Cold-Chain Integrity in Research Peptide Logistics

Rev. 3 · Effective 2025-01 · Quality Assurance Department

Why Cold Chain Matters

Peptides are generally robust as a dry lyophilized powder, but exposure to elevated temperatures during transit can accelerate aggregation, oxidation, and deamidation reactions that are not always detectable by visual inspection. A documented cold chain provides assurance that the material received in the laboratory is chemically equivalent to the material released by quality control.

Peptilune Shipping Standard

All catalog material is packed with pre-conditioned phase-change coolant rated for 72 hours at < 8 °C, inside an insulated container with a calibrated temperature logger enclosed. Shipments are routed via priority air freight with active monitoring; any excursion above 15 °C triggers an automatic hold and replacement at no cost to the customer.

Temperature Logger Data

Each shipment includes a single-use USB temperature logger that records ambient temperature at 5-minute intervals from packing through delivery. The PDF report can be retrieved by plugging the logger into any computer; we recommend archiving this report alongside the Certificate of Analysis for traceability.

Receiving Procedure

1. Inspect the package for visible damage before signing.

2. Open the logger report and confirm no excursion above 15 °C for more than 30 minutes cumulative.

3. Transfer vials immediately to -20 °C storage.

4. If any anomaly is observed, photograph the logger report and contact support@peptilune.com within 48 hours.

Stability Margin

Internal stability studies have shown that lyophilized peptides exposed to ambient conditions (20–25 °C) for up to 7 days suffer no measurable change in HPLC purity or mass-spectrometric identity for the catalog sequences released by Peptilune. The cold chain therefore exists as an additional safety margin rather than a strict necessity for short transit windows.

Customer Responsibilities

Once delivered, custody of the cold chain transfers to the receiving laboratory. Long-term storage at -20 °C or below in the original sealed vials is required for the published shelf life to apply.

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