

QC Verification Review

Cerebrolysin | Lot KC-CEB-01

Reviewed: 2026-07-25

Package: MZ Biolabs COA (nanoHPLC-MS proteomics) • Vanguard Laboratory COA (HPLC-UV/VIS) • MZ delivery email (K. Pendarvis, 2026-07-09)

Disposition: **PASS** - identity and authenticity confirmed; release-ready

This package 1. QC Verification Review → 2. Appendix A: MZ Biolabs COA → 3. Appendix B: Vanguard COA

Bottom line

Identity is confirmed by two orthogonal methods run by two independent labs on the same lot. Authenticity - genuine porcine cerebrum hydrolysate - is independently verified from the proteomics data. The package is release-ready on the analytical merits.

1. Cross-document consistency

Field	MZ Biolabs	Vanguard Laboratory
Product	Cerebrolysin	Cerebrolysin (Raw Powder)
Lot	KC-CEB-01	KC-CEB-01
Client	Kimera Chems	Kimera Chems
Method	nanoHPLC-MS Proteomics	HPLC-UV/VIS
Identity result	Confirmed; porcine + cerebrum CONFIRMED	Matches reference standard
Sign-off	Ken Pendarvis, ChE	D. Newman (Lab Dir.); T. Johnson (Ops)
Accreditation	(proteomics identification)	ISO 17025:2017 / A2LA #6377.01.01
Timeline	analyzed 2026-07-08, signed 07-09	acquired ~06/22 to 06/24, released 07-10

Product, lot, and client agree across both certificates. Two labs, two independent methods, same lot - strong corroboration with no discrepancies. The staggered timeline (Vanguard acquired late June, MZ analyzed early July, both released within days) is normal.

2. Method appropriateness

Cerebrolysin is not a single molecule - it is a defined mixture of low-molecular-weight peptides and free amino acids produced by enzymatic hydrolysis of porcine brain tissue. That drives the QC logic:

- **No single "purity %" is meaningful for this product**, and correctly, neither lab reports one. A purity/assay figure should not be expected or added for a hydrolysate.
- The two questions that actually matter are **authenticity** (is it genuinely porcine brain-derived?) and **profile identity** (does the fingerprint match reference?).
- **MZ proteomics answers authenticity definitively** - a peptide-level species/tissue fingerprint cannot be faked with collagen, gelatin, or a generic peptide blend.

- **Vanguard HPLC-UV/VIS answers profile identity** - the fingerprint matches the reference standard.

Verdict: the two methods are appropriate and complementary. This is a stronger identity package than a lone HPLC purity number would have been.

3. Proteomics authenticity check (independent verification)

- **Peptide count** - all entries independently tallied: **46 peptides across 18 proteins**, matching the stated total on the cert. Internally consistent.
- **Biological coherence** - the signature is exactly what porcine cerebrum should yield: myelin proteins dominate (myelin basic protein with 16 peptides, the single most-identified, as expected for white matter, plus proteolipid protein, MAG, and MOG), the astrocyte marker GFAP, neuronal/synaptic proteins (neurofilament, spectrin beta, synapsin-1, synaptophysin), and neural adhesion molecules (contactin-1, NCAM1, tenascin-R, cell adhesion molecule 2). No implausible or off-tissue entries.
- **Accession spot-check vs. live UniProt** - P81558 → Myelin basic protein (*Sus scrofa*) and Q712P7 → Myelin proteolipid protein (*Sus scrofa*) both resolve exactly to porcine entries with matching protein names. All auto-annotated accessions fall within known *Sus scrofa* proteome blocks (A0A286 / A0A287 / A0A4X1 / A0A5G2 / A0A481).

Conclusion: the proteomics data is real, self-consistent, and species/tissue-appropriate. High confidence the material is authentic porcine cerebrum hydrolysate.

4. Manufacturing status

Lot KC-CEB-01 is designated as the active pharmaceutical ingredient (API) for an in-house solution manufacturing process. The formulation composition is proprietary and maintained as an internal confidential document.

