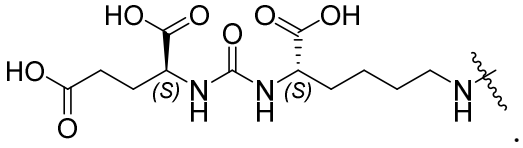
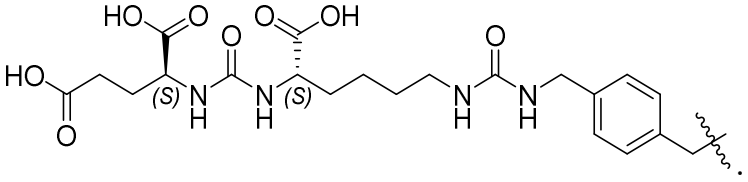
Claims

1. A conjugate compound or a pharmaceutically acceptable salt thereof, comprising a payload and two targeting molecules, wherein the two targeting molecules are a synergistic molecule moiety and a prostate-specific membrane antigen ligand moiety, respectively, wherein the synergistic molecule binds to a molecule selected from the group consisting of FOLR1, TRPV6, SSTR2 and GNRHR.

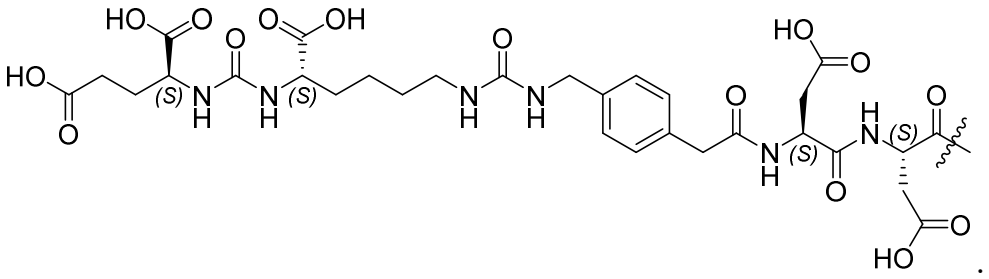
2. The conjugate compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein the prostate-specific membrane antigen ligand has the following structure:



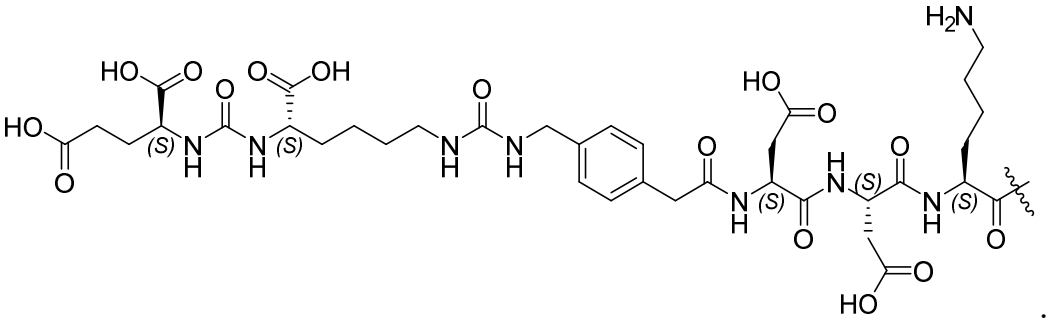
3. The conjugate compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein the prostate-specific membrane antigen ligand has the following structure:



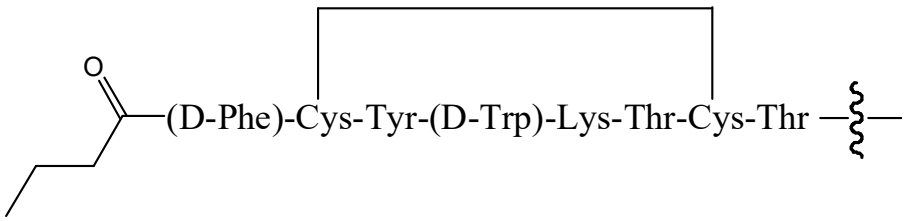
4. The conjugate compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein the prostate-specific membrane antigen ligand has the following structure:



5. The conjugate compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein the prostate-specific membrane antigen ligand has the following structure:



6. A conjugate compound or a pharmaceutically acceptable salt thereof, comprising a payload and two targeting molecules, wherein the two targeting molecules are a synergistic molecule moiety and a ligand moiety represented by formula (I), respectively, wherein the synergistic molecule binds to FOLR1:



(I).

7. A conjugate compound or a pharmaceutically acceptable salt thereof, comprising a payload and two targeting molecules, wherein the two targeting molecules are a synergistic molecule moiety and P10, respectively, wherein the synergistic molecule binds to FOLR1, and the payload is camptothecin or a derivative of camptothecin, wherein the derivative of camptothecin is selected from

the group consisting of irinotecan, SN-38, Dxd, topotecan, GI-147211C, 9-aminocamptoth-ecin, 7-hydroxymethyl camptothecin, 7-aminomethyl camptothecin, 10-hydroxy camptothecin, (20S)-camptothecin, 9-nitrocamptothecin, gimatecan, karenitecin, silatecan, exatecan, diflomotecan, belotecan, lurtotecan and S39625.

8. The conjugate compound or the pharmaceutically acceptable salt thereof according to any one of claims 1-6, wherein the synergistic molecule is a folate or an analogue of folate, and wherein the analogue of folate is selected from the group consisting of 5-methyltetrahydrofolate, 5-formyltetrahydrofolate, methotrexate, and 5,10-methylenetetrahydrofolate.

9. The conjugate compound or the pharmaceutically acceptable salt thereof according to claim 1 or 6, comprising one, two, three, four or more payloads.

10. The conjugate compound or the pharmaceutically acceptable salt thereof according to claim 1 or 6, wherein the payload is selected from the group consisting of a small molecule compound, a nucleotide, a peptide, and a protein.

