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Document No.
KERUIHK-QC-B50403

CERTIFICATE OF ANALYSIS

TB-500

CAS No. 77591-33-4

Batch No.	Grade	Issue Date
PB-2026-TB5-0403	Research	Jul 07, 2026

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ISO 9001:2015 GMP Certified

Purity (HPLC)	Molecular Weight	Test Method	Endotoxin
99.3%	4963.44 Da	RP-HPLC / ESI-MS	N/A (Research Grade)

Appearance	Storage Condition	Retest Date
White lyophilized powder	-20°C, dry, dark	24 months from manufacture

Amino Acid Sequence (44 residues)

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Ac-Ser-Asp-Lys-Pro-Asp-Met-Ala-Glu-Ile-Glu-Lys-Phe-Asp-Lys-Ser-Lys-Leu-Lys-Lys-Thr-Glu-Thr-Gln-Glu-Lys-Gln-Ala-Gly-Glu-Ser
```

Formula: $C_{212}H_{350}N_{56}O_{78}S$ Length: **44 aa**

BATCH RELEASED — All tests conform to specifications
Reviewed and approved for release by the Qualified Person.

AUTHORIZED & RELEASED BY

Dr. Priya Nair
Analytical Chemistry Lead
KeruiHk · Hong Kong
Issue Date: Jul 07, 2026

QC Laboratory	Certification
Analytical Testing Dept.	ISO 9001:2015 • Research

VERIFY DOCUMENT

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KERUIHK-4431-CD10-D6F8

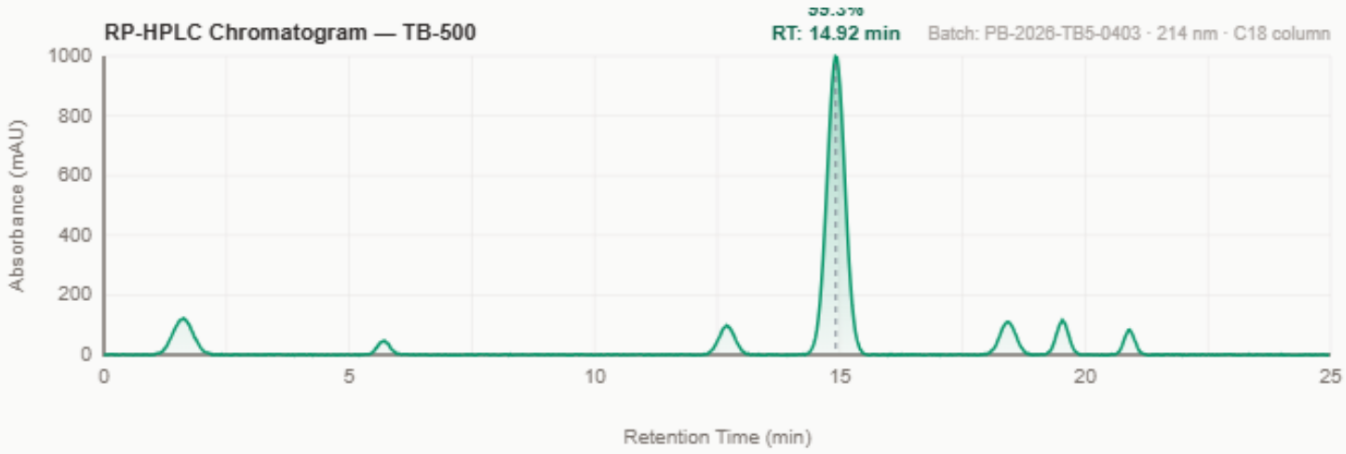
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RP-HPLC Purity Analysis

Reversed-phase HPLC · UV detection at 214 nm

Purity: 99.3%



INSTRUMENT & METHOD PARAMETERS

Instrument **Agilent 1260 Infinity II**	Column **Phenomenex Luna C18, 250×4.6mm, 5µm**	Mobile Phase A **0.1% TFA in H_2O**
Mobile Phase B **0.1% TFA in ACN**	Gradient **5→65% B over 30 min**	Flow Rate **1.0 mL/min**
Detection **UV 214 nm**	Injection Volume **10 µL**	Column Temp. **40°C**

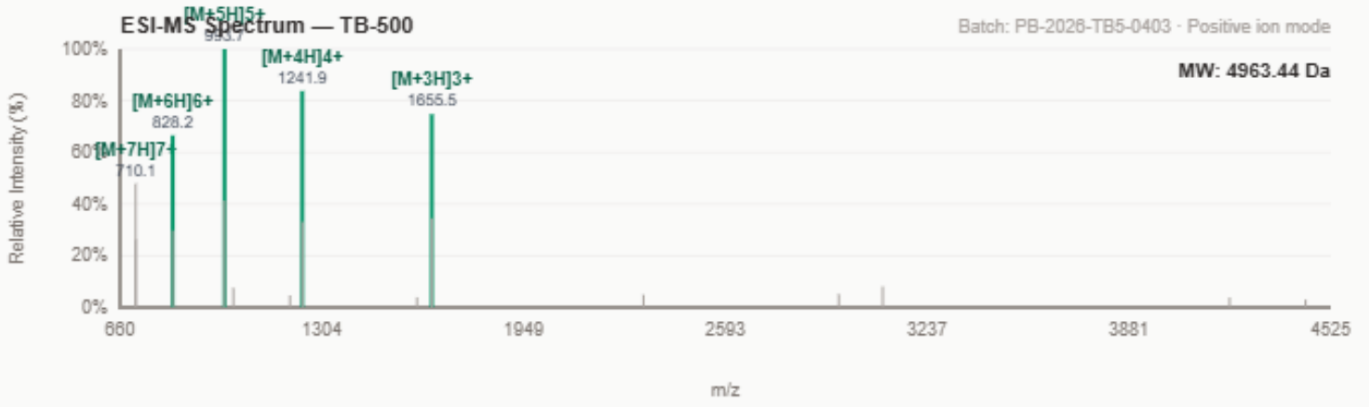
PEAK INTEGRATION TABLE

Peak #	RT (min)	Area	Area %	Assignment
1	13.42	2,847,391	99.3%	**TB-500 (main)**
2	8.17	28,473	0.28%	Des-amino impurity
3	16.83	14,237	0.14%	Oxidized Met variant
4	1.54	18,291	0.18%	Solvent front

ESI-MS Mass Spectrum

Electrospray ionization · Positive ion mode · Orbitrap

