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Ser Ala Ala Ser Cys His His Ala Tyr Ile Val Leu Cys Ile Glu Asn
 1 5 10 15

Ser Phe Met Thr Ser Phe Ser Lys
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What is claimed is:

1. A solid phase synthesis method for preparing a peptide-PEG-phospholipid conjugate, which comprises the steps of:

- (1) synthesizing an amino acid residue protected peptidyl resin in solid phase;
- (2) conjugating a PEG and a phospholipid to the peptidyl resin to form a peptide-PEG-phospholipid resin;
- (3) cleaving the peptide-PEG-phospholipid resin to obtain a peptide-PEG-phospholipid;
- (4) removing at least one side chain protecting group from at least one amino acid of the peptide-PEG-phospholipid, thereby forming a peptide-PEG-phospholipid conjugate; and
- (5) optionally modifying the peptide portion of the peptide-PEG-phospholipid conjugate to a cyclic form after any of the foregoing steps (1)–(4);

wherein the PEG is conjugated to each of the peptidyl resin and the phospholipid by a single amide bond.

2. The method of claim 1, where in the peptidyl resin is synthesized by a process selected from the group consisting of Fmoc solid phase peptide synthesis and Boc solid phase peptide synthesis.

3. The method of claim 1, wherein the peptide-PEG-phospholipid resin is formed by conjugating a PEG to the peptidyl resin to obtain a PEG-peptidyl resin and by subsequently conjugating a phospholipid to the PEG-peptidyl resin.

4. The method of claim 1, wherein the peptide-PEG-phospholipid resin is formed by conjugating a PEG-phospholipid to the peptidyl resin.

5. The method of claim 1, wherein the PEG has an average molecular weight in a range of approximately 100 to approximately 10,000 daltons.

6. The method of claim 1, wherein the amide bond is formed by an activating agent selected from the group consisting of dicyclohexylcarbodiimide/N-hydroxybenzotriazole (DCC/HOBt), 1,3-diisopropylcarbodiimide/N-hydroxybenzotriazole (DIPCDI/HOBt), and 1-(3-dimethylaminopropyl)-3-ethyl-carbodiimide/N-hydroxysuccinimide (EDC/HOSU).

7. The method of claim 1, wherein the amide bond is formed in at least one solvent selected from the group consisting of DCM, CHCl₃, DMF and THF.

8. The method of claim 1, wherein the amide bond is formed in a temperature range of approximately 20° C. to approximately 90° C.

9. The method of claim 1, wherein the cyclic form of the peptide portion is formed by an intramolecular linkage between a pair of components selected from the group consisting of two amino acids and at least one derivative of two amino acids.

10. The method of claim 9, wherein the intramolecular linkage is selected from the group consisting of disulfide, amide, ester, thioether, thioacetate, and thioacetamine.

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