Peptide Stability & Shelf Life Guide

Overview

Peptides are delicate biological molecules that may degrade when exposed to environmental factors such as heat, moisture, light, or contamination. Maintaining appropriate storage conditions is essential for preserving peptide stability.

Stability of Lyophilized Peptides

Lyophilized peptides are generally the **most stable form** of peptide storage.

When stored properly:

- **Refrigerated (2°C – 8°C)** storage is commonly recommended
- **Freezer storage (-20°C)** may extend stability for long-term storage
- Protection from moisture and light helps maintain integrity

Unmixed peptides are typically more stable than peptides in solution.

Stability After Reconstitution

Once peptides are dissolved into solution, stability may decrease due to increased exposure to environmental factors.

Recommended practices include:

- Store prepared solutions **refrigerated (2°C – 8°C)**
- Protect from light
- Avoid contamination
- Minimise repeated freeze-thaw cycles

Proper handling helps reduce degradation risk.

Factors That May Affect Stability

Peptide degradation can be accelerated by:

- Heat exposure
- Ultraviolet light
- Moisture
- Oxidation
- Bacterial contamination
- Repeated freeze-thaw cycles

Maintaining controlled laboratory conditions can help preserve peptide integrity.

Long-Term Storage Considerations

For extended storage periods:

- Lyophilized peptides may be stored **frozen**
- Prepared solutions may be divided into **smaller aliquots** before freezing
- Avoid repeatedly thawing and refreezing solutions

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Peptides referenced in this document are **not approved by the Therapeutic Goods Administration (TGA)** for human or veterinary use.

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