11. The conjugate compound or the pharmaceutically acceptable salt thereof according to claim 10, wherein the payload is a small molecule compound.

12. The conjugate compound or the pharmaceutically acceptable salt thereof according to claim 11, wherein the small molecule compound is selected from the group consisting of camptothecin and derivatives of camptothecin, auristatin and derivatives of auristatin, maytansine, a radionuclide complex, a cyclooxygenase-2 inhibitor, paclitaxel, epothilone, bleomycin, dactinomycin, plicamycin, and mitomycin C, wherein the derivative of camptothecin is selected from the group consisting of irinotecan, SN-38, Dxd, topotecan, GI-147211C, 9-aminocamptoth-ecin, 7-hydroxymethyl camptothecin, 7-aminomethyl camptothecin, 10-hydroxy camptothecin, (20S)-camptothecin, 9-nitrocamptothecin,

gimatecan, karenitecin, silatecan, exatecan, diflomotecan, belotecan, lurtotecan and S39625; and wherein the derivative of auristatin is selected from the group consisting of monomethyl auristatin E, monomethyl auristatin F, monomethyl auristatin D, AFP and AFHPA.

13. The conjugate compound or the pharmaceutically acceptable salt thereof according to claim 12, wherein the small molecule compound is camptothecin or a derivative of camptothecin, auristatin or a derivative of auristatin, a radionuclide complex or a cyclooxygenase-2 inhibitor, wherein the derivative of camptothecin is selected from the group consisting of irinotecan, SN-38, Dxd, topotecan, GI-147211C, 9-aminocamptoth-ecin, 7-hydroxymethyl camptothecin, 7-aminomethyl camptothecin, 10-hydroxy camptothecin, (20S)-camptothecin, 9-nitrocamptothecin, gimatecan, karenitecin, silatecan, exatecan, diflomotecan, belotecan, lurtotecan and S39625; and wherein the derivative of auristatin is selected from the group consisting of monomethyl auristatin E, monomethyl auristatin F, monomethyl auristatin D, AFP and AFHPA.

14. The conjugate compound or the pharmaceutically acceptable salt thereof according to any one of claims 1-13, wherein the payload is linked to at least one of the targeting molecules via a linker.

15. The conjugate compound or the pharmaceutically acceptable salt thereof according to claim 14, wherein the linker is a peptide linker, a disulphide linker, a pH-dependent linker or a combination of the above-mentioned linkers.

16. The conjugate compound or the pharmaceutically acceptable salt thereof according to claim 15, wherein the peptide linker is cleavable under a certain physiological environment by protease cleavage or reduction.

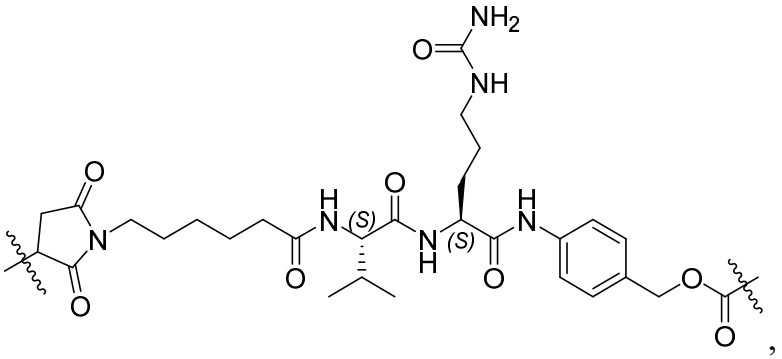
17. The conjugate compound or the pharmaceutically acceptable salt thereof according to claim 15 or 16, wherein the peptide linker is selected from the group

consisting of cysteine, lysine, lysine-lysine, valine-citrulline, phenylalanine-lysine, valine-lysine, cysteine-lysine, cysteine-glutamic acid, aspartic acid-aspartic acid, and aspartic acid-aspartic acid-lysine, and optionally, the carboxylic acid in the above-mentioned amino acids is amidated.

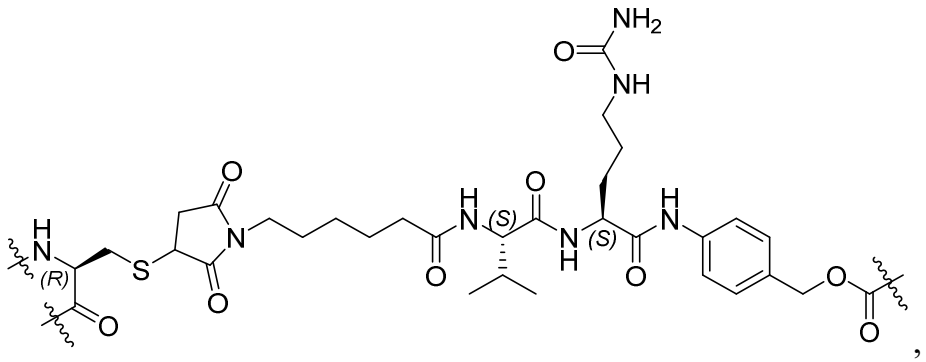
18. The conjugate compound or the pharmaceutically acceptable salt thereof according to claim 15, wherein the disulphide linker is selected from the group consisting of DMDS, MDS, DSDM and NDMDS.

19. The conjugate compound or the pharmaceutically acceptable salt thereof according to claim 15, wherein the pH-dependent linker is a cis-aconitic anhydride.

