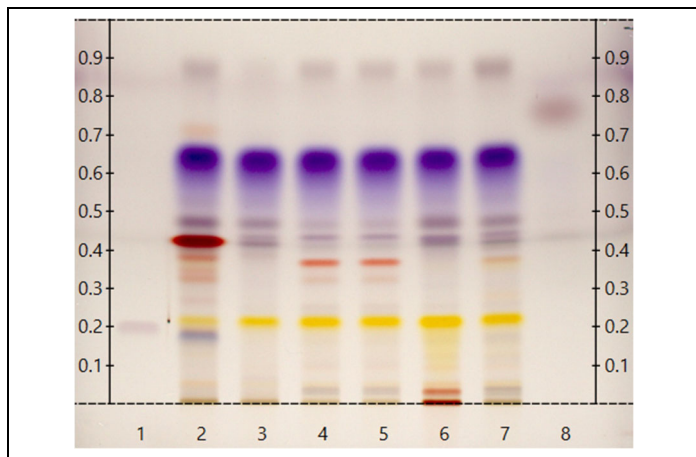


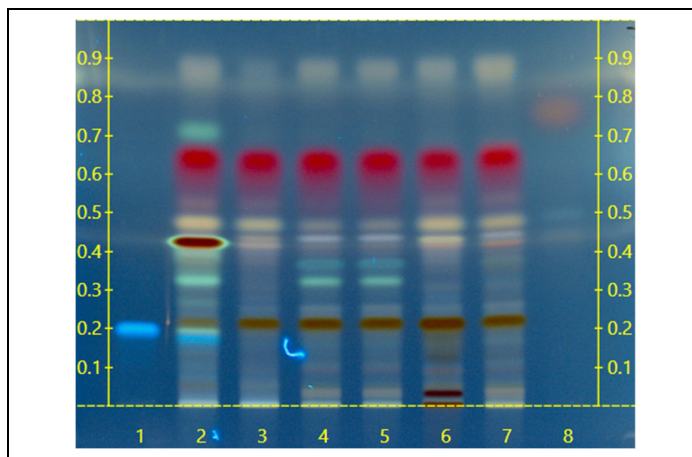


Certificate of Analysis: Usnea (26182-T)
High Performance Thin-Layer Chromatography with Photo-Documentation

1



2



Company Name: Mountain Rose Herbs
Title: Usnea
Plant Part: entire
Sample Received: 04/28/21
Sample Packaging: Clear Reclosable Plastic Bag
Form of Botanical: whole/dry
Appearance: Green/tan stringy lichen
Source Location: Mountain Rose Herbs
Lot Number: (26182-T) → Lanes 4(3µl), 5(3µl)
Sample: 21118KSG_2
Latin Name: Usnea sp.
Reference Sample: Lane 2(3µl) (JE18007BSI2) Usnea sp. (herb); Lane 3(3µl) (JE36508BH) Usnea sp. (na); Lane 6(3µl) (JE09314GDH1) Usnea sp. (entire); Lane 7(3µl) (20181YPU) Usnea barbata (entire); held at Alkemist Labs, Garden Grove, CA.
Analyst: A. Davis, N. Afendikova, M. Edwards, S. Kabbaj, N. Hoang, K. Tran, J. Lopez, J. Mares 154784
Sample Preparation: 0.3g+3mL Methanol, sonicate/heat at 50°C for 30 min.
Stationary Phase: Silica gel 60, HPTLC plates
Mobile Phase: toluene: Acetic Acid: Methanol: acetone [8/1/0.5/0.5]
Detection: (1) Vanillin/Sulfuric, 110°C, 2min, vis (Reich, E., 2007)
(2) Vanillin/Sulfuric, 110°C, 2min, 366nm (Reich, E., 2007)
Reference Standard: Lane 8(2µl) t-Anethole (MARMK, TCI), Methanol (0000253754, VWR); Lane 1(1µl) Caffeic acid (02 1117/0, XSYN), Methanol (0000246367, VWR)
Reference Source: European Pharmacopoeia 5.0 2005
IDT-SOP-72-01

Comments & Conclusions: Lanes 4, 5 are the test sample Usnea (26182-T). Lanes 2, 3, 6, 7, are the reference samples used for comparison. This test sample, Usnea (26182-T) is consistent with the chromatographic profile of the reference samples of *Usnea* sp., used above. **This test sample Usnea (26182-T) has characteristics of *Usnea* sp. entire.**

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.

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

Report Date: 05/04/21

ISO/IEC 17025



Note: Any unidentified lanes in the above chromatograms are confidential and may represent internal studies or other test samples not related to 26182-T. 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, Inc. This report provides technical results for a specific sample and the report shall not be altered, modified, supplemented or abstracted in any manner. Any violation of these conditions renders the report and its results void. © 2021 Alkemist Labs, Inc. All Rights Reserved