

ALADDIN SCIENTIFIC CORPORATION  
 14078 Meridian Parkway, Riverside, CA. 92518

## Certificate of Analysis

Date of Testing: 2025-04-27 16:12:22  
 Date of Next Testing: 2028-04-26 16:12:22  
 Product Name: **L-Valine**  
 CAS Number: 72-18-4  
 Specifications & Purity: UltraBio™, ≥99.5%(NT)  
 Lot #: D2522399  
 SKU #: **L755656**  
 Version: **1**  
 Analysis #: **504480**  
 Storage Temperature: Room temperature

Parameter	Limit Values	Result
Purity((NT)	99.5-100.5 (%)	99.83%
specific rotation [α]20/D(c=5 in 5M HCl)	26.5-27.5 (°)	26.75400°
Residue on ignition(Ash)	0-0.05 (%)	0.00000%
Chloride (Cl-)	0-50 (ppm)	0.00 ppm
Sulfate(SO42-)	0-50 (ppm)	0.00 ppm
Aluminium(Al)	0-5 (ppm)	0.00000 ppm
Arsenic(As)	0-0.1 (ppm)	0.00000 ppm
Barium(Ba)	0-5 (ppm)	0.00 ppm
Bismuth(Bi)	0-5 (ppm)	0.00 ppm
Calcium(Ca)	0-50 (ppm)	0.00 ppm
Cadmium(Cd)	0-5 (ppm)	0.00 ppm
Cobalt(Co)	0-5 (ppm)	0.00 ppm
Chromium(Cr)	0-5 (ppm)	0.00 ppm
Copper(Cu)	0-5 (ppm)	0.00 ppm
Iron(Fe)	0-5 (ppm)	0.00 ppm
Potassium(K)	0-50 (ppm)	0.00 ppm
Lithium(Li)	0-5 (ppm)	0.00 ppm
Magnesium(Mg)	0-5 (ppm)	0.00 ppm
Manganese(Mn)	0-5 (ppm)	0.00 ppm
Molybdenum(Mo)	0-5 (ppm)	0.00 ppm
NH4+	0-150 (ppm)	0.00000 ppm
Sodium(Na)	0-100 (ppm)	0.00 ppm
Nickel(Ni)	0-5 (ppm)	0.00 ppm
Lead(Pb)	0-5 (ppm)	0.00 ppm
Strontium(Sr)	0-5 (ppm)	0.00 ppm

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**Parameter**

Zinc(Zn)

Appearance(L755656)

Infrared spectrum

**Limit Values**

0-5 (ppm)

White powder or crystals

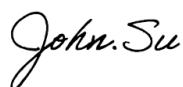
Conforms to Structure

**Result**

0.00 ppm

White Powder or Crystals

Conforms to Structure

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

John Su  
QA & QC Manager