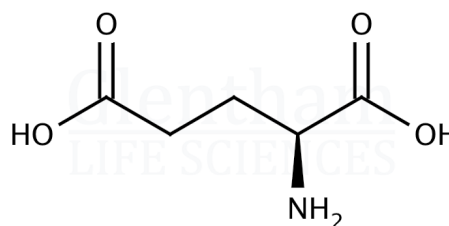


## Certificate of Analysis

Product Name	L-Glutamic acid, GlenCell™, suitable for cell culture
Glenthams Code	GM8976
CAS Number	56-86-0
EINECS	200-293-7
MDL Number	MFCD00002634
Batch Number	761NYU

Molecular Weight	147.13
Molecular Formula	C <sub>5</sub> H <sub>9</sub> NO <sub>4</sub>
Storage Temp.	+20°C



Property	Specification	Batch 761NYU
Physical Description	White crystalline powder	Conforms
Identification	To pass tests	Conforms
Solubility (5% in water)	Clear, colourless solution	Conforms
pH (1% in water)	3.0 - 3.5	3.3
Transmittance	≥ 98.0% (5% in water, 430nm, 10mm cell)	Conforms
Specific Optical Rotation ([α] <sub>D</sub> 20/D)	+31.5 - +32.2 °	+32.1°
Chloride (Cl)	≤ 0.02%	Conforms
Sulphate (SO <sub>4</sub> )	≤ 0.02%	Conforms
Ammonium (NH <sub>4</sub> )	≤ 0.02%	Conforms
Iron (Fe)	≤ 10ppm	Conforms
Arsenic (As <sub>2</sub> O <sub>3</sub> )	≤ 1ppm	Conforms
Heavy Metals (as Pb)	≤ 5ppm	Conforms
Any Individual Impurity	≤ 0.2%	0.08% (max.)
Total Impurities	≤ 0.6%	0.08%
Sulphated Ash	≤ 0.1%	0.04%
Loss on Drying	≤ 0.5%	0.04%
Endotoxins	≤ 6EU/g	≤ 6EU/g
Assay	99.0 - 101.0 % (dried basis)	99.6%
Pharmacopoeia Specification(s)	EP	Conforms to EP
Origin	Non-animal origin	Conforms

Specification Version	v1.0
Manufacture Date	2017-03-09
Re-Test Date	2024-12-21

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

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