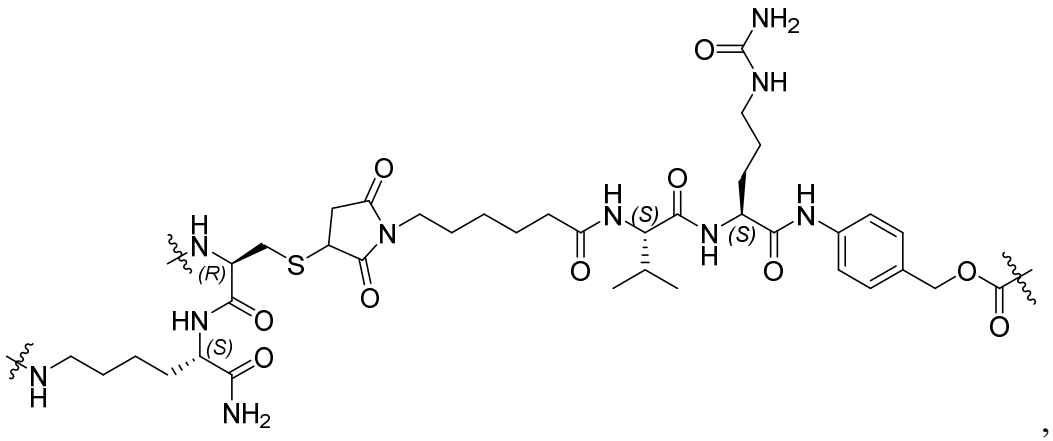
20. The conjugate compound or the pharmaceutically acceptable salt thereof according to claim 14, wherein the linker has the following structures:

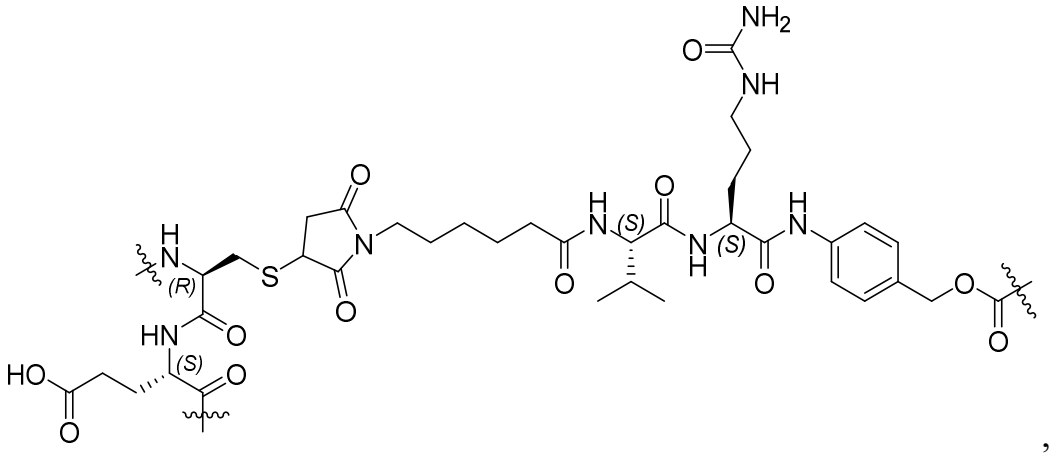


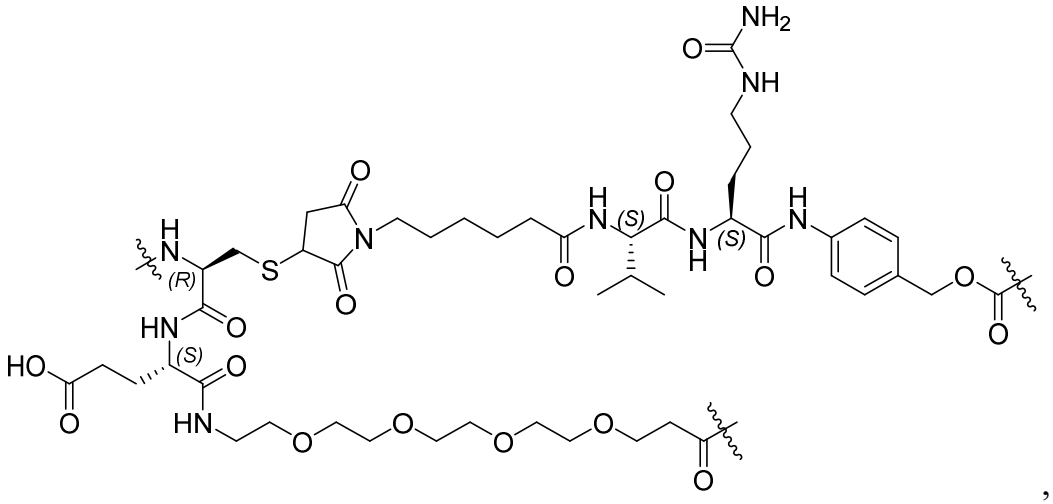
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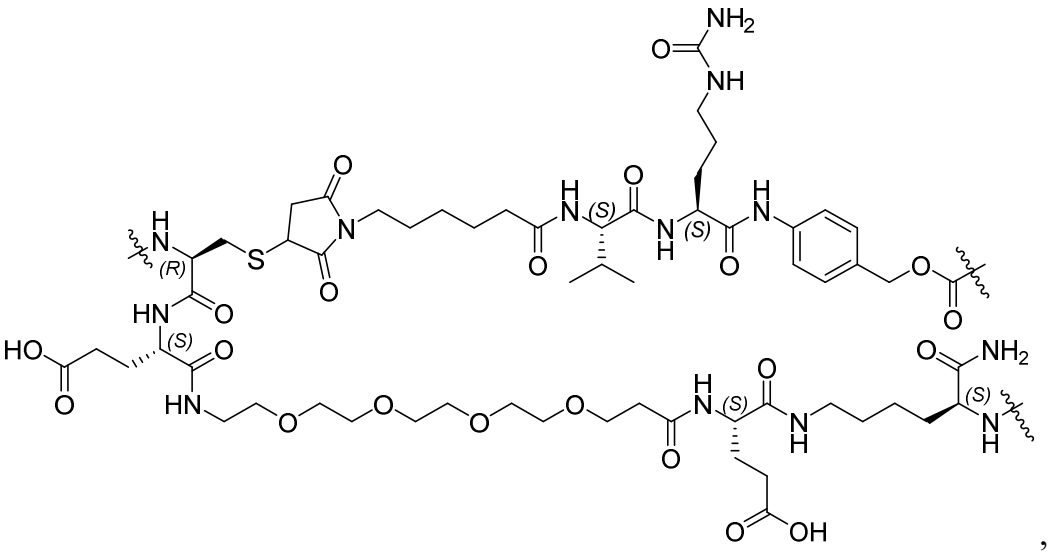


