# Certificate of Analysis

**ILS Laboratories**
8222 Vickers St, Suite 106, San Diego, CA 92111
(619) 329-3999 | ils-lab.com

## Tirzepatide - 40

**Tested for: Frontier Aminos**
FrontierAminos.com

**PASS**

| | | | |
|---|---|---|---|
| COA #: | **COA-2026-957002** | Analysis Date: | **07/08/2026** |
| Lot Number: | **TRZ40-15** | Appearance: | **Good** |
| Accession #: | **ACC-2026-7190** | Sample Matrix: | **Lyophilized** |
| Labeled Content: | **40** | Volume: | **3** |
| | | Date Received: | **06/30/2026** |

Scan to verify authenticity at ils-lab.com
**Access Code: LYRPYE4P**

Method: **Full QC Panel**

| Identity | Peptide Purity | |
|---|---|---|
| **Tirzepatide** | **99.90%** | Fentanyl Free |

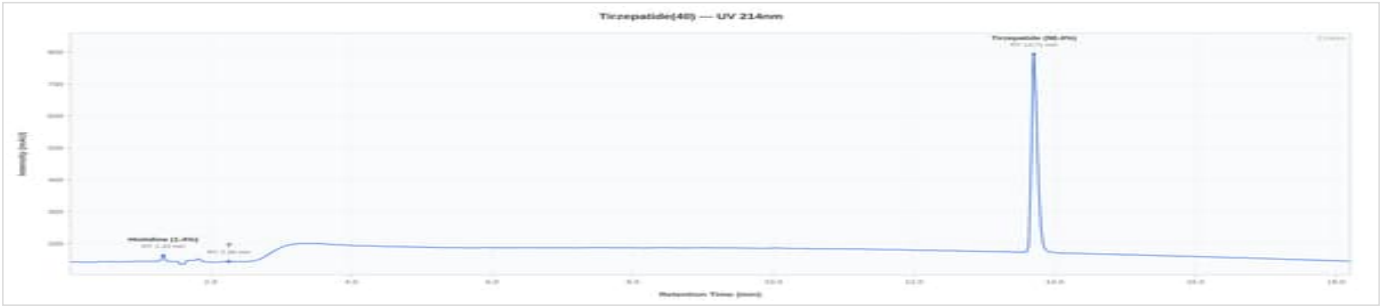


*Tirzepatide 40 - TRZ40-15*

## Purity, Identity & Quantitation (HPLC)

| Analyte | Specification | Result | Unit | Status |
|---|---|---|---|---|
| **Peptide Purity (HPLC)** | >= 95.0% | **99.90%** | % | **PASS** |
| **Net Peptide Content** | Report Only | **41.99** | mg | N/A |
| **Identity (HPLC-RTM)** | Tirzepatide | **Confirmed** | - | **PASS** |
| **Fentanyl Screen** | Immunoassay, 50 ng/mL cutoff | **Not Detected** | - | **PASS** |

## HPLC Chromatogram



*Representative chromatogram, Dedicated V0*

## HPLC Conformity Testing Results (4 samples tested)

| Sample | Purity | NPC | ID | Result |
|---|---|---|---|---|
| **Dedicated V0** | 99.75% | 41.26 mg | Confirmed | **PASS** |
| **Conformity V1** | 99.90% | 41.99 mg | Confirmed | **PASS** |
| **Conformity V2** | 99.79% | 42.72 mg | Confirmed | **PASS** |
| **Conformity V3** | 99.57% | 41.52 mg | Confirmed | **PASS** |
| **Mean** | **99.75%** | **41.87 mg** | — | — |
| **Std Dev** | **0.1188%** | **0.5549 mg** | — | — |

## Heavy Metals Analysis (ICP-MS)

| Test | 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 Testing (PCR)

| Test | Specification | Result | Status |
|---|---|---|---|
| **Sterility (PCR)** | No Growth | **No Growth** | **PASS** |

## Endotoxin Testing (USP <85>)

| Test | Specification | Result | Status |
|---|---|---|---|
| **Endotoxin (USP <85>)** | Report Result | **0.076 EU/mL** | **Reported** |

*About this result: Endotoxin is reported as a quantitative value. Acceptable limits vary by product type and matrix, so no universal pass/fail threshold applies to RUO products. This result is below commonly referenced endotoxin thresholds.*

### Notes & Methodology

1. Date Tested: 07/08/2026. Methods: Purity, Identity & Quantitation (HPLC).
2. The sample was confirmed to be Tirzepatide by HPLC. Identification by chromatographic retention time comparison with a reference standard.
3. Elemental impurities analyzed by ICP-MS per USP <233> methodology. Acceptance criteria are internal laboratory quality screening limits for research-use materials and do not represent evaluation against any specific pharmacopeial monograph or product specification.
4. Endotoxin tested per USP <85> kinetic chromogenic method. Acceptance criteria per client specification.
5. Peptide purity determined by RP-HPLC area normalization at 214 nm. Value represents the percentage of the target peptide relative to all peptide-related peaks. Non-peptide process-related impurities, if detected, are excluded from the calculation.
6. Purity values are capped at 99.9% to reflect instrument limit of detection (LOD). Trace impurities below the detection threshold may be present.
7. Chromatogram shown is representative: Dedicated V0 (99.75% purity, closest to batch mean of 99.75%).
8. Accreditation Scope: ILS Laboratories maintains ISO/IEC 17025 accreditation for activities listed in its published PJLA scope. Peptide testing reported on this certificate is performed for Research Use Only.
9. This certificate reports analytical results for the sample(s) submitted to ILS Laboratories for testing. All sample identifications, product names, brand names, lot/batch numbers, and labeled content are provided by the submitting party and have not been independently verified. Results reflect only the analytical testing of the specific sample(s) provided and do not constitute an evaluation or endorsement of the manufacturer's processes, quality systems, or overall production. ILS Laboratories makes no representations regarding the intended use, safety, efficacy, regulatory status, or intellectual property ownership of any materials tested.

ILS LABS

**Issued by ILS Laboratories**
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Lab Director
07/08/2026

COA #: **COA-2026-957002**
Access Code: **LYRPYE4P**
Verify: portal.ils-lab.com/verify/igxhUycNqYs_kRuR
Issued: 07/08/2026



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This certificate relates only to the sample(s) tested.