

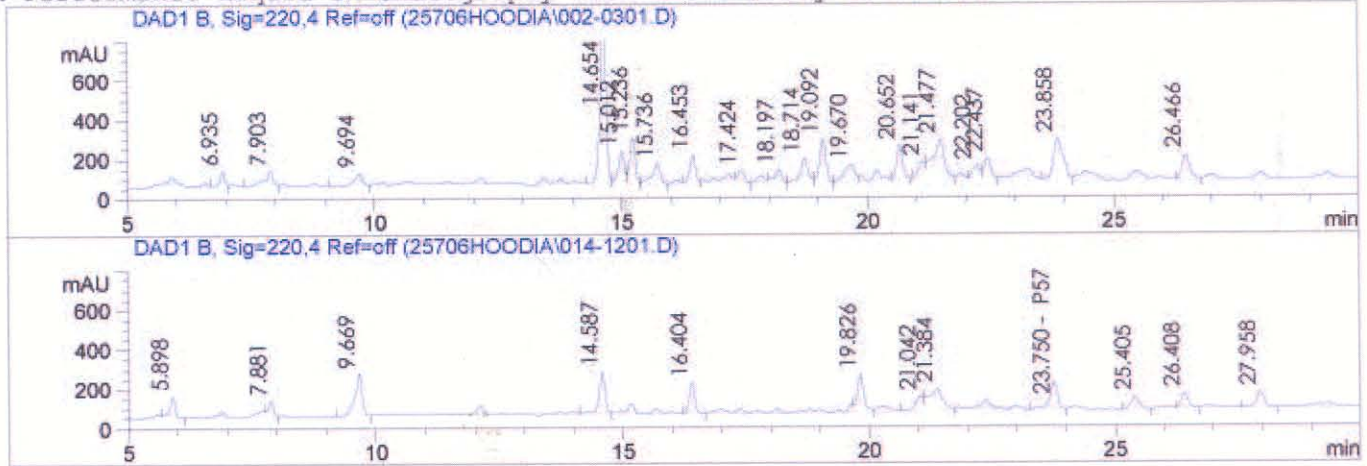


Alkemists Pharmaceuticals, Inc.
 Natural Product Consulting
 and Quality Control
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 714-754-HERB (4372)
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****CERTIFICATE OF ANALYSIS 2 of 2****

**Fingerprint Analysis of Hoodia Species for Identity & Purity.
 Determination of Relative P57 Content**

High Performance Liquid Chromatography with Diode Array Detection

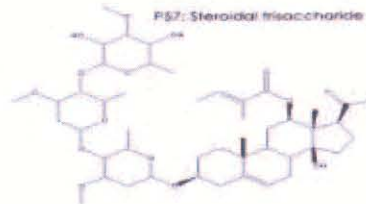


1- Chromatogram of Reference material: Hoodia gordonii aerial parts - Voucher specimen WIND 50986.0, AP #AU21906DBL

2- Chromatogram of Test sample: Hoodia gordonii crude plant powder- Lot #Hg2006/08/13-004, AP# AU25406TA4

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

Ret. Time	Compound Name	weight %
23.750	P57	0.28



Chromatographic Conditions:

Method : Hoodia_AOAC.M
 Sequence : 25706Hoodia.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 A: Water + 0.1% Acetic acid
 Mobile Phase B: ACN + 0.1% Acetic Acid
 Gradient: t=0 80% A 20% B
 t=35min 100% B

Sample Preparation: ~0.2g of test sample + 4.0 mL MeOH sonicated for 30 min, heated for 20 min in a dry block incubator then filtered into HPLC vial.

References: I.Khan et al., Journal of AOAC Int'l, Vol 89, No 3, p 606, 2006

Conclusion: Chromatogram #2 (test sample) is consistent with chromatographic fingerprint #1 (voucher specimen of Hoodia gordonii). Reference analyte P57 can be detected in the test sample.