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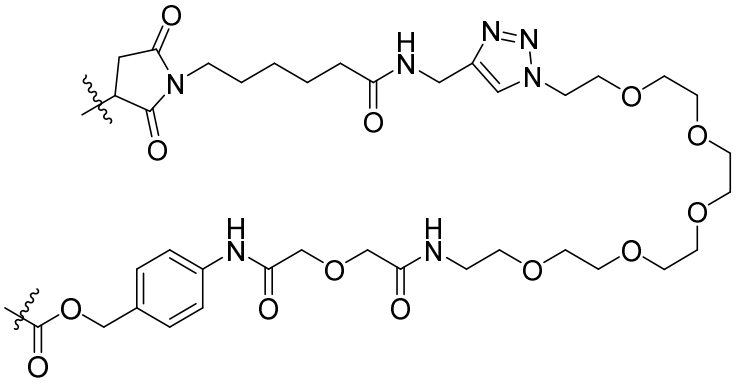

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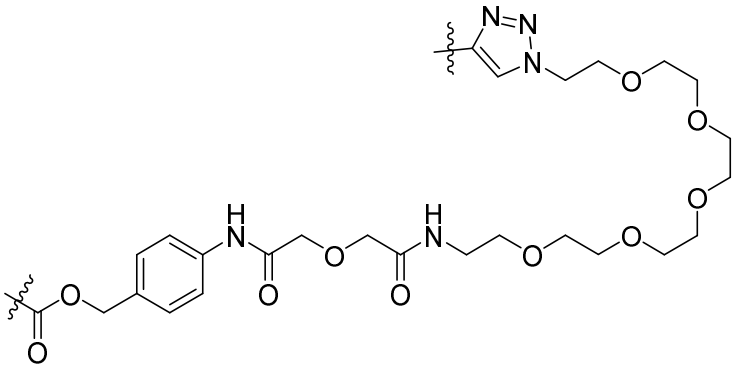

