



CERTIFICATE OF ANALYSIS

ECHINACEA ANGUSTIFOLIA ROOT 4% P.E. 4% ECHINACOSIDE

**LOT# 234131
GCI PRODUCT# 3040**

Botanical Name:		<i>Echinacea angustifolia</i>	
Plant Part Used:		Dried root/rhizome	
Solvents Used:		Ethanol, water	
Herb Extract Ratio:		6 – 8:1	
PARAMETER	SPECIFICATION	RESULT	METHOD
Appearance	Brown fine powder	Conforms	Visual
Odor and Taste	Characteristic	Conforms	Organoleptic
Identification	Conforms to reference standard	Conforms	HPLC
Loss on Drying	≤5.0%	1.7%	K.F.
Total Ash	≤20.0%	4.0%	Ph. Eur., SOP No. MG-039
Residual Ethanol (loq=0.62 mg/kg)	≤0.5%	0.02%	GC
Particle Size	≥97.0% through 180 µm	99.6%	Ph. Eur., SOP No. MG-223
Bulk Density	As reported	0.62 g/ml	Ph. Eur., SOP No. MG-310
Assay – Echinacoside	≥4.0%	4.2%	HPLC
Residue of Solvents	Ethanol – ≤0.5%	Conforms	GC
Pesticides Used	Conforms to standard	Conforms	Ph. Eur.
Heavy Metals – Total			
Lead:	≤5.0 mg/kg	0.27 mg/kg	Ph. Eur.
Cadmium:	≤1.0 mg/kg	0.02 mg/kg	
Mercury:	≤0.1 mg/kg	<0.05 mg/kg	
Microbiological Analysis			
Total Aerobic Count:	≤10,000cfu/g	80cfu/g	Ph. Eur.
Yeast and Mold:	≤100cfu/g	<10cfu/g	
Enterobacteria:	≤100cfu/g	<10cfu/g	
E. Coli:	Negative/g	Negative/g	
Salmonella:	Negative/25g	Negative/25g	

Country of Origin: Raw material – Spain, finished product - USA.

Storage: Store in a well-closed container away from heat and moisture.

Date of Manufacture: 07/25/2013.

Retest Date: 07/25/2016.

The foregoing analysis was submitted to us by the manufacturer.

This is a computer print of the analysis certificate which has been undersigned on the original and is valid without signature.

It is the responsibility of the user to determine the suitability of this product for any intended use.