Parameter	Detail
API lot	KC-CEB-01 (this lot)
Solution concentration	215 mg/ml
Manufacturing status	Solution manufactured; end product testing in progress
Pending tests	Sterility Endotoxin Quantification Identity
Formulation details	Proprietary - internal documentation only; not for disclosure

5. Disposition

Item	Status
Identity	CONFIRMED (two orthogonal methods, two labs)
Authenticity (porcine cerebrum)	CONFIRMED + independently verified
API lot	PASS - certificates match the tested lot; released for manufacturing
End product testing	Pending - sterility, endotoxin, quantification, identity

Appendices follow: A - MZ Biolabs Certificate of Analysis; B - Vanguard Laboratory Certificate of Analysis.

APPENDIX A

MZ Biolabs

Certificate of Analysis - Cerebrolysin

Lot KC-CEB-01 | nanoHPLC-MS Proteomics



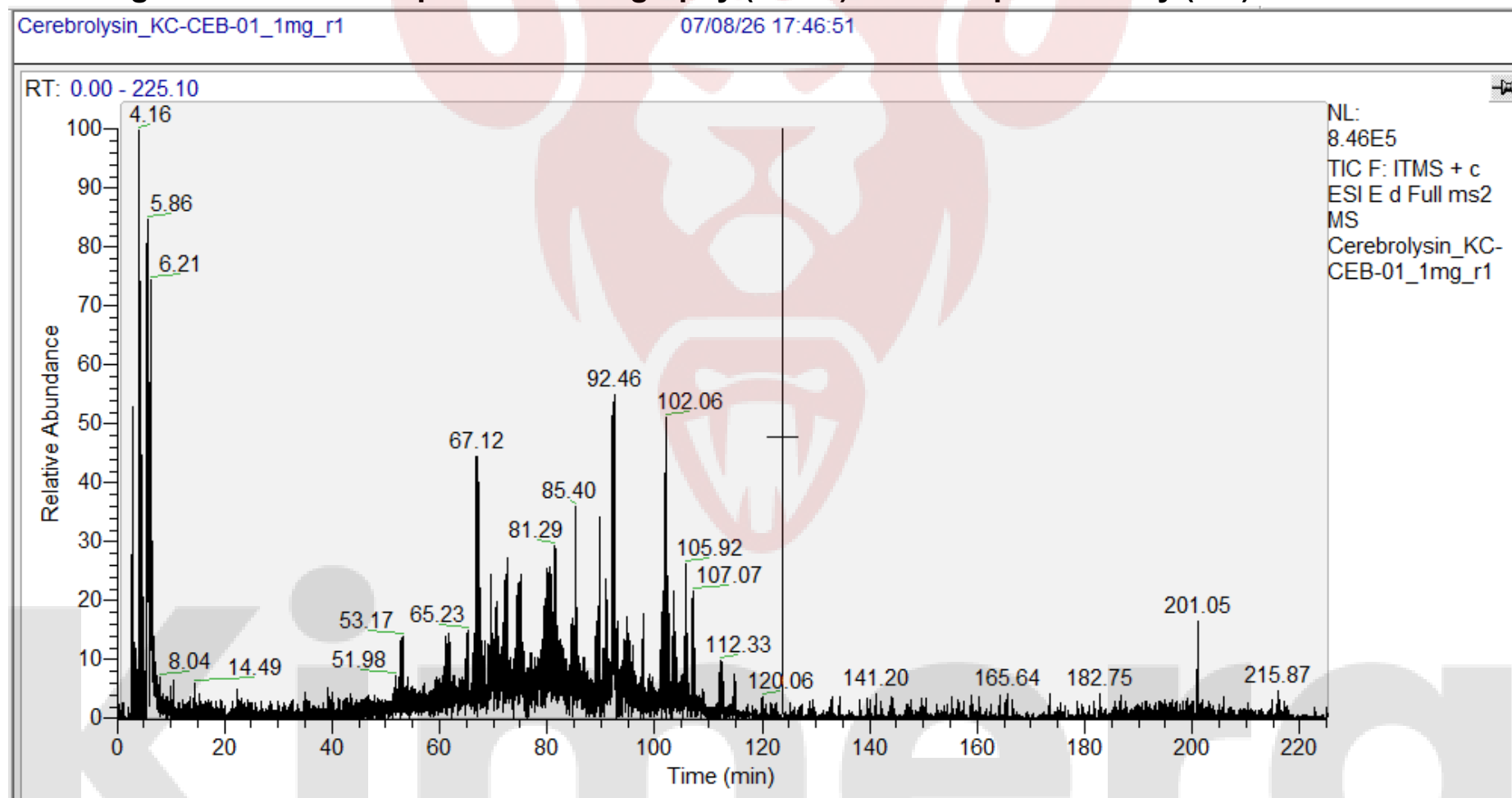
Certificate of Analysis

Cerebrolysin

Product : Cerebrolysin
Lot number : KC-CEB-01
Analysis date : 2026-07-08
Method : nanoHPLC-MS Proteomics
Identification : Confirmed

Client : Kimera Chems
Kimerachems.co

Nano High Performance Liquid Chromatography (HPLC) – Mass Spectrometry (MS)



Cerebrolysin consists of hundreds to thousands of small molecules and peptides generated by the enzymatic hydrolysis of porcine brain tissue.

Peptides and their parent proteins can be identified from complex hydrolysates using proteomics. Proteomics uses the fragmentation function of a mass spectrometer to isolate and fragment molecules as they are separated by the HPLC, in this case a nanoHPLC to increase sensitivity. Fragmentation provides sequence information that can be used by various software to identify peptides. The chromatogram above represents the detected compounds that were fragmented by the mass spec over the course of a 225 minute analysis.