Analysis Date: 9/15/2006 Analyzed by: SS/CV Authorized by: S. Sudberg, Director

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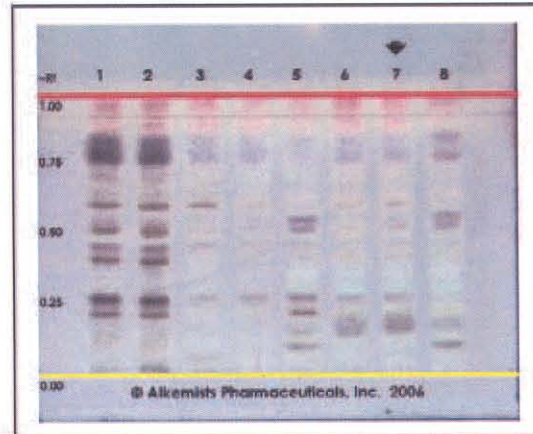
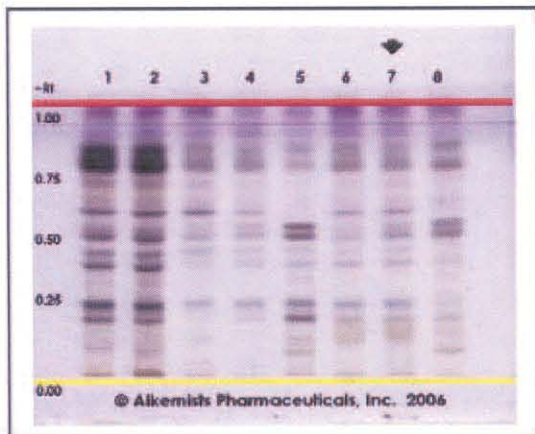


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Certificate of Analysis 1 of 3: Hoodia (Hg2006/08/13-005)
High Performance Thin-Layer Chromatography with Photo-Documentation

1

2



Company Name: Hoodia
 Title: aerial part
 Plant Part: 9/11/2006
 Sample Received: ~26g in a zip lock bag
 Sample Description: crude plant powder
 Form of Botanical: beige powder with dark speckles
 Appearance: N/A
 Source: (Hg2006/08/13-005) → Lane 7(3µl)
 Lot #: AU25406TA5
 Sample #: Hoodia gordonii (Masson) Sweet ex Decne
 Latin Name: Lane 4(3µl) (AU14206TA1) Hoodia gordonii (aerial part); Lane 5(3µl) (AU21906DBL) Hoodia gordonii (aerial part); Lane 8(3µl) (AFH15606AHP) Hoodia currorii (aerial part)
 Reference Sample #: 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
 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
 Method Developed by Alkemists Pharmaceuticals

Comments & Conclusions: Yellow line = sample origin @ 10mm, red line = solvent front @ 60mm. Lane 7 is the test sample Hoodia (Hg2006/08/13-005). Lanes 4, 5, 8 are the authenticated reference samples used for comparison. **This test sample, Hoodia (Hg2006/08/13-005), is characteristic of Hoodia gordonii & is consistent with the chromatographic profile of the reference samples of Hoodia gordonii used above.**

Authorized by: Sidney Sudberg, Director, Alkemists Pharmaceuticals

Report Date: 9/18/2006

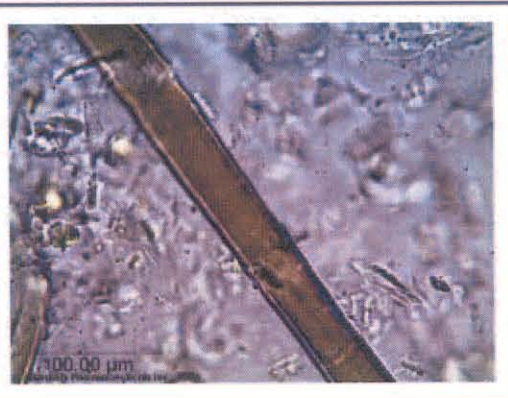
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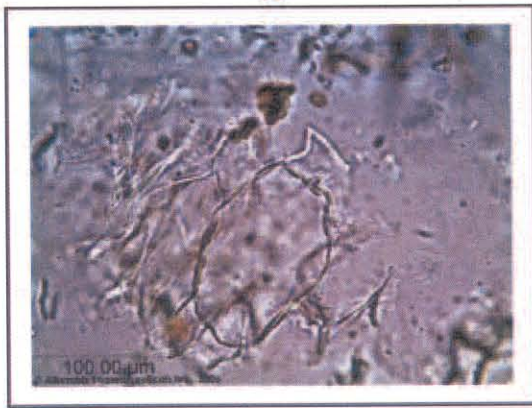
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Certificate of Analysis 3 of 3: Hoodia (Hg2006/08/13-004)
Microscopy with Digital Photo-Documentation

