CERTIFICATE OF ANALYSIS

ALKEMIST LABS

12661 HOOVER STREET. GARDEN GROVE, CA 92841 | P. 714-754-4372 | F. 714-668-9972 | WWW.ALKEMIST.COM

Report Issued To: Lost Empire Herbs
8301 NW 101st Ter.
Kansas City MO 64153-2321
Untied States

Sample Name: Maca
Description: Powdered extract; Fine tan powder
Lot #: BMACA26MAR24
AL #: 24092HWB_1
Analysis ID: 225858
Received: 04/01/24

Determination of Pesticide Content by USP <561>

Compound Name	Amount (mg/kg)	USP <561> Limit (mg/kg)	Result
Acephate*	<0.1	0.1	Pass
Alachlor **	<0.05	0.05	Pass
Aldrin and Dieldrin (sum of) **	<0.05	0.05	Pass
Azinphos Ethyl *	<0.1	0.1	Pass
Azinphos Methyl *	<1	1	Pass
Bromophos Ethyl **	<0.05	0.05	Pass
Bromophos Methyl **	<0.05	0.05	Pass
Bromopropylate **	<3	3	Pass
Chlordane (sum of *cis*-, *trans*-, and oxychlordane) **	<0.05	0.05	Pass
Chlorfenvinphos **	<0.5	0.5	Pass
Chlorpyriphos Ethyl **	<0.2	0.2	Pass
Chlorpyriphos Methyl **	<0.1	0.1	Pass
Chlorthal Dimethyl **	<0.01	0.01	Pass
Cyfluthrin (sum of) **	<0.1	0.1	Pass
λ-Cyhalothrin **	<1	1	Pass
Cypermethrin and isomers (sum of) **	<1	1	Pass
DDT (sum of *o,p'*-DDE, *p,p'*-DDE, *o,p'*-DDT, *p,p'*-DDT, *o,p'*-TDE, and *p,p'*-TDE) **	<1	1	Pass
Deltamethrin *	<0.5	0.5	Pass
Diazinon *	<0.5	0.5	Pass
Dichlofluanid *	<0.1	0.1	Pass
Dichlorvos *	<1	1	Pass
Dicofol **	<0.5	0.5	Pass
Dimethoate and omethoate (sum of) *	<0.1	0.1	Pass
Endosulfan (sum of isomers and endosulfan sulphate) **	<3	3	Pass
Endrin **	<0.05	0.05	Pass
Ethion *	<2	2	Pass
Etrimphos *	<0.05	0.05	Pass
Fenchlorophos (sum of fenchlorophos and fenchlorophos-oxon) **	<0.1	0.1	Pass
Fenitrothion **	<0.5	0.5	Pass
Fenpropathrin *	<0.03	0.03	Pass
Fensulfothion (sum of fensulfothion, fensulfothion-oxon, fensulfothion-oxon sulfone, and fensulfothion sulfone) *	<0.05	0.05	Pass
Fenthion (sum of fenthion, fenthion-oxon, fenthion-oxon sulfone, fenthion-oxon sulfoxide, fenthion sulfone, and fenthion-sulfoxide) *	<0.05	0.05	Pass
Fenvalerate **	<1.5	1.5	Pass
Flucythrinate **	<0.05	0.05	Pass
τ-Fluvalinate **	<0.05	0.05	Pass
Fonophos *	<0.05	0.05	Pass
Heptachlor (sum of heptachlor, *cis*-heptachlorepoxide, and *trans*-heptachlorepoxide) **	<0.05	0.05	Pass
Hexachlorobenzene **	<0.1	0.1	Pass
Hexachlorocyclohexane (sum of isomers α-, β-, δ-, and ε-) **	<0.3	0.3	Pass
Lindan (γ-hexachlorocyclohexane) **	<0.6	0.6	Pass
Malathion and malaoxon (sum of) *	<1	1	Pass
Mecarbam *	<0.05	0.05	Pass
Methacriphos *	<0.05	0.05	Pass
Methamidophos *	<0.05	0.05	Pass
Methidathion *	<0.2	0.2	Pass
Methoxychlor **	<0.05	0.05	Pass

