

Certificate of Analysis

Date of Testing: 2022-09-09 19:10:24
 Date of Next Testing: 2026-09-08 19:10:24
 Product Name: **L-Proline**
 CAS Number: 147-85-3
 Specifications & Purity: Animal Free, Ph.Eur., USP, for cell culture, ≥99%
 Lot #: I2207102
 SKU #: **P120032**
 Version: **1**
 Analysis #: **120779**
 Storage Temperature: Protected from light

Parameter	Limit Values	Result
Ammonia (NH ₄)	0-0.02 (%)	0.00 %
PH(10% in water)	5.9-6.9	6.23
Ignition Residue(Ash)	0-0.1 (%)	0.05 %
Chloride (Cl ⁻)	0-0.02 (%)	0.01 %
Heavy metal (as Pb)	0-10 (ppm)	5.30 ppm
Specific Rotation [α] ₂₀ /D(c=4 in H ₂ O)(calcd.on anh.substance)	-86--84 (°)	-85.67 °
Sulfate(SO ₄ ²⁻)	0-0.02 (%)	0.01 %
Iron(Fe)	0-10 (ppm)	4.90 ppm
Loss on drying	0-0.3 (%)	0.21 %
Purity(as dry basis)	98.5-101.5 (%)	99.71000 %
Endotoxin Assay	0-1 (EU/mg)	0.51 EU/mg
Specific Rotation [α] ₂₅ /D (USP: 25 °C in c=4 in H ₂ O)	-86.3--84.3 (°)	-86.29 °
Appearance (P120032)	white powder	White powder
Cell Culture Test	pass	Pass
Infrared spectrum	Conforms to Structure	Conforms to Structure
Ninhydrin-Positive Substances	Conforms	Conforms
Origin	non-animal source	non-animal source
Solubility in H ₂ O , clear colorless , 1 g / 10 ml in water	pass	Pass



ALADDIN SCIENTIFIC CORPORATION

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

John Su
QA & QC Manager