

## Certificate of Analysis

Date of Testing: 2022-03-10 16:31:02  
 Date of Next Testing: 2026-03-09 16:31:02  
 Product Name: **L(+)-Glutamic acid**  
 CAS Number: 56-86-0  
 Specifications & Purity: from non-animal source,EP,JP,USP ; for cell culture,98.5 to 101.0%  
 Lot #: C2205497  
 SKU #: **G107510**  
**Analysis: 070058**

Parameter	Limit Values	Result
(As)Arsenic	0-1 (ppm)	0.06 ppm
Sulfate(SO <sub>4</sub> <sup>2-</sup> )	0-0.02 (%)	0.01 %
PH test	3-3.5	3.30
Loss on drying	0-0.1 (%)	0.05 %
Ammonia (NH <sub>4</sub> )	0-0.02 (%)	0.01 %
Endonuclease Detection	0-0.1 (EU/g)	0.03 EU/g
Iron(Fe)	0-10 (ppm)	5.00 ppm
Assay	98.5-100.5 (%)	98.91 %
Ignition Residue (as sulfate)	0-0.1 (%)	0.03 %
Chloride	0-0.02 (%)	0.00 %
Heavy metal (as Pb)	0-10 (ppm)	6.00 ppm
Assay(dry basis)	98.5-101 (%)	99.37 %
Specific Rotation [α] <sub>20</sub> /D(C=10 in 1 M HCl)	31.5-32.4 (°)	31.51000°
Ninhydrin-positive substances (other amino acids)	Conforms	Conforms
Residual solvents	complies	complies
Solubility,Colorless , Clear , 1.0 g to 10 ml of 2 M HCl	pass	Pass
Appearance (G107510)	white powder	White powder
Infrared spectrum	Conforms to Structure	Conforms to Structure
Cell Culture Test	pass	Pass



---

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

A handwritten signature in black ink that reads "John Su".

John Su  
QA & QC Manager