LAB CENTRO
ANALYTICAL TESTING LABORATORY

# CERTIFICATE OF ANALYSIS

## BPC-157 + TB-500 20mg Injection Pen

Lab Centro · Analytical Chemistry | Mass Spectrometry | Microbiology
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CERTIFICATE NO.
**COA-2026-0829-BPCPEN-1392**


| PREPARED FOR | CLIENT WEBSITE | DISTRIBUTION |
|---|---|---|
| H&J Pharma | vietnam-peptides.com | Client confidential |

## 1 SAMPLE & ACCESSION

| ANALYTE / IDENTITY | CAS NUMBER | MOLECULAR FORMULA | MOLECULAR MASS (DA) |
|---|---|---|---|
| BPC-157 + TB-500 20mg Injection Pen | Blend | see components | — |
| **SUBSTANCE CLASS** | **REFERENCE-DATA CONFIDENCE** | **LOT NUMBER** | **LABELED CONTENT** |
| Two-peptide blend | See components | BPCPEN-2026-0811-9660 | 20 mg / 2 mL |
| **ACCESSION NO.** | **SAMPLE MATRIX** | **APPEARANCE** | **STORAGE** |
| ACC-2026-0829-BPCPEN-1392 | Pre-filled Injection Pen | Conforms | -20 °C, protected from light |
| **MANUFACTURED** | **RETEST / EXPIRY** | **DATE RECEIVED** | **DATE ANALYZED** |
| 08/09/2026 | 08/09/2028 | 08/21/2026 | 08/24/2026 |
| **FILL VOLUME** | **DISPOSITION** | | |
| 2.02 mL | RELEASED | | |



| PURITY | IDENTITY | NET PEPTIDE | MOISTURE |
|---|---|---|---|
| 99.45% PASS | Confirmed PASS | 20.32 mg REPORTED | N/A REPORTED |

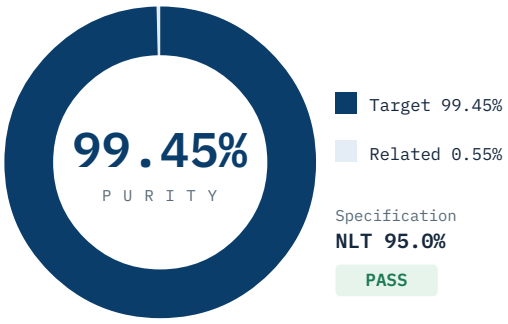
| STERILITY | ENDOTOXIN | HEAVY METALS |
|---|---|---|
| No Growth PASS | 0.059 PASS | ND PASS |

## 2 PURITY, QUANTITATION & IDENTITY

HPLC · HPLC-RTM · LC-MS

| PARAMETER | METHOD | SPECIFICATION | RESULT | UNIT | STATUS |
|---|---|---|---|---|---|
| Peptide purity (HPLC) | RP-HPLC-UV 214 nm | NLT 95.0% | 99.45 | % | PASS |
| Net peptide content | HPLC / AAA | Report only | 20.32 | mg | REPORTED |
| Identity (HPLC-RTM) | Retention-time match | Co-elution | Confirmed | — | PASS |
| Targeted adulterant / unexpected analyte screen | LC-MS/MS full-scan review | No unexpected exogenous analyte detected | Not Detected | — | PASS |

**FIGURE 1 · PURITY**




HPLC area normalization. Target 99.45%, related substances 0.55%.

Chromatographic purity of 99.45% is measured against a not-less-than 95.0% release criterion. Net peptide content of 20.32 mg is reported against a nominal 20 mg / 2 mL label claim.