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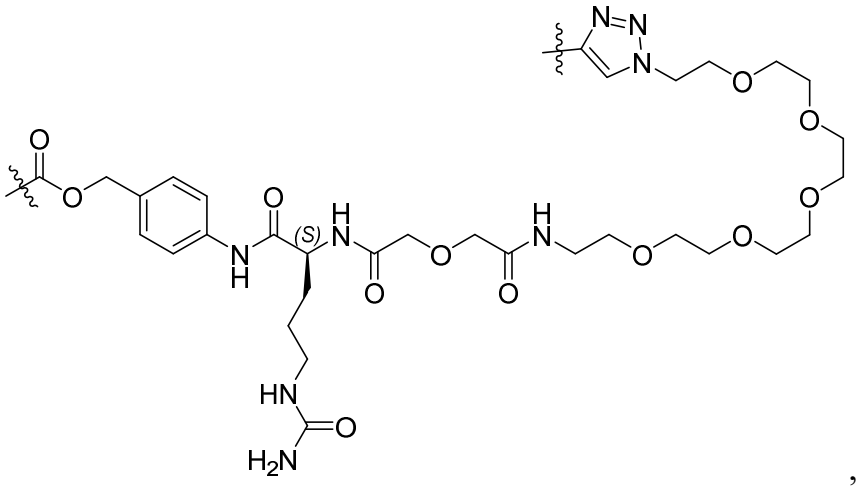
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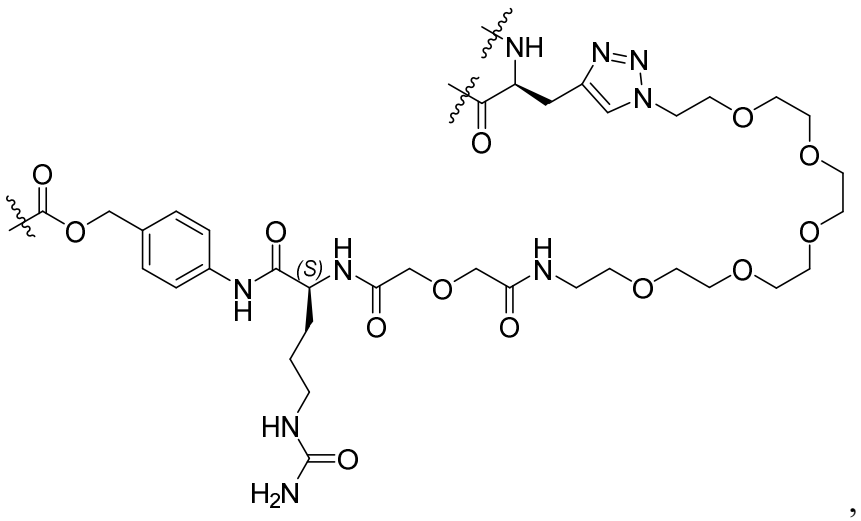
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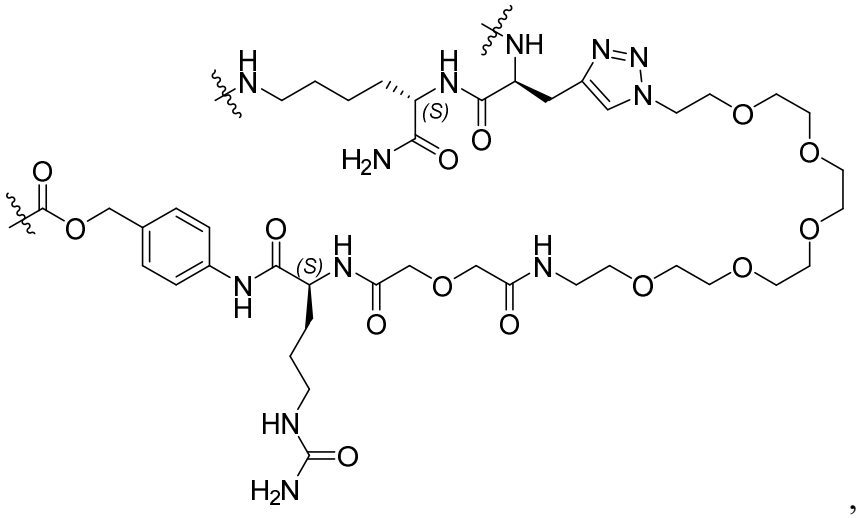
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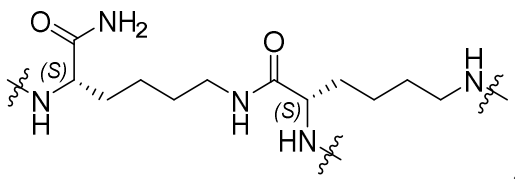
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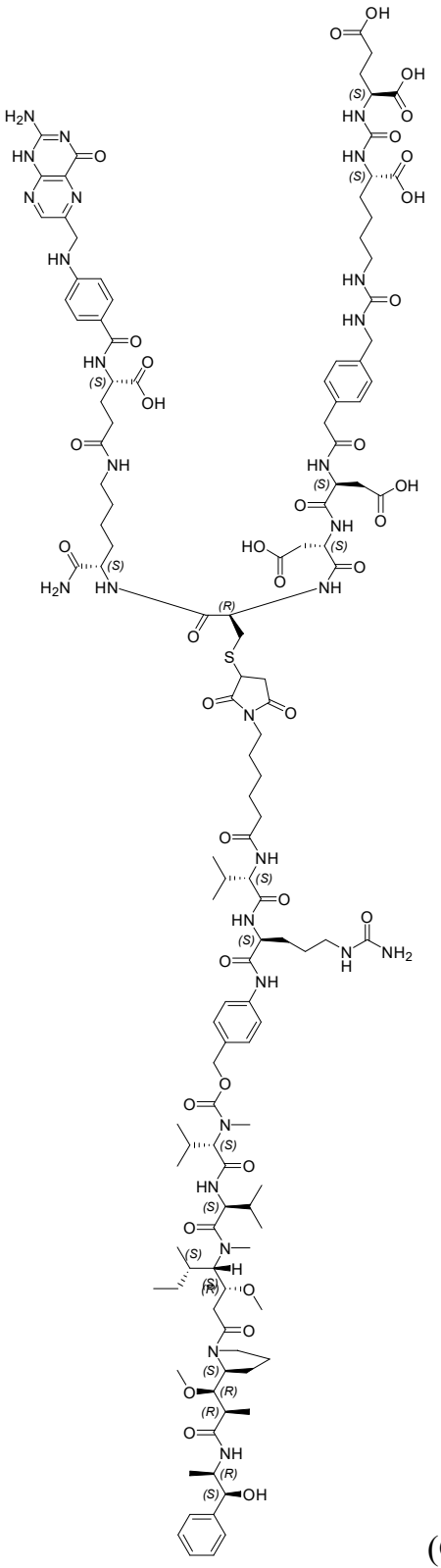
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or the linker is a combination of the above-mentioned structures and a peptide linker.

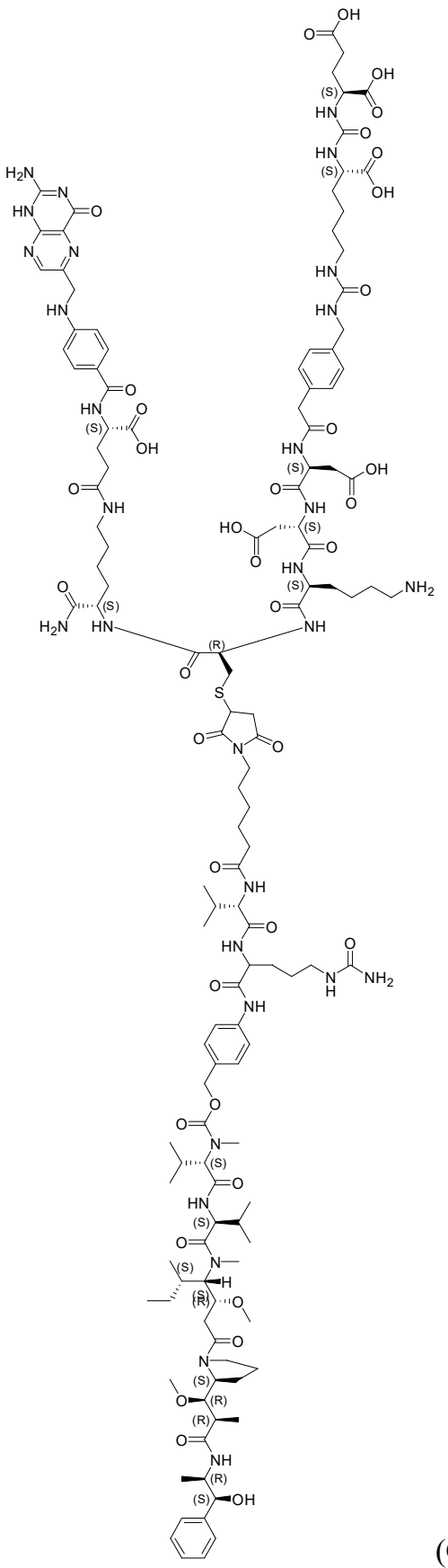
21. The conjugate compound or the pharmaceutically acceptable salt thereof according to any one of claims 1-20, wherein the two targeting molecules are linked to each other via a spacer.

