

Composite Reference Botanical:

***Dioscorea oppositifolia* L. [Dioscoreaceae] root**
Macroscopy, Microscopy & High Performance Thin-Layer
Chromatography with Digital Photo-Documentation and
Full Method Disclosure



Work performed at:

Alkemist Lab

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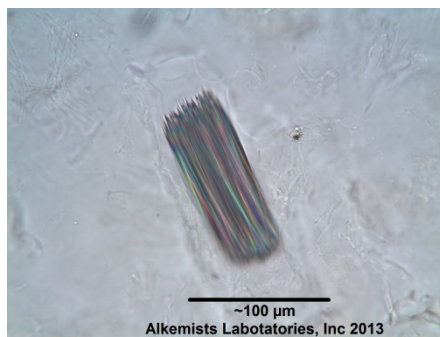
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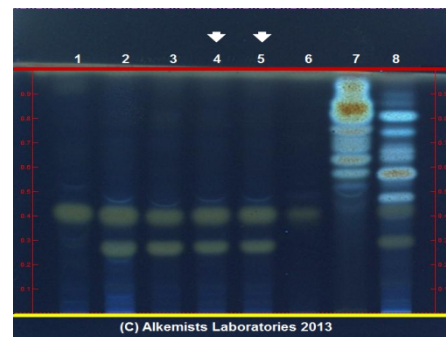
1



2



3



Title: Chinese Yam
Plant Part: root
Sample Received: 06/01/09
Sample Description: ~10 grams in a zip lock bag
Form of Botanical: dried slices of root
Appearance: (1) thin slices of tan root
CRB Lot #: NQ15209CRB → Lanes 4 & 5(3µl) composed of samples from lanes 1 & 2
Latin Name: *Dioscorea oppositifolia* L. [Dioscoreaceae]
Reference Sample : Lane 1(3µl) (NQ28406MYWY) *Dioscorea oppositifolia*; Lane 2(3µl) (NQ30005SWH) *Dioscorea oppositifolia* (root); Lane 3(3µl) (NQ19106AP) *Dioscorea oppositifolia* (root); Lane 6(3µl) (NQ32810BIN) *Dioscorea oppositifolia* (root); Lane 7(3µl) (MY13909BIN) *Dioscorea composita*; Lane 8(3µl) (AB32404JD) *Dioscorea villosa*; authenticated by macroscopic, microscopic &/or TLC studies according to the reference sources cited below held at Alkemists Laboratories, Costa Mesa, CA.

Analyst: EMS, JN, ML, JK, HT 39491
Magnification: (2) 400X
Chemical Reagents: (2) acidified chloral hydrate glycerol solution
Sample Findings: (2) an idioblast containing large raphides of calcium oxalate (not shown but of significance are the parenchyma cells packed with large granules of starch (best seen before light boil)
Sample Prep: (3) 0.3g+3mL 70% grain EtOH sonicate/heat @~50° C ~ 1/2 hr
Stationary Phase: (3) Silica gel 60, F₂₅₄, 10 x 10 cm HPTLC plates
Mobile Phase: (3) CHCl₃: CH₃OH: H₂O [6.4/5/1]
Detection: (3) (1) Vanillin/H₂SO₄ Reagent → 110° C 5 min → UV 365 nm
Reference Source: HPTLC: SOP-700-0001-R3
Microscopy: An Illustrated Handbook on Microscopic Identification of Chinese Crude Drugs for Chinese Pharmacopoeia, Zhou, F., 2008 SOP-1000-0001-R1
USP-PF, Vol. 27(2) [Mar.-Apr. 2001]; Official Methods of Analysis of AOAC, 16th Ed.

Comments & Conclusions:

This sample is a composite of multiple sources of *Dioscorea oppositifolia* L. [Dioscoreaceae] root based on authenticated reference samples and the consistent characteristic cellular structure of a root as well as the consistent chromatographic profile/fingerprint. As per the references cited above & the reference samples used for comparison, **this test sample is a representative reference sample of *Dioscorea oppositifolia* L. [Dioscoreaceae] root.**

Analyzed by: EMS & SS

Examined, Reviewed & Authorized by: Sidney Sudberg, CSO, Alkemist Labs

Analysis Date: 12/04/13

Report Date: 12/04/13

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