

## Peptide Storage and Handling Guidelines

To ensure stability of your peptides, store and handle them according to the guidelines below.

### Storage Guidelines for Lyophilized Peptides:

The stability of each peptide is unique and is dependent on its sequence. Lyophilized peptides should be stored at  $-20^{\circ}\text{C}$ , away from bright light. Most lyophilized peptides are stable for several years under these conditions, however, certain amino acid residues in peptide sequences can thwart long-term stability. Peptides containing Cys, Met, or Trp residues are prone to oxidation and require storage under anaerobic conditions to maintain stability. Peptides containing Asp, Glu, Lys, Arg, or His are prone to moisture absorption from the air, called deliquescence. These peptides should be stored in a desiccator in a tightly capped vial.

In addition, peptides that undergo freeze-thaw cycles are susceptible to degradation. Whenever possible, the amount of peptide required for each experimental set should be pre-determined, and peptides should be aliquoted into separate vials accordingly. Aliquoting reduces the number of freeze-thaw cycles, and reduces the amount of air exposure to the peptide.

### Storage Guidelines for Peptides in Solution:

The shelf-life of peptides in solution is very limited, much shorter than that of lyophilized peptides. This is especially true for peptides whose sequences contain Cys, Met, Trp, Asp, Gln, and N-terminal Glu. In addition, peptides stored in solution are susceptible to bacterial degradation, therefore GenScript does not recommend storing peptides in solution. However, if storage of your peptide in solution is unavoidable, use sterile buffers at pH 5-6 to dissolve your peptide, divide the peptide solution into aliquots, and store the aliquots at  $-20^{\circ}\text{C}$ . Avoid freeze-thaw cycles of the aliquots. You may choose to pass your peptide solution through a  $0.2\ \mu\text{m}$  filter to remove potential bacterial contamination from your peptide solution. If you dissolve too much of your peptide, re-lyophilization of the peptide solution will help you to maintain the stability of the excess peptide.

### Preparing Peptides for Use:

When preparing your peptides for use in an experiment or assay, follow the guidelines below:

1. Warm the peptide vial to room temperature before opening.
2. For best results and reproducibility, rehydrate peptide just before use.
3. Do not attempt to weigh out smaller portions. Do not refreeze any unused portions.

**Peptide Stability Guidelines Quick Chart**

<b>For all peptides</b>	<b>DO</b> avoid repeated freeze-thaw cycles <b>DON'T</b> store peptides long-term in solution <b>DON'T</b> repeatedly open the stock peptide vial
<b>For peptides containing Cys, Met, or Trp residues</b>	<b>DO</b> limit peptide exposure to air <b>DO</b> purge assay buffers with argon or nitrogen gas <b>DO</b> store peptides in tightly capped vials
<b>For peptides containing Asp, Glu, Lys, Arg, or His</b>	<b>DO</b> limit peptide exposure to air <b>DO</b> store lyophilized peptides in a dessicator <b>DO</b> store peptides in tightly capped vials
<b>For peptides that must be stored in solution</b>	<b>DO</b> avoid repeated freeze-thaw cycles <b>DO</b> aliquot your peptide solution according to daily experimental needs <b>DO</b> use sterile buffers to dissolve your peptide <b>DO</b> filter your peptide using a 0.2 $\mu\text{m}$ filter to remove bacterial contamination