22. The conjugate compound or the pharmaceutically acceptable salt thereof according to claim 21, wherein the spacer comprises the amino acid sequence selected from the group consisting of SEQ ID NOs: 1-14, Arg-Arg, Ala-Ser-Asn, Ala-Ala-Ala, Ser-Ser-Arg, Pro-Arg and Pro-Leu-Gly.

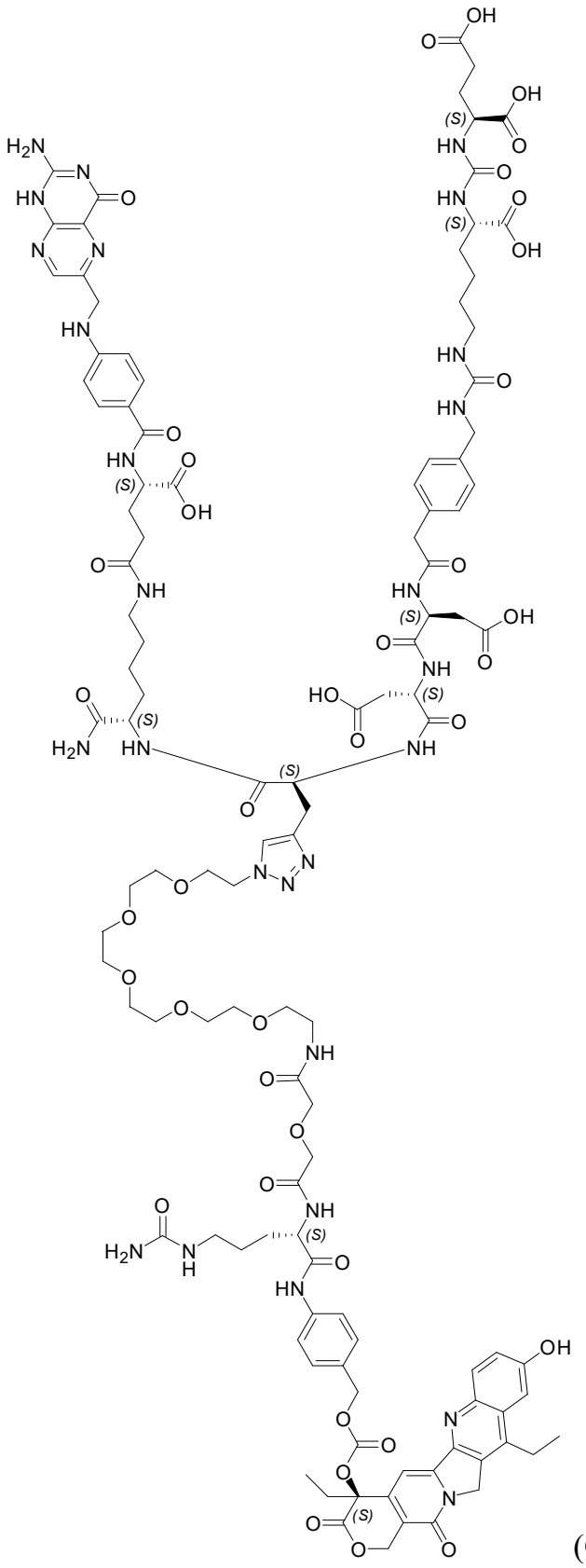
23. The conjugate compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein the conjugate compound is selected from the group consisting of the following compounds:



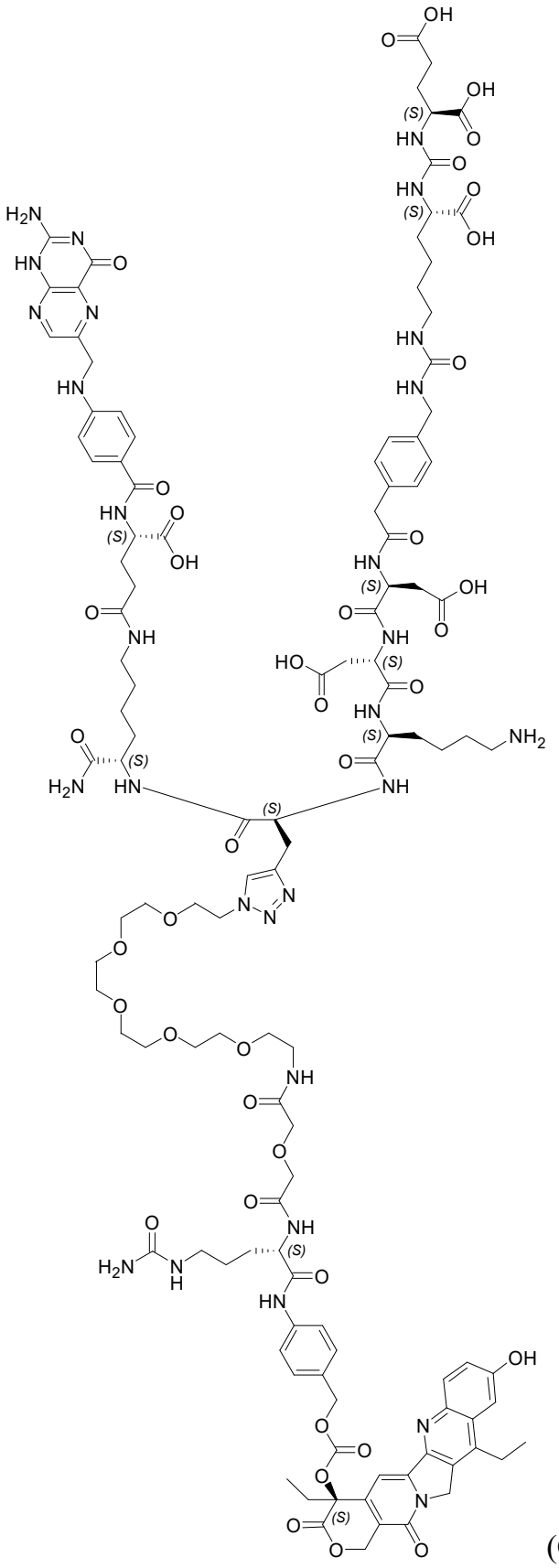
(CB-20B),



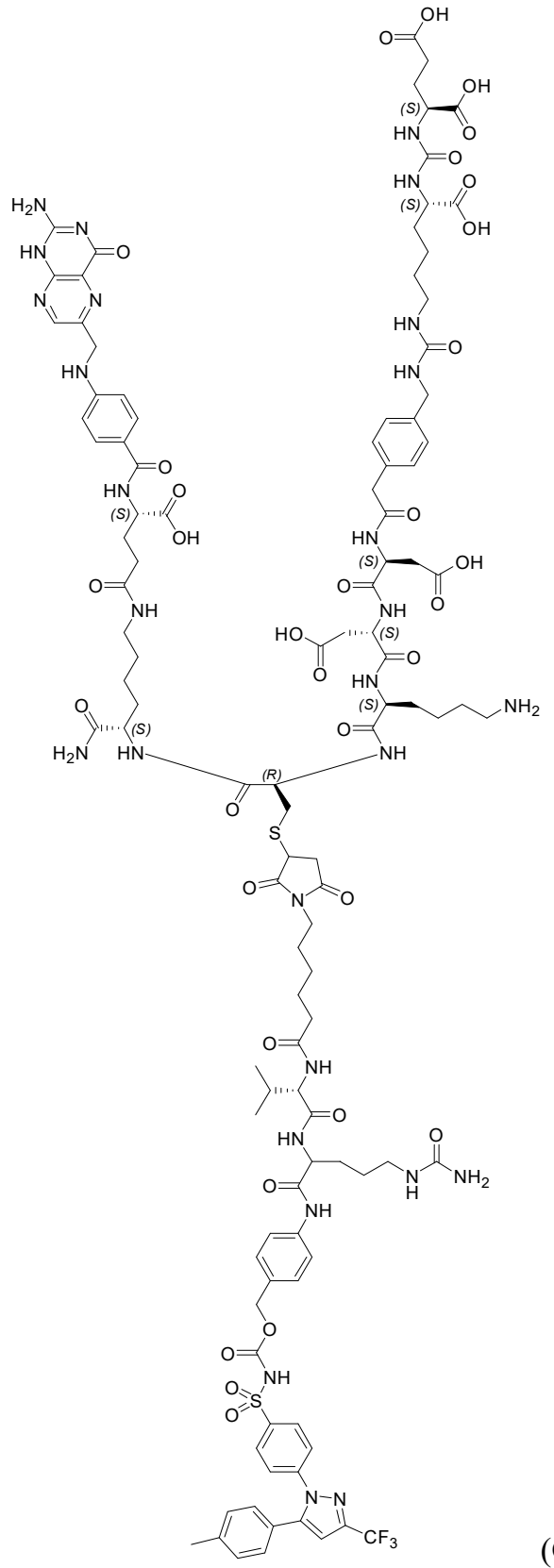
(CB-20BK),



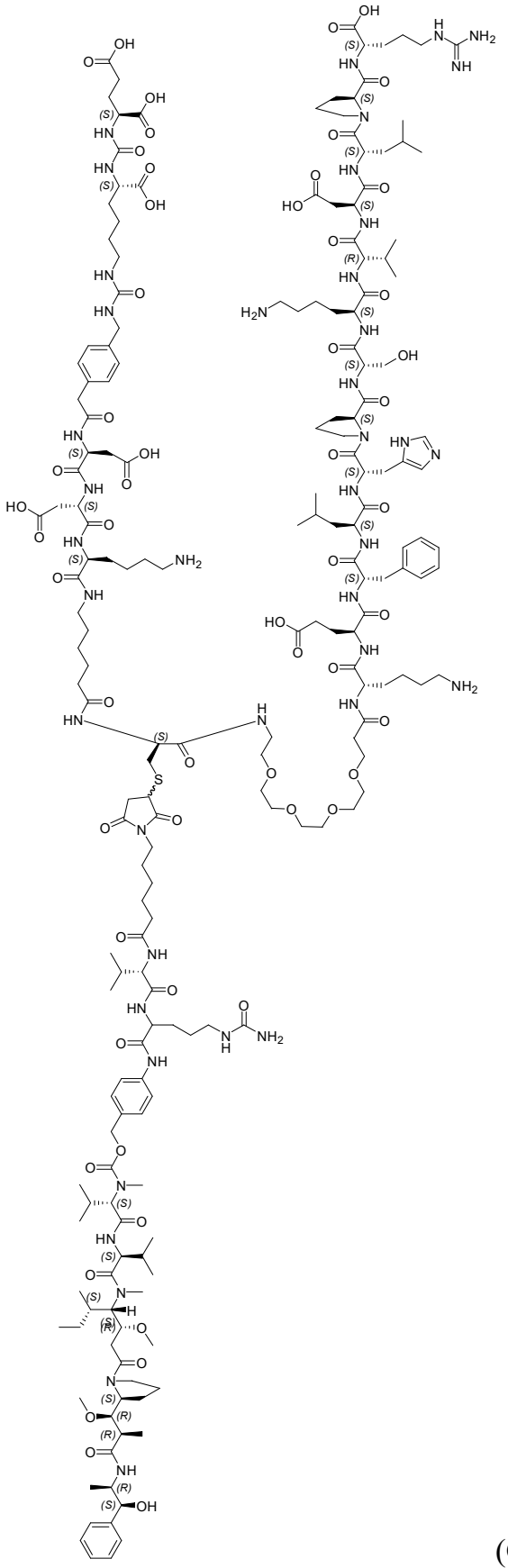