## 1b BLEND COMPONENTS

one content row per active

| COMPONENT | CAS | FORMULA | MASS (DA) | LABEL (MG) | CONTENT (MG) | AREA % |
|---|---|---|---|---|---|---|
| BPC-157 | 137525-51-0 | C62H98N16022 | 1419.56 | 10 | 9.60 | 49.80 |
| TB-500 (Ac-LKKTETQ) | 885340-08-9 | C38H68N10014 | 889.02 | 10 | 10.40 | 50.20 |

## 3 REPRESENTATIVE CHROMATOGRAM

RP-HPLC-UV

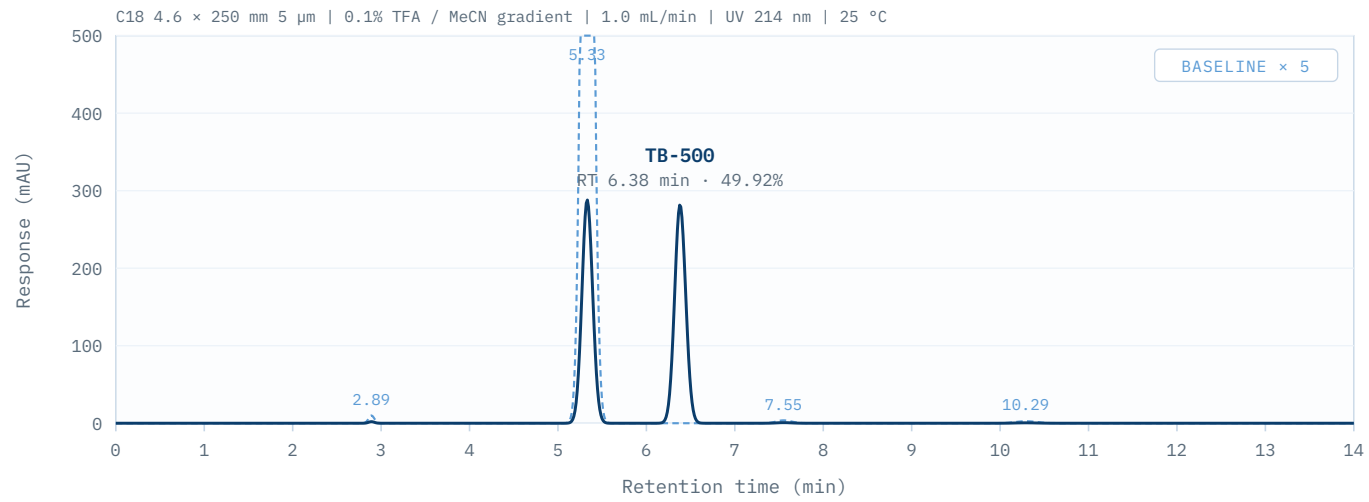



Figure 2. Chromatogram exported from the HPLC data system. — retention time, area, plate count and tailing factor define each peak envelope ($\sigma = t_R/\sqrt{N}$). Related substances shown magnified as the dashed trace, at the factor marked on the plot.

| PEAK | RT (MIN) | AREA (µAU·S) | AREA % | PLATES (N) | TAILING |
|---|---|---|---|---|---|
| BPC-157 (principal) | 5.33 | 2,476,500 | 49.53 | 8,705 | 1.06 |
| TB-500 (principal) | 6.38 | 2,496,000 | 49.92 | 11,746 | 1.07 |
| BPC-157 related substances (total) | 2.89 | 9,500 | 0.19 | 8,320 | 1.05 |
| TB-500 related substances (total) | 7.55 | 9,000 | 0.18 | 8,840 | 1.13 |
| Related substance 1 | 10.29 | 9,000 | 0.18 | 7,953 | 1.09 |
| **Total** | **—** | **5,000,000** | **100.00** | **—** | **—** |

