Gold Standard Analytics

Gold Standard Analytics LLC, Houston, TX

CERTIFICATE OF ANALYSIS

Report GSA-COA-CUST-LA-GSH-20261103-7 · issued Nov 23, 2026

LA Peptides

PRODUCT	ORDER	SAMPLE
Glutathione nasal spray	Custom sample	LA-GSH-20261103

ISSUED	BATCH
Nov 23, 2026	2618



THE SAMPLE AS RECEIVED

IDENTITY ✓

Glutathione

confirmed by mass

PURITY ✓

99.07 %

HPLC-UV, 214 nm

ENDOTOXINS ✓

< 0.050 EU/mL

Pass; spike recovery 77 %

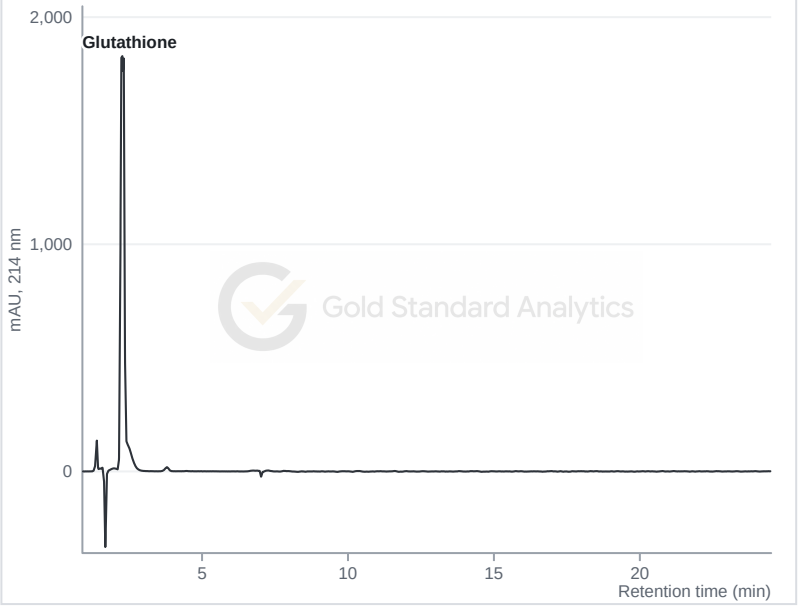
STERILITY ✓

No growth

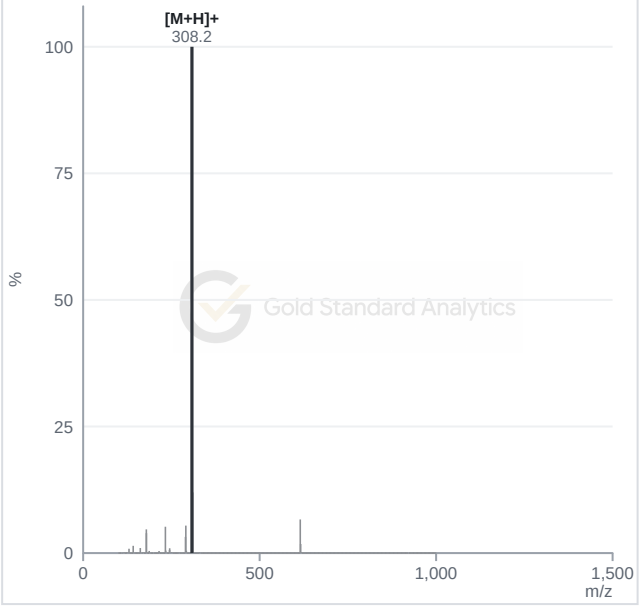
Pass; both canisters, 14 days

✓ **Heavy metals** USP <232>, ICP-MS: Pb, Cd, Hg, As, Co, V, Ni — **Pass**

HPLC CHROMATOGRAM UV, 214 nm



MASS SPECTRUM main peak (2.28 min)



RELEASED BY

Ian Ebert

Chemist & Lab Lead · Nov 24, 2026

Scan to verify

goldstandardanalytics.com/coa/

Results are not covered by ISO/IEC 17025 accreditation. Results relate only to the sample as received and tested.

The sample

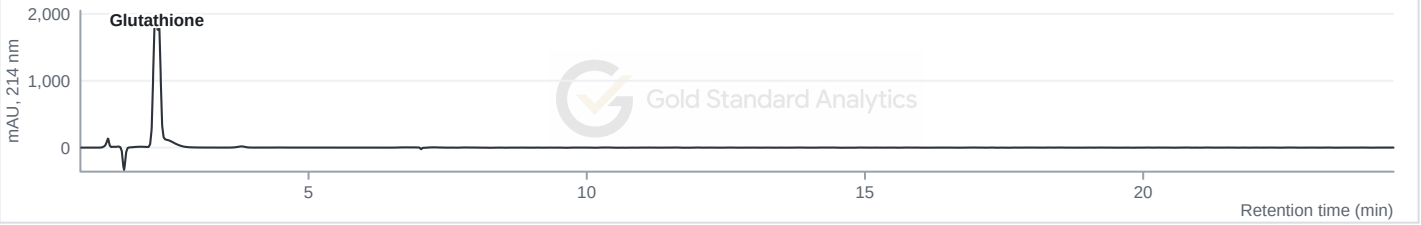
Custom sample · LA Peptides

Customer	**LA Peptides**
Order	**Custom sample**
Sample	**LA-GSH-20261103**
Label	**Glutathione nasal spray, 500 mg per bottle**
Prepared	**Spray diluted with water containing 0.1 % formic acid, 17 Nov 2026**
Tested	**17 Nov 2026**
Tests	**Identity, Purity, Impurity breakdown, Bacterial endotoxins, Sterility, Elemental impurities**