Analysis Date: 04/08/24 **Analyzed By: L Brown**

Authorized By: Torey French, R&D Analytical Chemist

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Compound Name	Amount (mg/kg)	USP <561> Limit (mg/kg)	Result
Mirex **	<0.01	0.01	Pass
Monocrotophos *	<0.1	0.1	Pass
Parathion-ethyl and paraoxon-ethyl (sum of) *	<0.5	0.5	Pass
Parathion-methyl and paraoxon-methyl (sum of) **	<0.2	0.2	Pass
Pendimethalin *	<0.1	0.1	Pass
Pentachloroanisole **	<0.01	0.01	Pass
Permethrin and isomers (sum of) **	<1	1	Pass
Phosalone *	<0.1	0.1	Pass
Phosmet *	<0.05	0.05	Pass
Piperonyl Butoxide *	<3	3	Pass
Pirimiphos Ethyl *	<0.05	0.05	Pass
Pirimiphos-methyl (sum of pirimiphos-methyl and *N*-desethyl-pirimiphos-methyl)**	<4	4	Pass
Procymidone **	<0.1	0.1	Pass
Profenophos *	<0.1	0.1	Pass
Prothiophos **	<0.05	0.05	Pass
Pyrethrum (sum of cinerin I, cinerin II, jasmolin I, jasmolin II, pyrethrin I, and pyrethrin II) *	<3	3	Pass
Quinalphos *	<0.05	0.05	Pass
Quintozene (sum of quintozene, pentachloraniline, and methyl pentachlorphenyl sulfide) **	<1	1	Pass
S-421 **	<0.02	0.02	Pass
Tecnazene **	<0.05	0.05	Pass
Tetradifon **	<0.3	0.3	Pass
Vinclozolin **	<0.4	0.4	Pass
Bromide, Inorganic (Calculated as Bromide Ion) †	<125	125	Pass
Dithiocarbamates (Expressed as CS_2) ‡	<2	2	Pass

Chromatographic Conditions (*):

Method:	ATM-815-0308
Chromatographic Instrument:	UPLC
Ionization Method:	Electrospray Ionization
Mass Spectrometer:	Triple Quadrupole, MRM Mode

Chromatographic Conditions (**):

Method:	ATM-815-0308
Chromatographic Instrument:	GC
Ionization Method:	Atmospheric Pressure Gas Chromatography
Mass Spectrometer:	Triple Quadrupole, MRM Mode

Chromatographic Conditions (†):

Method:	ATM-815-0308
Chromatographic Instrument:	UPLC
Ionization Method:	Electron Ionization
Mass Spectrometer:	Triple Quadrupole, MRM Mode

Chromatographic Conditions (‡):

Method:	ATM-815-0308
Chromatographic Instrument:	GC
Ionization Method:	Electron Ionization
Mass Spectrometer:	Triple Quadrupole, SIM Mode

Analysis Date: 04/08/24 **Analyzed By: L Brown** **Authorized By: Torey French, R&D Analytical Chemist**

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Sample Preparation (* and **):

Mixed sample well. Ground to a fine powder or composited the contents of 10 capsules if needed. Transferred 500 mg of sample to a 15 mL centrifuge tube. Added 5.0 mL of extraction solvent and vortexed 30 seconds to mix. Sonicated for 30 minutes at room temperature. Let cool and centrifuged for 5 minutes at 4,000 RPM. Transferred 1 mL of supernatant to a dSPE tube and mixed at 15 Hz for 1 minute. Centrifuged at 10,000 RPM for 2 minutes. Transferred to vials for analysis.

Sample Preparation (†):

Mixed sample well. Ground to a fine powder or composited the contents of 10 capsules if needed. Transferred 500 mg of sample to a 15 mL centrifuge tube. Added 10 mL of extraction solvent. Vortexed 30 seconds to mix. Shook for 30 minutes. Filtered through 0.45 µm PES filter into a vial for analysis.

Sample Preparation (‡):

Mixed sample well. Ground to a fine powder or composited the contents of 10 capsules if needed. Transferred 500 mg of sample to a screw cap vial. Added 2.5 mL of water. Added 1 mL of isooctane. Added 7.5 mL of tin (II) chloride. Closed tightly with a PTFE lined cap. Vortexed 30 seconds. Placed in oven for 2 hours at 80°C, mixing vigorously every 15 minutes. Let cool. Centrifuged if needed and transferred to low actinic vial for analysis.

Report Summary:

Conclusion:	This "Maca" test sample meets the limits set forth in USP <561> Pesticide Residue Analysis.
OOS Reference:	N/A
Notes:	N/A
Work Instruction Reference:	09324 Br 09424 DTC 09524 LC 561 09624 GC 561

Torey French R&D Analytical Chemist

Digitally signed by Torey French
Date: 2024.04.11 14:52:28 -07'00'

Analysis Date: 04/08/24 **Analyzed By: L Brown** **Authorized By: Torey French, R&D Analytical Chemist**

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