## 4 MASS CONFIRMATION

LC-MS, ESI positive

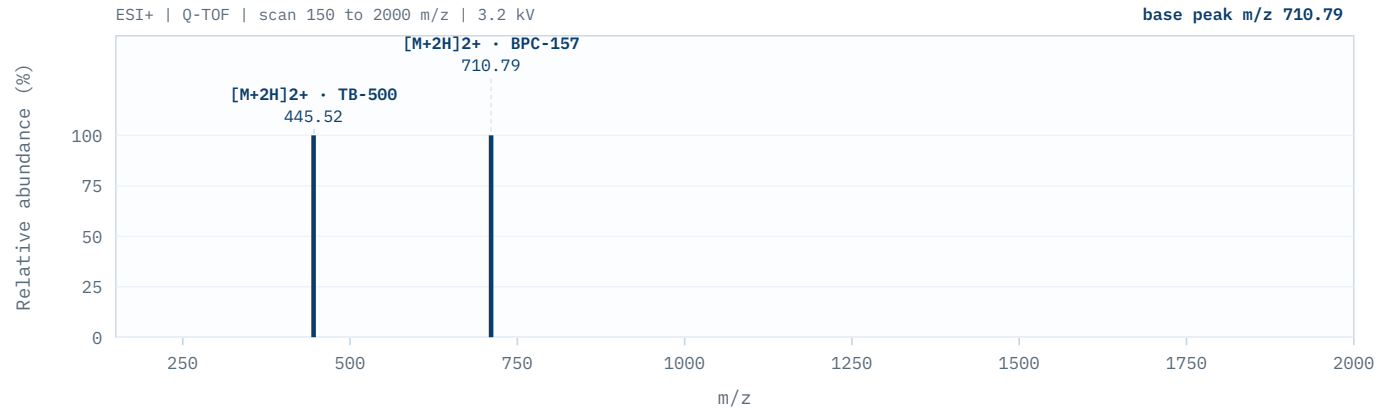


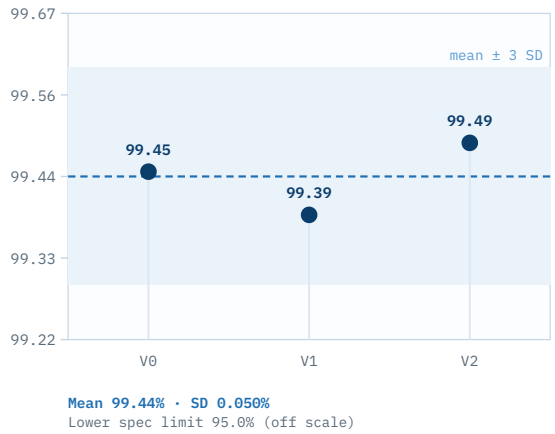

Figure 3. Acquired ESI(+) mass spectrum of the analyzed sample.

## 5 BATCH CONFORMITY

three independently sampled units

| UNIT | PURITY (%) | NET CONTENT (MG) | IDENTITY | STATUS |
|---|---|---|---|---|
| V0 (dedicated) | 99.45 | 20.32 | Confirmed | PASS |
| V1 | 99.39 | 20.27 | Confirmed | PASS |
| V2 | 99.49 | 20.39 | Confirmed | PASS |

**FIGURE 4 · CONFORMITY**




**Mean 99.44% · SD 0.050%**
Lower spec limit 95.0% (off scale)

## 6 COMPOSITION & FILL CHARACTERIZATION

content · volume · concentration

| PARAMETER | METHOD | SPECIFICATION | RESULT | UNIT | STATUS |
|---|---|---|---|---|---|
| Net peptide content | HPLC / AAA | Report only | 20.32 | mg | REPORTED |
| Fill volume | Gravimetric / volumetric | Report only | 2.02 | mL | REPORTED |
| Calculated concentration | Content / fill volume | Report only | 10.059 | mg/mL | REPORTED |
| Formulation matrix / vehicle | Gravimetric balance | Report only | 2004.34 | mg | REPORTED |
| Counterion (acetate) | Ion chromatography | Report only | 6.52 | % w/w | REPORTED |
| Residual solvents (TFA) | USP <467> headspace GC | Not Detected | ND | — | PASS |

