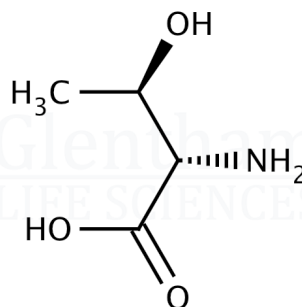


## Certificate of Analysis

Product Name	L-Threonine, GlenCell™, suitable for cell culture
Glentham Code	GM4012
CAS Number	72-19-5
EINECS	200-774-1
MDL Number	MFCD00064270
Batch Number	133TLY
Molecular Weight	119.12
Molecular Formula	C <sub>4</sub> H <sub>9</sub> NO <sub>3</sub>
Storage Temp.	+20°C



Property	Specification	Batch 133TLY
Physical Description	White crystals or crystalline powder	White crystalline powder
Identification	IR	Conforms
Solubility	Freely soluble in formic acid, soluble in water, practically insoluble in ethanol	Conforms
Solubility (10% in water)	Clear, colourless solution	Conforms
Transmittance	≥ 98.0% (10% in water, 430nm, 10mm cell)	100.0%
Specific Optical Rotation	-27.6 - -29.0 ° (C=6, H <sub>2</sub> O)	-28.4°
Chloride (Cl)	≤ 0.02%	≤ 0.02%
Ammonium (NH <sub>4</sub> )	≤ 0.02%	≤ 0.02%
Sulphate (SO <sub>4</sub> )	≤ 0.02%	≤ 0.02%
Iron (Fe)	≤ 10ppm	≤ 10ppm
Heavy Metals (as Pb)	≤ 10ppm	≤ 5ppm
Arsenic (As <sub>2</sub> O <sub>3</sub> )	≤ 1ppm	≤ 1ppm
Related Substances	To pass test	Conforms
Loss on Drying	≤ 0.2%	0.00%
Sulphated Ash	≤ 0.1%	0.03%
pH	5.2 - 6.2 (1% in water)	5.7
Endotoxins	≤ 6.0EU/g	≤ 3.0EU/g
Assay	99.0 - 101.0 %	100.0%
Origin	Non-animal origin	Conforms

Specification Version	v1.0
Manufacture Date	2019-02-08
Re-Test Date	2025-04-27

Glentham Life Sciences confirm that the above referenced product conformed to the information displayed in this document on the quality release date. Please check [www.glentham.com](http://www.glentham.com) or contact us using the details above for the current version of this document.

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