Analysis Performed by
Ken Pendarvis, ChE
Analytical Chemist
MZ Biolabs
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2026-07-09

Cerebrolysin

Analysis Results

46 peptides from cerebral tissue expressed proteins were identified from a porcine (*Sus scrofa*) database from UniProt.org. This confirms the tissue source was indeed porcine cerebrum.

Identified cerebral peptides / proteins. More information can be found at Uniprot.org using the accessions listed below.

Cell adhesion molecule 2 (Accession A0A5G2QAH4)

2 peptides identified

KIIPSTPFPQEGQPLI, KIIPSTPFPQEGQPLIL

Contactin-1 (Accession A0A287B9Q3)

3 peptides identified

ALGNPVPDIRW, IPLIPLPERTTKPYPAD, VVRGPPGPPGGL

Dihydropyrimidinase-related protein 2 (Accession A0A4X1VC81)

7 peptides identified

GITGPEGHVLSRPEE, IIDHVVPEPGTS, IIDHVVPEPGTSL, IKGGKIVNDDQSF, LGITGPEGHVLSRPEE, VTSPPLSPDPTTPDF, VVTGKMDENQF

Glial fibrillary acidic protein (Accession A0A287A1W4)

3 peptides identified

AQQQVHVEM, DQLTANGARL, EEEGQSLKDEM

Glutathione S-transferase P (Accession P80031)

1 peptide identified

VKELPEHLKPFETL

Myelin basic protein (Accession P81558)

16 peptides identified

AQHGRPQDENPVVHF, ASQKRPSQRHGSKY, FSWGAEGQKPGFGY, GAEGQKPGFGY, GGRAPDYKPAHKGLKGAQ, GGRAPDYKPAHKGLKGAQDAQGTL, GRPQDENPVVHF, GSLPQKAQHGRPQDENPVVHF, PQKAQHGRPQDENPVVHF, QKAQHGRPQDENPVVHF, RPQDENPVVHF, SRFSWGAEGQKPGFGY, SWGAEGQKPGF, SWGAEGQKPGFG, SWGAEGQKPGFGY, WGAEGQKPGFGY

Myelin proteolipid protein (Accession Q712P7)

4 peptides identified

INVIHAFQ, PSKTSASIGSL, YTTGAVRQIFGD, YTTGAVRQIFGDY

Myelin-associated glycoprotein (Accession A0A5G2QRY2)

