Basic info

- **Synthesis scale.** Synthesis is carried out at 100 µmole, 250 µmole or 1 nmole scale. On an average, a synthesis scale of 100 µmoles will yield about 50-70 mg of a 10-residue peptide and 100-150 mg of a 20-residue peptide depending on the substitution level of the resin.

- **Delivery.** After the synthesis, the peptide is de-protected and cleaved from the resin with trifluoroacetic acid, precipitated with ether and dried. The dried material will be provided as a "crude" preparation; percentage purity usually depends on scale and sequence being synthesized. Turnaround time is about one to three weeks.

- **Quality control.** The core has a strict quality control in peptide synthesis. An LC-MS analysis (electrospray mass spectrometry) will be provided for every peptide as assessment of the quality of synthesized product. When necessary MALDI-TOF (Matrix Assisted Laser Desorption Ionization –Time Of Flight) mass spectrometry for peptide can be requested. The laboratory can also provide the amino acid analysis of the syntezised peptide if requested.

- **Modification of synthetic peptides.** The peptides are routinely synthesized as peptides amides or N-acetylated derivatives. Peptides containing another unusual or modified amino acids (e.g., phospho-Tyr, phospho-Ser/Thr, biotinylation, fluorochrome conjugation (fluorescein, rhodamine) can be synthesized but the requester will be charged the additional costs required to carry out this synthesis.

- **Handling and storage of peptides.** The lyophilized crude should be stored as dry powder at a temperature from -20°C to -70°C in a desiccator, if possible. After lyophilization, peptides retain significant amounts of water and counter-ions like trifluoroacetate paired with the charged residues. Water and counter-ion content in a given peptide product vary widely and combined together may be as high as 30%. The exact concentration of the peptide in the crude product can be determined by amino acid analysis using a small aliquot from the crude peptide solution. It should be taken into account that peptides are considerably less stable in solution than lyophilized. Consequently, they should be used as soon as possible to avoid degradation, once the lyophilized preparation is reconstituted. Unused peptide should be aliquoted in single-use doses, relyophilized if possible, and stored at temperatures below -20°C. Peptides containing cysteine, methionine or tryptophan, should be kept in an oxygen-free environment

- **Methods for dissolve peptides.** Peptides show a wide assortment of solubility properties. Water should be tried as solvent first. In the case that they result water insoluble, the following procedures may work:

    1. A basic solution, as 10% ammonium bicarbonate, should be appropriated for many of acidic peptides. It should be taken into account that this solution will promote the formation of disulphide bonds on the case of peptides containing

cysteine. Once dissolved in a small volume the peptide normally can be brought to the desired concentration with plain water.

2. 30% acetic acid normally works with basic peptides. As above, once dissolved in a small volume the peptide normally can be brought to the desired concentration with plain water.

3. For a very hydrophobic peptide DMSO may work. In many cases the DMSO solution can be brought to the working concentration with water.

4. For peptides with aggregation propensity, 6 M urea, 6 M urea with 20% acetic acid, or 6 M guanidine chloride can be tried. Afterwards, proceed with the necessary dilutions in water. DTT or mercaptoethanol may be added to the solvent in the case of peptides containing cysteine.