## 7 CONTENT & FILL CONSISTENCY

pre-filled liquid presentation

| PARAMETER | RESULT | UNIT |
|---|---|---|
| Labeled content | 20 mg / 2 mL | — |
| Measured net peptide content | 20.32 | mg |
| Fill volume | 2.02 | mL |
| Calculated concentration | 10.059 | mg/mL |
| HPLC purity | 99.45 | % |

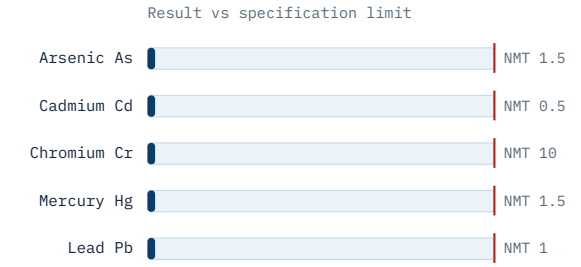
Figure 5. Pre-filled pen content and fill-volume consistency. No reconstitution step or lyophilized-cake mass balance is applicable to this presentation.

## 8 SAFETY & CONTAMINATION CONTROLS

ICP-MS · USP <71> <61> <85>

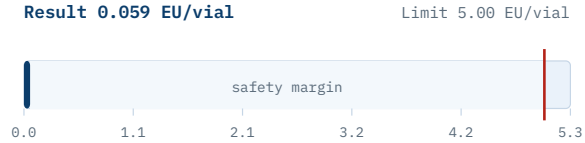
| PARAMETER | SPECIFICATION | RESULT | STATUS |
|---|---|---|---|
| Arsenic (As) | NMT 1.5 ppm | Not Detected | PASS |
| Cadmium (Cd) | NMT 0.5 ppm | Not Detected | PASS |
| Chromium (Cr) | NMT 10 ppm | Not Detected | PASS |
| Mercury (Hg) | NMT 1.5 ppm | Not Detected | PASS |
| Lead (Pb) | NMT 1 ppm | Not Detected | PASS |
| Sterility | No Growth (USP <71>) | No Growth | PASS |
| Bioburden | < 10 CFU/mL (USP <61>) | < 1 | PASS |
| Bacterial endotoxin | NMT 5.00 EU/vial | 0.059 | PASS |

**FIGURE 6 · ELEMENTAL HEADROOM**




ND = below LOQ (0.01 – 0.05 ppm)
red rule = specification limit

**FIGURE 7 · ENDOTOXIN MARGIN**




Result is 1% of the limit · ~84.7× margin

## 9 FOR THE RECIPIENT

plain-language summary

| | | | |
|---|---|---|---|
| **Purity (HPLC)** | Percent of the main peak relative to all detected peaks. | **Net peptide content** | Measured mass of active, separate from water and salt. |
| **NMT / NLT** | Not more than / not less than — an acceptance limit. | **Not Detected** | Below the method limit of quantitation (LOQ). |
| **EU/vial** | Endotoxin units per vial; acceptance limit is 5.00 EU/vial. | **RRT** | Relative retention time; an impurity position versus the main peak. |
| **Counterion** | The salt partner of the peptide. | **Karl Fischer** | Titration for residual water (USP <921>). |

**Storage.** Store the sealed pre-filled injection pen according to the product storage specification. Do not reconstitute. **Handling.** Research use only; not for human or veterinary use.

## 11 AUTHORIZATION

**Laboratory Director**
Name: Alejandro Navarro
Date: 08/25/2026

**Quality Assurance**
Name: Oliver Bennett
Date: 08/25/2026

**AUTHENTICATE THIS CERTIFICATE**

Scan the code or verify at https://labcentro.com/coa-verification/?cert=COA-2026-0829-BPCPEN-1392&code=KKHVEJTY
Verification ID: KKHVEJTY

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