Graphs

HPLC CHROMATOGRAM

HPLC chromatogram (UV, 214 nm) · mAU, 214 nm against Retention time (min)



MASS SPECTRUM

Mass spectrum of the main peak (2.28 min) · Counts against m/z



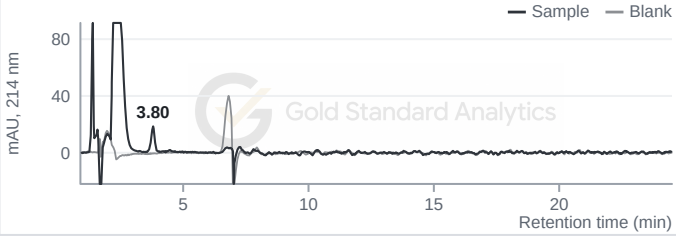
Results

Identity	**Consistent with glutathione.** The main peak at 2.28 min carries its ion at m/z 308.2 ([M+H]+, expected 308.1).
Purity	**99.07 %** by HPLC with UV detection at 214 nm (share of the glutathione-related UV peak area). The only glutathione-related peak besides glutathione itself is oxidised glutathione (GSSG), 0.93 %, listed below. The early peak at about 1.4 min is salt from the spray liquid (its mass spectrum shows sodium formate clusters and no glutathione), and the dip after it is the injected liquid passing the detector. The peak at about 7 min comes from the instrument, not the sample (it appears when only blank solvent is run). None of these is counted.
Bacterial endotoxins	**< 0.050 EU/mL; spike recovery 77%** . Pass.
Sterility	**No growth in either canister after 14 days** . Pass.
Elemental impurities (USP <232>)	**Pb < 0.5 µg/g; Cd < 0.2 µg/g; Hg < 0.3 µg/g; As < 0.2 µg/g; Co < 0.3 µg/g; V < 0.1 µg/g; Ni < 0.5 µg/g (Agilent ICP-MS)** . Pass.

Zoomed views

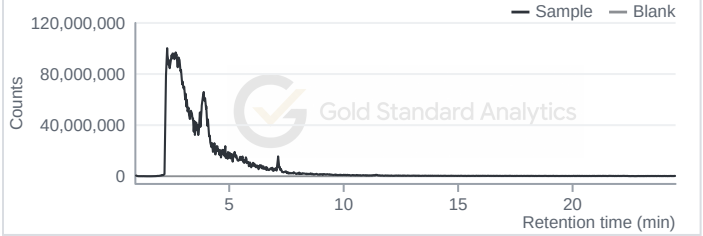
HPLC, SMALL PEAKS

Zoomed in on the small peaks (5 % of the main peak) · mAU, 214 nm against Retention time (min)



ION TRACE

Ion trace, m/z 308.1 ([M+H]+): sample vs blank · Counts against Retention time (min)



Impurities

Every peak counted besides the main peptide:

PEAK (MIN)	AMOUNT	WHAT IT IS
3.80	0.93 %	Oxidised glutathione (GSSG): two glutathione molecules joined through a disulfide bond (mass 612.6). The usual product of glutathione oxidation.

> Amounts are each peak's share of the peptide-related UV peak area at 214 nm.

How it was tested

Liquid chromatography with UV and mass-spectrometry detection: Agilent 1290 Infinity II LC with a 6490 triple-quadrupole mass spectrometer. Column Polaris C18-A, 2.0 x 150 mm, 45 °C; water and acetonitrile, each with 0.1 % formic acid. Purity: UV peak area at 214 nm after subtracting blank runs of the same sequence. Identity: molecular mass from the mass spectrum. Bacterial endotoxins: endotoxin reader, 0.050 EU/mL limit; result reported as printed by the reader, with spike recovery. Sterility: membrane filtration (canisters), 14-day incubation. Elemental impurities (USP <232>): Agilent ICP-MS; Pb, Cd, Hg, As, Co, V, Ni.

Notes

Results apply only to the sample as received and tested.

Release

This report is signed electronically at release. The signature is printed on page 1, and the release record, added as the last page, gives the date and the verification code.

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Release record

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Report GSA-COA-CUST-LA-GSH-20261103-UPL-2bb9eacce15b · Certificate GSA-2026-273400

Customer and order	LA Peptides · Custom sample (no order)
Sample and report	LA-GSH-20261103 · Glutathione nasal spray Certificate of Analysis
Report reference	GSA-COA-CUST-LA-GSH-20261103-UPL-2bb9eacce15b
Certificate accession	GSA-2026-273400
Released and signed by	Ian Ebert, Chemist & Lab Lead
Date and time (UTC)	2026-11-24 23:34:43Z
Signature meaning	Approved for release. The signer reviewed this report and approved its release to its customer.
Approval reference	eb2c140c-baf8-4c2d-9e55-9c52b3544116
Electronic signature	Signed electronically in a signed-in GSA staff account.
Original report SHA-256	62c05a98ff4b2f48df1ed3b17e3c82e5002f818174194965c8953556cb8a6d29
Verify this certificate	https://goldstandardanalytics.com/coa/GSA-2026-273400

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Signature



Ian Ebert, Chemist & Lab Lead

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