

CERTIFICATE OF ANALYSIS

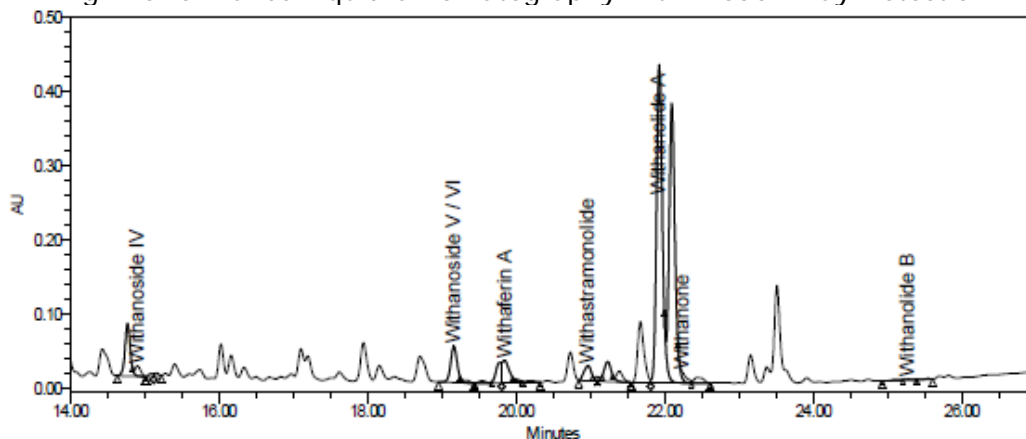


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Report Issued To: Lost Empire Herbs
2825 S. Rodeo Gulch Rd #12
Soquel CA 95073

Sample Name: Ashwagandha Tincture
Description: Liquid extract; Liquid in Light Sensitive Glass Bottle
Lot #: AT1101
AL #: JAY01017SUP1_1
Analysis ID: 80195
Received: 01/10/17

Determination of Withanolides Content in Ashwagandha Root Extract High Performance Liquid Chromatography with Diode Array Detection



Ret. Time (min)	Compound Name	Amount (µg/mL)	Specification	Result
14.9	Withanoside IV	8.1244		
19.2	Withanoside V & VI	36.6535		
19.9	Withaferin A	8.5931		
20.9	Withastramonolide	5.7553		
21.9	Withanolide A	94.1985		
22.3	Withanone	5.2033		
25.3	Withanolide B	0.2371		
	Total	158.7652	No specification	N/A

Chromatographic Conditions:

Method: USP 39 - Powdered Ashwagandha Root Extract
The analytical method used has not been verified or validated for this product by Alkemists Labs.
Column: AP143 Luna 5µ C18 (2) 100A (250 x 4.6 mm)
Temperature: 27°C
Flow Rate: 1.5 mL/min
Injection Volume: 20 µL
UV Detection: 227 nm
Mobile Phase: 1 mM Phosphate Buffer in 0.05% H3PO4
Acetonitrile
HPLC Instrument: Alliance_3

Sample Preparation:

Transferred 3 mL of sample into 5 mL low-actinic volumetric flask. Heated on a water bath at 45°C for 15 minutes. Filtered through 0.45 µm PTFE filter into HPLC vial for analysis.

Report Summary:

Conclusion: This "Ashwagandha tincture" sample contains 159 µg/mL total withanolides.
OOS Reference: N/A
Notebook Reference: LC086 p. 168

Analysis Date : 01/26/17 **Analyzed By:** E Luo

Authorized By: Holly E. Johnson, Ph.D.,
Laboratory Director