

Certificate of Analysis

Date of Testing:	2023-06-02 16:43:03
Date of Next Testing:	2026-06-01 16:43:03
Product Name:	L-Glutamine
CAS Number:	56-85-9
Specifications & Purity:	meets USP testing specifications, suitable for cell culture, 99.0-101.0%, from non-animal source
Lot #:	E23291229
SKU #	L432948
Analysis:	204580

Parameter	Limit Values	Result
Purity(dry basis) (Titration)	99.0-101.0 (%)	100.47 %
Chloride Content	0-0.02 (%)	0.01 %
Ammonium (NH ₄)	0-0.1 (%)	0.00000 %
Sulfate(SO ₄)	0-0.02 (%)	0.00230 %
Iron(Fe)	0-10 (ppm)	0.00 ppm
Arsenic(As)	0-1 (ppm)	0.00000 ppm
loss on drying(105°C,3 h)	0-0.3 (%)	0.29 %
PH 2% Water	4.5-6.0	4.75
Specific Rotation [α] ₂₀ /D(c=5 in H ₂ O)	6.3-7.3 (°)	6.33°
Endotoxin Level(30 mg/mL)	0-1 (EU/ml)	0.01200 EU/ml
Residue on ignition(Ash)	0-0.1 (%)	0.09800 %
NMR Spectrum 1H	Conforms to structure	Conforms to Structure
Ninhydrin-Positive Substances	Conforms	Conforms
Residual Solvents USP <467>	meets the requirements	meets the requirements
Infrared spectrum	Conforms to structure	Conforms to Structure



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