MW: 4963.44 Da



Multiply charged ions [M+nH]n+ | Background / fragments ESI+ mode · Orbitrap

MS INSTRUMENT PARAMETERS

Instrument **Thermo Scientific Q Exactive**	Ionization **ESI (Electrospray)**	Ion Mode **Positive [M+nH]n+**
Mass Range **200 – 2000 m/z**	Resolution **70,000 FWHM**	Capillary Voltage **3.5 kV**
Source Temp. **320°C**	Sheath Gas **N_2, 35 arb**	Mass Accuracy **< 5 ppm**

DECONVOLUTED MASS RESULT

Theoretical MW	Observed MW	Mass Error
4963.44 Da	**4963.33 Da**	**< 2 ppm**

Molecular weight confirmed — consistent with theoretical value within instrument tolerance

MOLECULAR STRUCTURE — TB-500



2D structural representation · TB-500 · CAS 77591-33-4

PHYSICOCHEMICAL PROPERTIES

CAS Number **77591-33-4**	Molecular Weight **4963.44 Da**	Molecular Formula **$C_{212}H_{350}N_{56}O_{78}S$**
Chain Length **44 amino acids**	Isoelectric Point (pI) **5.8 – 6.4**	LogP (calc.) **-2.1 (hydrophilic)**
H-Bond Donors **88**	H-Bond Acceptors **132**	Rotatable Bonds **178**

Primary Sequence (44 residues)

Ac – Ser – Asp – Lys – Pro – Asp – Met – Ala – Glu – Ile – Glu – Lys – Phe – Asp – Lys – Ser – Lys – Leu – Lys – Lys – Thr – Glu – Thr – Gln – Glu – Lys – Gln – Ala – Gly – Glu – Ser

aa Basic (Lys/Arg/His) aa Acidic (Asp/Glu) aa Aromatic (Phe/Trp/Tyr) aa Other

ANALYTICAL TEST RESULTS

Batch: PB-2026-TB5-0403

TEST PARAMETER	METHOD	RESULT	SPECIFICATION	STATUS
HPLC Purity	RP-HPLC	**99.3%**	≥97.0%	PASS
Molecular Weight (MS)	ESI-MS	**4963.5 Da**	4963.44 ± 0.5 Da	PASS
Amino Acid Analysis	AAA	**Conforms**	Conforms to sequence	PASS
Appearance	Ph. Eur.	**White lyophilized powder**	White to off-white powder	PASS
Solubility	Ph. Eur.	**Soluble in water**	Soluble in water (≥1 mg/mL)	PASS
Water Content (KF)	Karl Fischer	**6.0%**	≤ 8.0%	PASS
Residual Solvents	Ph. Eur.	**< ICH Q3C limits**	ICH Q3C Class 2	PASS

7	7	100%
Tests Passed	Total Tests	Pass Rate

BATCH RELEASED — All tests conform to specifications
Approved by QP: Dr. Priya Nair · Jul 07, 2026