

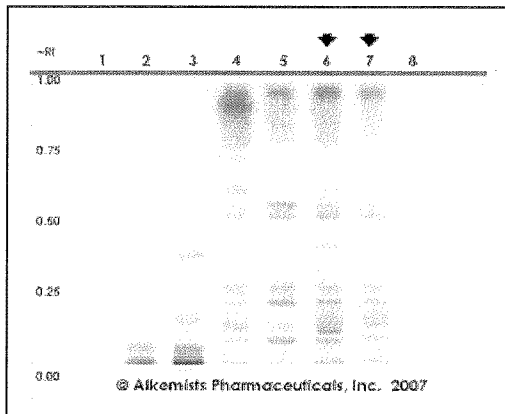
Certificate Issued To:
BI Nutraceuticals
2550 El Presidio St.
Long Beach, CA 90810



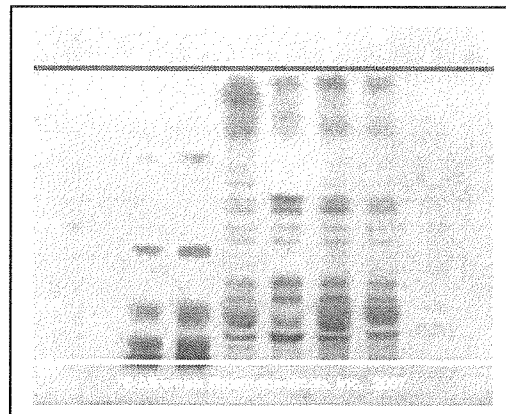
Work performed at:
Alkemists Pharmaceuticals
1260 Logan Ave B3
Costa Mesa, CA 92626
714-754-HERB (4372)
714-668-9972 (FAX)
E-mail: info@alkemist.com
Web Site: www.alkemist.com

Certificate of Analysis 1 of 3: Hoodia (PS35-203)
High Performance Thin-Layer Chromatography with Photo-Documentation

1



2



Company Name: BI Nutraceuticals
Title: Hoodia
Plant Part: aerial part
Sample Received: 2/15/2007
Sample Description: ~12.5g in a roll down bag
Form of Botanical: crude plant powder
Appearance: tan powder with speckles
Source: N/A
Lot #: (PS35-203) → Lanes 6(6µl), 7(3µl)
Sample #: AU04607BIN
Latin Name: Hoodia gordonii (Masson) Sweet ex Decne
Reference Sample #: Lane 4(5µl) (AU29006TA2) (aerial part); Lane 5(5µl) (AU21906DBL) (aerial part) Hoodia gordonii authenticated by macroscopic, microscopic &/or TLC studies according to the reference source cited below, and matching the voucher specimen (AU20604AP) held at Alkemists Pharmaceuticals, Costa Mesa, CA.
Examiner: SSS 3899
Sample Prep: 0.2 g + 4ml CH₃OH sonicated + heated in a dry block incubator @ 65° C ~ 1 hr.
Stationary Phase: Silica gel 60, F₂₅₄, 10 x 10 cm HPTLC plates
Mobile Phase: ethyl acetate: methanol: water [7.7/1.7/1]
Detection: (1) Vanillin/H₂SO₄ Reagent → 110° C 5 min → visible light
(2) Vanillin/H₂SO₄ Reagent → 110° C 5 min → UV 365 nm
Reference Std: Lanes 1(3µl) and 8(3µl) Aescin (93H1029, Sigma-Aldrich) ~0.1% in CH₃OH
Reference Source: Method Developed by Alkemists Pharmaceuticals

Comments & Conclusions: Yellow line = sample origin @ 10mm, red line = solvent front @ 70mm. Lanes 6, 7 are the test sample Hoodia (PS35-203). Lanes 4, 5 are the authenticated reference samples used for comparison.

This test sample, Hoodia (PS35-203), is consistent with the chromatographic profile of the reference samples of Hoodia gordonii used above & is characteristic of Hoodia gordonii aerial part.

