Custom Anaspec® Peptides

Handling and Storage Information

For long-term storage of peptides, lyophilization is highly recommended. Lyophilized peptides can be stored for years at temperatures of -20 °C or lower with little or no degradation. Peptides in solution are much less stable. Peptides are susceptible to degradation by bacteria so they should be dissolved in sterile, purified water.

Peptides have widely varying solubility properties. The main problem associated with the dissolution of a peptide is secondary structure formation. This formation is likely to occur with all but the shortest of peptides and is even more pronounced in peptides containing multiple hydrophobic amino acid residues. Secondary structure formation can be promoted by salts.

In order to reconstitute the peptide, distilled water or a buffer solution should be utilized. Some peptides have low solubility in water and must be dissolved in other solvents such as 10% acetic acid for a positively charged peptide or 10 % ammonium bicarbonate solution for a negatively charged peptide. Other solvents that can be used for dissolving peptides are acetonitrile, DMSO, DMF, or isopropanol. Use the minimal amount of these non-aqueous solvents and add water or buffer to make up the desired volume. After peptides are reconstituted, they should be used as soon as possible to avoid degradation in solution. Unused peptide should be aliquoted into single-use portions, relyophilized if possible, and stored at -20 °C. Repeated thawing and refreezing should be avoided.

Peptides containing methionine, cysteine, or tryptophan residues can have limited storage time in solution due to oxidation. These peptides should be dissolved in oxygen-free solvents. To prevent the damage caused by repeated freezing and thawing of peptides, dissolving the amount needed for the immediate experiment and storing the remaining peptide in solid form is recommended.

For peptides that tend to aggregate (usually peptides containing cysteines), add 6 M urea, 6 M urea with 20 % acetic acid, or 6 M guanidine • HCl to the peptide, then proceed with the necessary dilutions.

Contact:
Proteomics.services@eurogentec.com

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