

Certificate Issued To:  
Trout Lake Farm  
180 Airport St NE  
Ephrata, WA 98823  
USA



Work performed at:  
**Alkemist Labs**  
12661 Hoover Street  
Garden Grove, CA 92841  
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**Certificate of Analysis: ECHINACEA ANGUSTIFOLIA HERB (EAH-E1 (2019))**  
Microscopy with Digital Photo-Documentation

1



2



3



Company Name: Trout Lake Farm  
Title: ECHINACEA ANGUSTIFOLIA HERB  
Plant Part: leaf  
Sample Received: 8/8/2019  
Sample Description: Clear Whirl-Pak  
Form of Botanical: cut and sifted  
Appearance: (1) Green cut and sifted leaves  
Lot : EAH-E1 (2019)  
Sample : 19220RVX\_2  
Latin Name: Echinacea angustifolia DC. [Asteraceae]  
Reference Sample : DG16714AHP7 Echinacea angustifolia DC. [Asteraceae] authenticated by macroscopic, microscopic &/or TLC studies according to the reference sources cited below; held at Alkemist Labs, Garden Grove, CA.  
Analyst: E. Sudberg & P. Fast  
Magnification: (2) 400X  
Chemical Reagents: (2) acidified chloral hydrate glycerol solution  
Sample Findings: (2) rosette-like epidermal cells around the base of a broken covering trichome  
Magnification: (3) 400X  
Chemical Reagents: (3) acidified chloral hydrate glycerol solution  
Sample Findings: (3) spheroidal pollen grains with a spiny exine  
Reference Source: British Pharmacopoeia, 2019; Microscopic Characterization of Botanical Medicines, Upton, R., 2011; AHP Monograph: Echinacea angustifolia root  
MIC-SOP-54-04, MIC-SOP-54-05, MIC-SOP-54-06, MIC-SOP-510-07

**Comments & Conclusions:** This sample has characteristics of Echinacea angustifolia DC. [Asteraceae] aerial parts based on comparison with an authenticated reference sample and the characteristics described in the references cited above. The characteristic cellular structures identified in this sample are the rosette-like epidermal cells around the base of a broken covering trichome seen in micrograph (2) above. In micrograph (3) we see the spheroidal pollen grains with a spiny exine. **This test sample, ECHINACEA ANGUSTIFOLIA HERB (EAH-E1 (2019)), has characteristics of Echinacea angustifolia DC. [Asteraceae] aerial parts.**

**NOTE:** Due to similarities in the microscopic features of aerial parts of different species in the Genus Echinacea, further testing by HPTLC is recommended. The presence of soluble excipients and other plant species material was not detected in this test sample.

Analyzed by: Patrick Fast

Examined, Reviewed & Authorized by: Élan M Sudberg, CEO

Report Date: 8/12/2019



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