Authorized by: Sidney Sudberg, Director, Alkemists Pharmaceuticals

Report Date: 2/23/2007

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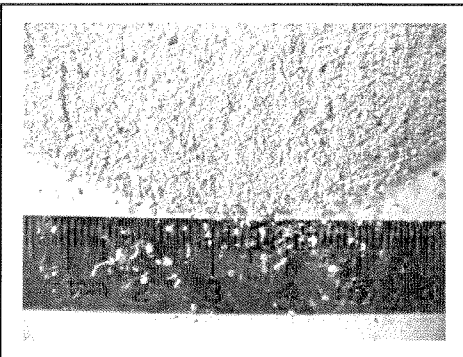


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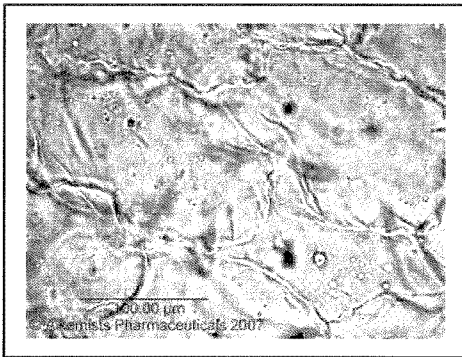
Certificate of Analysis 3 of 3: Hoodia (PS35-203)

Macroscopy & Microscopy with Digital Photo-Documentation

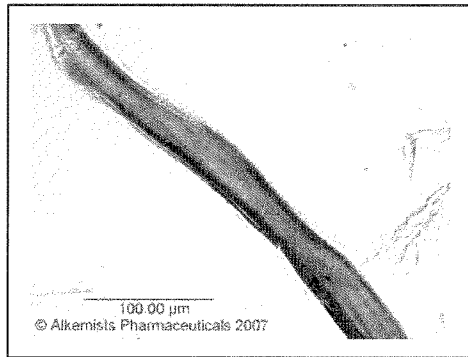
1



2



3



Company Name:	BI Nutraceuticals
Title:	Hoodia
Plant Part:	aerial part
Sample Received:	2/15/2007
Sample Description:	~12.5g in a roll down bag
Form of Botanical:	crude plant powder
Appearance:	(1) tan powder with speckles
Lot #:	PS35-203
Sample #:	AU04607BIN
Latin Name:	Hoodia gordonii (Masson) Sweet ex Decne
Reference Sample #:	AU21906DBL, AU29006TA2, AU20604AP, AU15606AHP2, AU30405TA1 Hoodia gordonii (Masson) Sweet ex Decne authenticated by macroscopic, microscopic &/or TLC studies according to the reference source cited below held at Alkemists Pharmaceuticals, Costa Mesa, CA.
Examiner:	EMS
Magnification:	(2) 400X
Chemical Reagents:	(2) acidified chloral hydrate glycerol solution
Sample Findings:	(2) large thin walled parenchyma showing wrinkled cell walls
Magnification:	(2) 400X
Chemical Reagents:	(3) acidified chloral hydrate glycerol solution
Sample Findings:	(3) fiber showing whirled striations
Reference Source:	Method Developed by Alkemists Pharmaceuticals USP-PF, Vol. 27(2) [Mar.-Apr. 2001]; Official Methods of Analysis of AOAC, 16 th Ed.

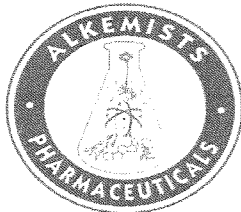
Comments & Conclusions:

This sample is representative of Hoodia gordonii aerial part based on authenticated reference samples and the consistent characteristic cellular structure of an aerial part as well as the reference cited above. The characteristic cellular structures identified in this sample are the large thin walled parenchyma showing wrinkled cell walls seen in micrograph (2) above. In micrograph (3) we see the fiber showing whirled striations. **This test sample, Hoodia (PS35-203), is consistent with the microscopic characteristics of the reference samples of Hoodia gordonii used above & is characteristic of Hoodia gordonii aerial part.**

