

## Certificate of Analysis

Date of Testing: 2022-01-20 11:20:13  
 Date of Next Testing: 2026-01-19 11:20:13  
 Product Name: **L-Cystine**  
 CAS Number: 56-89-3  
 Specifications & Purity: from non-animal source, meets EP testing specifications, suitable for cell culture  
 Lot #: A2215336  
 SKU #: **C118619**  
 Analysis: **061355**

Parameter	Limit Values	Result
Endotoxin Assay	0-50 (EU/g)	22.11 EU/g
Chloride	0-0.02 (%)	0.00 %
Iron(Fe)	0-10 (ppm)	2.36 ppm
Heavy metal (as Pb)	0-10 (ppm)	5.54 ppm
Sulfate Ash	0-0.1 (%)	0.02 %
Purity(HPLC)	98.5-100 (%)	99.06400 %
Sulfate(SO42-)	0-0.03 (%)	0.00 %
Ammonia (NH4)	0-200 (ppm)	100.36 ppm
Loss on drying	0-0.5 (%)	0.04 %
Specific Rotation [α] <sub>20</sub> /D(c=2 in 1N HCl in dried basis)	-224--218 (°)	-218.01 °
Appearance (C118619)	White Powder or Crystals	White Powder or Crystals
Cytotoxicity	Pass	Pass
Infrared spectrum	Conforms to Structure	Conforms to Structure
Ninhydrin-Positive Substances	Conforms	Conforms
Origin	non-animal source	non-animal source
Residual solvents	complies	complies



ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

A handwritten signature in black ink that reads "John Su". The signature is written in a cursive, flowing style.

John Su  
QA & QC Manager