3 peptides identified

FNSPYPKNYPPVV, FNSPYPKNYPPVVF, SWLGHEGLGEPVAVL

Myelin-oligodendrocyte glycoprotein (Accession A0A5G2RMA3)

1 peptide identified

LKETIGEGKVTL

Neural cell adhesion molecule 1 (Accession A0A287AU28)

1 peptide identified

DEPEATGGVPIL

Neurofilament medium chain (Accession A0A5G2QW19)

1 peptide identified

KEQIQGLNDRF

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2026-07-09



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Cerebrolysin

Spectrin beta chain (Accession A0A286ZNC7)

1 peptide identified

IANYRPTIDSL

Synapsin-1 (Accession B7TY10)

1 peptide identified

PLIGDHQDEDKQL

Synaptophysin (Accession F1RW46)

1 peptide identified

AAPFLRAPPGAPEKQPAPGDA

Tenascin-R (Accession A0A481CFE3)

1 peptide identified

GLVGGEKGKTTF

Porcine species source – CONFIRMED

Cerebrum tissue source – CONFIRMED

Analysis Performed by
Ken Pendarvis, ChE
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2026-07-09

APPENDIX B

Vanguard Laboratory

Certificate of Analysis - Cerebrolysin

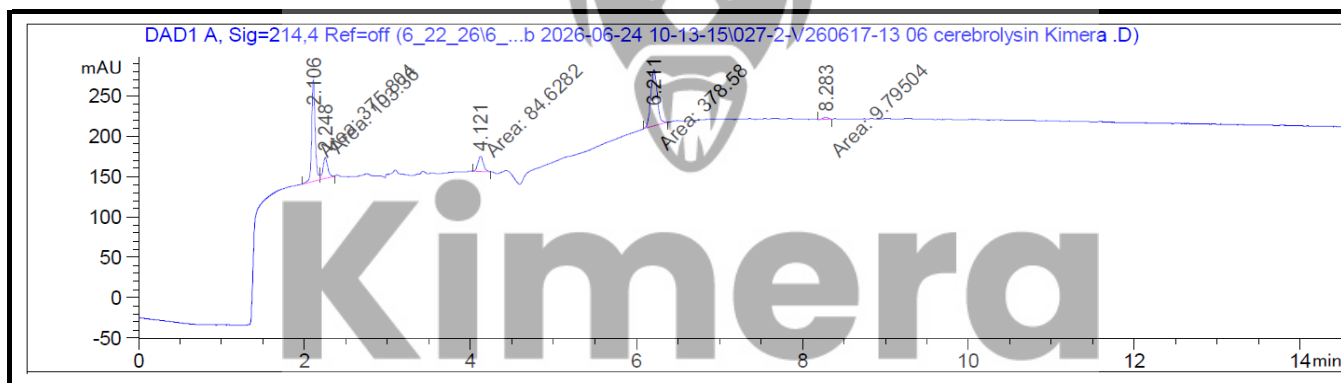
Lot KC-CEB-01 | HPLC-UV/VIS (ISO 17025 / A2LA)

Certificate of Analysis

Cerebrolysin Raw Powder

Report To:
Kimera Chems

Compound: Cerebrolysin
Matrix: Raw Powder
Laboratory ID: V260617-13 006
Lot Number: KC-CEB-01
Date Released: 7/10/2026



Analysis	Method	Result
Chromatographic Identity	HPLC-UV/VIS	Matches Ref. Standard



[Signature]

Report By: Dustin Newman, Laboratory Director on 7/10/2026

[Signature]

Approved By: Tori Johnson, Operations Manager on 7/10/2026

Please consult A2LA Certificate #6377.01.01 for a list of accredited tests. Samples were received in acceptable condition. The result(s) in this report relate only to the portion of the sample(s) tested. All analyses were performed consistent with the Vanguard Laboratory Quality Management System. Vanguard Laboratory and its staff did not observe or participate in the sample selection process, and cannot confirm the authenticity of the sample or its representativeness of the associated lot/batch.