical: powdered extract
Appearance: Foil Pouch
Lot Number: [20458] → Lanes 4(0.5µl), 5(0.5µl)
Sample: 20226(C)-C1
Latin Name: *Centella asiatica* (L.) Urb. (Apiaceae)
Reference Sample: Lane 2(2µl) [DA20109(CR)] *Centella asiatica* (aerial part); Lane 3(2µl) [DA20909(MRH)] *Centella asiatica* (herb); Lane 4(2µl) [IL21010(CR)] Lane 7(2µl) [IL36110(C)] *Bacopa monnieri* (herb); Held at Alkemist Labs, Garden Grove, CA.
A. Davis, N. Afendikova, M. Edwards, S. Kabbaj, N. Hoang, K. Tran, J. Lopez, J. Moran, 141326
0.3g+3mL 70% grain Ethanol, sonicate/heat at 50° C for 30 min.
Analyt: Sample Preparation: Silica gel 60, HPTLC plates
Stationary Phase: Dichloromethane: Methanol: Water [7/3/0.5]
Mobile Phase: [1] 10% Sulfuric, 100°C, 2min, Vs [Reich, E., 2007]
Detection: [2] 10% Sulfuric, 100°C, 2min, 366nm [Reich, E., 2007]
Reference Standard: Lane 8(2µl) Powdered *Bacopa monnieri* (F0416, USP); Lane 1(2µl) Bacoside A3 [104715052-99002, CER], Methanol
Reference Source: HPTLC Association
ID:501P-7241

Comments & Conclusions: Lanes 4, 5 are the test sample Gotu Kola Extract [20458]. Lanes 2, 3, 6, 7 are the reference samples used for comparison. This test sample, Gotu Kola Extract [20458], is consistent with the chromatographic profile of the reference samples of *Centella asiatica* used above. **This test sample Gotu Kola Extract [20458] indicates the presence of a customized extract derived from *Centella asiatica*.**

NOTE: The above conclusion may be a function of the natural variance found in botanicals &/or the extraction process used to create specific extracts. The growing and drying conditions, age, seasonal variations, geographic location, extraction solvents, etc., all play a role in the phytochemical fingerprint of botanicals as well as their extracts. Hence, chromatographic variations are expected.

Digitally signed by Khanh Tran
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c=US
Date: 2020.08.20 16:19:29 -0700
Adobe Acrobat version:
2020.01.20044

Examined, Reviewed & Authorized by: Khanh N Tran, HPTLC, R&D Supervisor, Alkemist Labs

Report Date: 08/20/20



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Gotu Kola Extract

Main Benefits

- **Gotu Kola (*Centella asiatica*)** is a perennial shrub spread throughout the wetlands and marshes of Asia. It is used traditionally for culinary, medicinal, and cosmetic purposes.
- The primary active compounds are triterpenoid saponins Asiaticoside, Asiaticoside B, and Madecassoside, which are unique to **Gotu Kola**.
- **Gotu Kola** saponins increase GABA and catecholamine neurotransmitter levels. They also enhance expression of BDNF, and act as potent anti-inflammatory.

Main Cautions

- **Gotu Kola Extract** may stress the liver if taken in excess or with hepatotoxic compounds.
- **Gotu Kola Extract** may cause excessive sleepiness if mixed with other sedative supplements or medications. **Do not drink on Gotu Kola Extract.**
- Consult your healthcare provider before use if you have a medical condition or if you are taking any prescription medications.

Usage Tips

- A 0.15cc measuring scoop is included. Two level scoops contains one serving of approximately **100mg Gotu Kola Extract**. As a dietary supplement, take 1 serving up to 3 times per day. Start at the lower suggested quantity to assess response.
- **Gotu Kola Extract** may also have beneficial topical properties for wound healing and anti-aging effects. Its solubility varies across oils.
- Some recommend cycling **Gotu Kola Extract** in 6 week increments for efficacy and to reduce its possible load on the liver.

Usage Tips

- This dietary supplement is not intended to treat, diagnose, prevent, or cure any diseases. Consult your healthcare provider before use if you have a medical condition or if you are taking any prescription medications.
- It is safe to stack **Gotu Kola Extract** with other supplements as long as the amount consumed does not exceed the suggested serving size.
- The benefits of **Gotu Kola Extract** are most effective when they are supported by a healthy diet and plenty of exercise.