1



2



Company Name: Hoodia
 Title: aerial part
 Plant Part: ~23g In a zip lock bag
 Sample Received: N/A
 Sample Description: crude plant powder
 Source: beige powder with dark speckles
 Form of Botanical: Hg2006/08/13-004
 Appearance: AU25406TA4
 Lot #: Voucher Specimen AU20604AP; AU19106TA6; AU15606AHP2; AU19004PHX, AU11004CHR, AU02006NW, AU11805MHS1 Hoodia gordonii (Masson) Sweet ex Decne authenticated by macroscopic, microscopic &/or TLC studies according to the reference source cited below
 Sample #: held at Alkemists Pharmaceuticals, Costa Mesa, CA.
 Reference Sample #: Hoodia gordonii (Masson) Sweet ex Decne

Latin Name: EMS
 Examiner: (1) 400X
 Magnification: (1) acidified chloral hydrate glycerol solution
 Chemical Reagents: (1) fragment of a fiber showing whirled striations
 Sample Findings: (2) 400X
 Magnification: (2) acidified chloral hydrate glycerol solution
 Chemical Reagents: (2) large thin walled parenchyma with wrinkled cell walls
 Sample Findings: Method Developed by Alkemists Pharmaceuticals
 Reference Source: USP-PF, Vol. 27(2) [Mar.-Apr. 2001]; Official Methods of Analysis of AOAC, 16th Ed.

Comments & Conclusions:

This sample is representative of Hoodia gordonii aerial part based on authenticated microscopic references 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 fragment of a fiber showing whirled striations seen in micrograph (1) above & in micrograph (2) we see the large thin walled parenchyma with wrinkled cell walls. **This test sample, Hoodia (Hg2006/08/13-004), is characteristic of Hoodia gordonii & is consistent with the microscopic characteristics of the reference samples of Hoodia gordonii used above.**

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

Report Date: 9/18/2006

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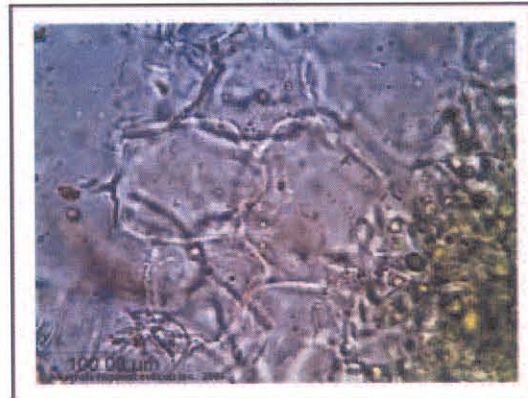
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Certificate of Analysis 3 of 3: Hoodia (Hg2006/08/13-005)
Microscopy with Digital Photo-Documentation

1



2



Company Name: Hoodia
 Title: aerial part
 Plant Part: 9/11/2006
 Sample Received: ~26g In a zip lock bag
 Sample Description: N/A
 Source: crude plant powder
 Form of Botanical: beige powder with dark speckles
 Appearance: Hg2006/08/13-005
 Lot #: AU25406TA5
 Sample #: Voucher Specimen AU20604AP; AU19106TA6; AU15606AHP2; AU19004PHX, AU1004CHR, AU02006NW, AU11805MHS1 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.
 Reference Sample #: Hoodia gordonii (Masson) Sweet ex Decne
 Latin Name: EMS
 Examiner: (1) 400X
 Magnification: (1) acidified chloral hydrate glycerol solution
 Chemical Reagents: (1) fragment of a fiber showing whirled striations
 Sample Findings: (2) 400X
 Magnification: (2) acidified chloral hydrate glycerol solution
 Chemical Reagents: (2) large thin walled parenchyma with wrinkled cell walls
 Sample Findings: Method Developed by Alkemists Pharmaceuticals
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Analyzed by: Élan M Sudberg

Authorized by: Sidney Sudberg, Director, Alkemists Pharmaceuticals

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