

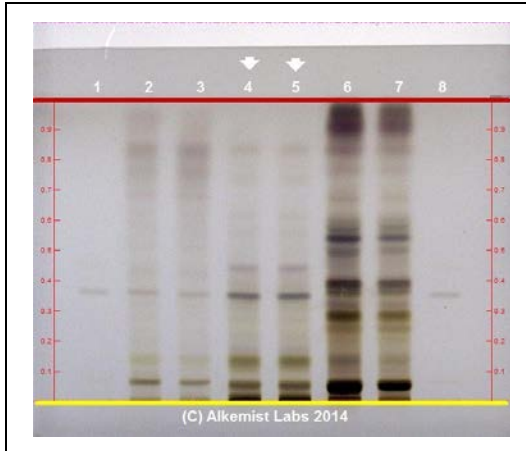
Certificate Issued To:
Superman Herbs
118 Annie Lane Suite A
Santa Cruz, CA 95060
USA



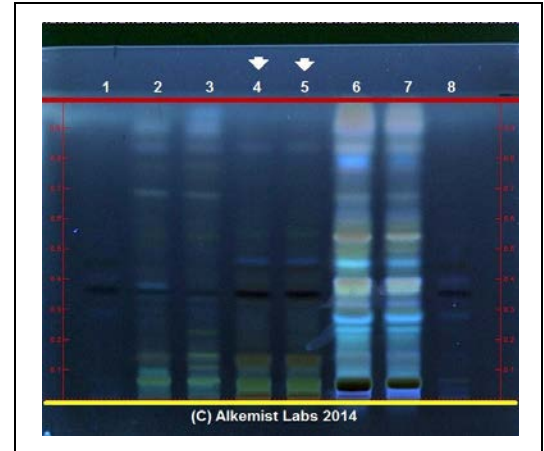
Work performed at:
Alkemist Labs
1260 Logan Ave B2
Costa Mesa, CA 92626
714-754-HERB (4372)
714-668-9972 (FAX)
E-mail: sales@alkemist.com
Web Site: www.alkemist.com

Certificate of Analysis: Eleuthero (16)
High Performance Thin-Layer Chromatography with Photo-Documentation

1



2



Company Name: Superman Herbs
Title: Eleuthero
Plant Part: root
Sample Received: 5/16/2014
Sample Description: Clear Reclosable Plastic Bag
Form of Botanical: powdered extract
Appearance: Brown fine powder
Lot : (16) → Lanes 4(3µl), 5(3µl)
Sample : NF13614SUP1_1
Latin Name: Eleutherococcus senticosus (Rupr. & Maxim.) Maxim. [Araliaceae]
Reference Sample : Lane 2(4µl) (NF22509PB) Eleutherococcus senticosus (root); Lane 3(4µl) (NF21809MBS) Eleutherococcus senticosus (root); Lanes 6(4µl), 7(2µl) (VP24601AHP) Periploca sepium (root bark); authenticated by macroscopic, microscopic &/or TLC studies according to the reference source cited below, held at Alkemist Labs, Costa Mesa, CA.
Analyst: JN, ML, JK, CB 45190
Sample Prep: 0.3g+3mL 70% grain EtOH sonicate/heat @-50° C ~ 1/2 hr
Stationary Phase: Silica gel 60, F₂₅₄, 10 x 10 cm HPTLC plates
Mobile Phase: CHCl₃: CH₃OH: H₂O [7/3/0.4]
Detection: (1) 10% Ethanolic H₂SO₄ → 120° C 10 min → visible light
(2) 10% Ethanolic H₂SO₄ → 120° C 10 min → UV 365 nm
Reference Std: Lanes 1(6µl) and 8(6µl) Eleutheroside B (00005060-004, CHR), Eleutheroside E (00005065-004, CHR), ~0.1% in CH₃OH (52166, EMD)
Reference Source: Method Developed by Alkemists Laboratories
SOP-700-0001-R3

Comments & Conclusions: Yellow line = sample origin @ 10mm, red line = solvent front @ 70mm. Lanes 4, 5 are the test sample Eleuthero (16). Lanes 2, 3, 6, 7 are the authenticated reference samples used for comparison. **This test sample, Eleuthero (16), is consistent with the chromatographic profile of the reference samples of Eleutherococcus senticosus (Rupr. & Maxim.) Maxim. [Araliaceae], used above. This test sample, Eleuthero (16) has characteristics of an extract derived from Eleutherococcus senticosus (Rupr. & Maxim.) Maxim. [Araliaceae] root.**

NOTE: The above conclusion may be a function of the natural variance found in botanicals. The growing and drying conditions, age, seasonal variations, etc. all play a role in the phytochemical fingerprint of botanicals and variations are expected.

Examined, Reviewed & Authorized by: Sandy Sudberg, Administrative Supervisor, Alkemist Labs

Report Date: 5/22/2014

Note: Any unidentified lanes in the above chromatograms are confidential and may represent internal studies or other test samples not related to 16.

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