Analyzed by: Élan M Sudberg
Authorized by: Sidney Sudberg, Director, Alkemists Pharmaceuticals

Report Date: 2/23/2007

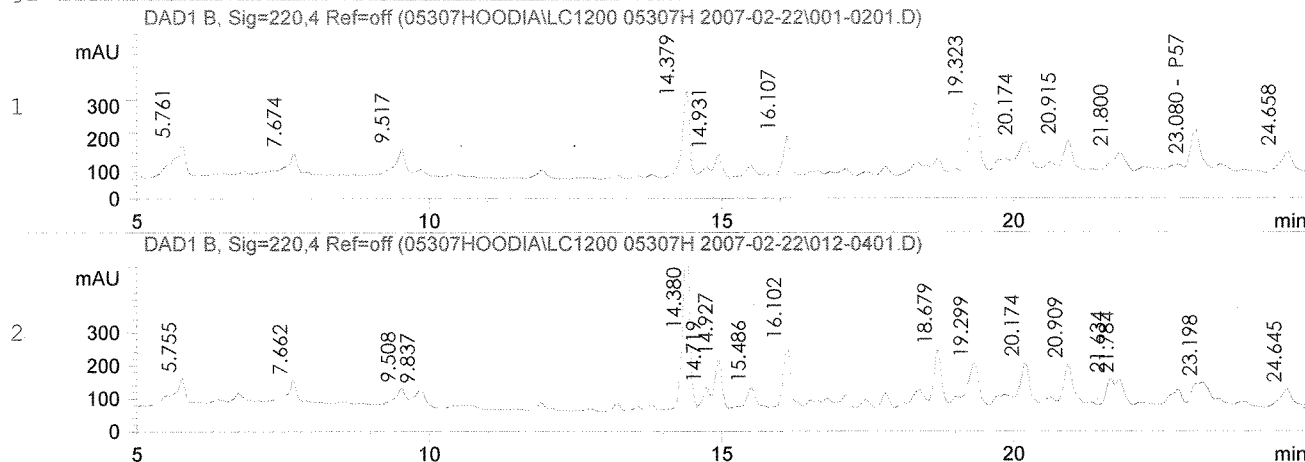
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****CERTIFICATE OF ANALYSIS 2 of 3****

Fingerprint analysis of Hoodia gordonii for identity & purity

High Performance Liquid Chromatography with Diode Array Detection



1-Chromatogram of Reference Material: Hoodia gordonii aerial parts - Voucher specimen from South Africa, Grid:3320CA - Ernst van Jaarsveld #19891, AP # AU29006TA2

2-Chromatogram of Test Sample: Hoodia gordonii - Crude plant powder - Lot #PS35-203, AP #AU04607BIN

Reference analyte: steroidal glycoside P57 - Source: Univ. of Mississippi, Lot#07/17/06

Ret. Time	Compound Name	w/w %
23.08	P57	0.25



Chromatographic Conditions:

References : I.Khan et al., Journal of AOAC Int'l, Vol 89, No 3, p 606, 2006
Method : Hoodia_AOAC.M
Sequence : 05307H.S
HPLC Column : Gemini 5µ C18 150 X 4.6mm
Flow Rate : 1.0 mL/min
Injection : 25 µL
Column Temp : 35° C
UV Detection : 220nm

Mobile Phase C: Water + 0.1% Acetic acid
Mobile Phase D: ACN + 0.1% Acetic Acid
Gradient: Time C D
t=0 80% 20%
t=35min - 100%

Sample Preparation: 0.2g of test sample + 4.0 mL MeOH sonicated for 30 min, heated for 1h @ 60C in a dry block incubator then filtered into HPLC vial.

Conclusion: Chromatogram #2 (test sample) is consistent with chromatographic fingerprint #1 (voucher specimen). Analyte P57 which is used as the marker compound to assess identity and quality of Hoodia gordonii can be detected.

Analysis Date:2/22/2007 Analyzed by C.Ventre,PhD Authorized by S.Sudberg, Director

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