(CB-60S),



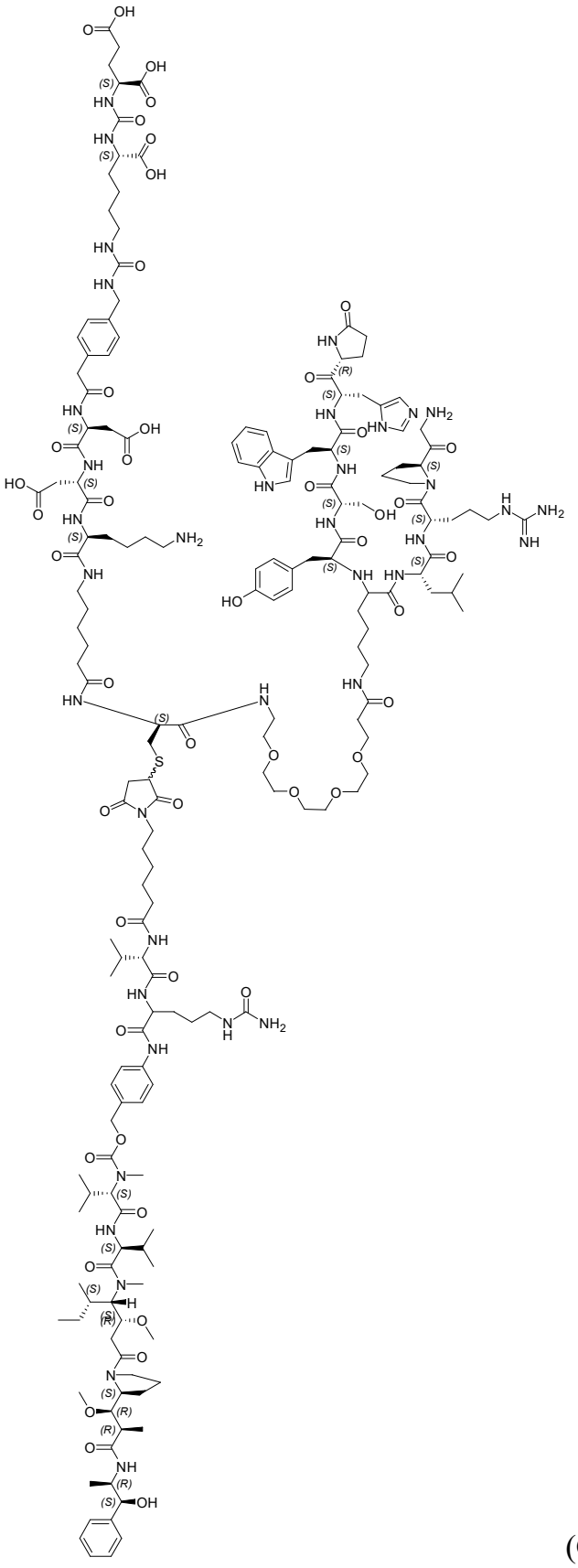
(CB-60SK),



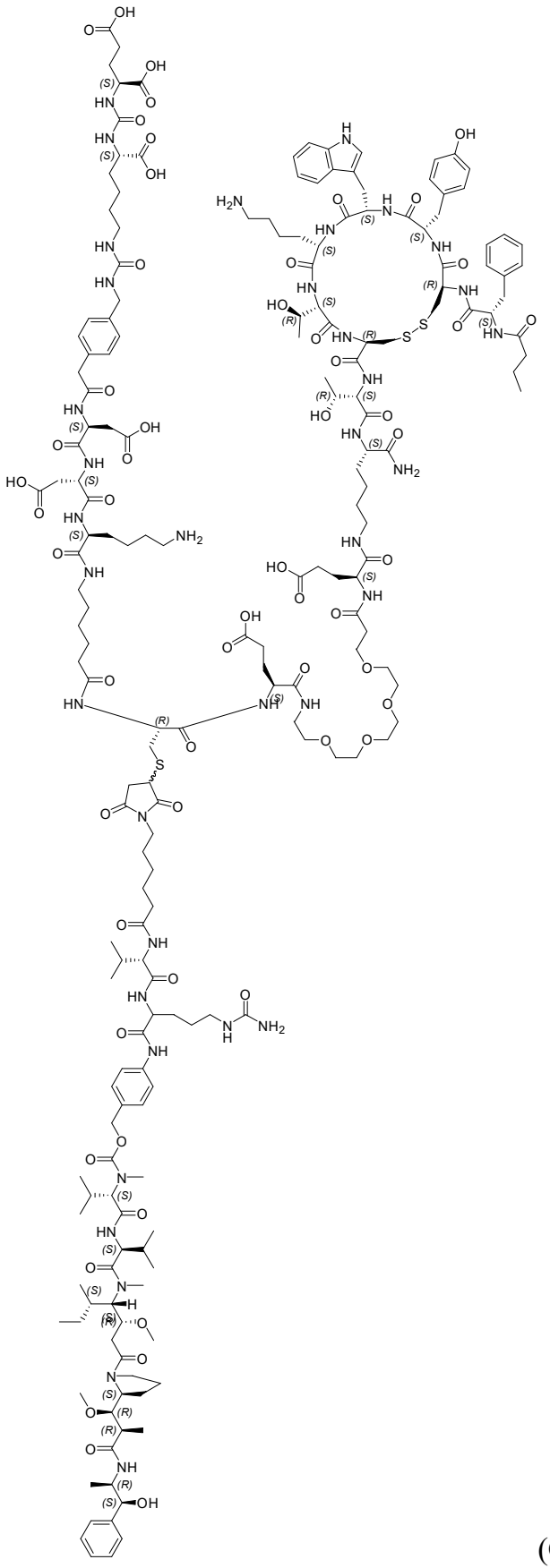
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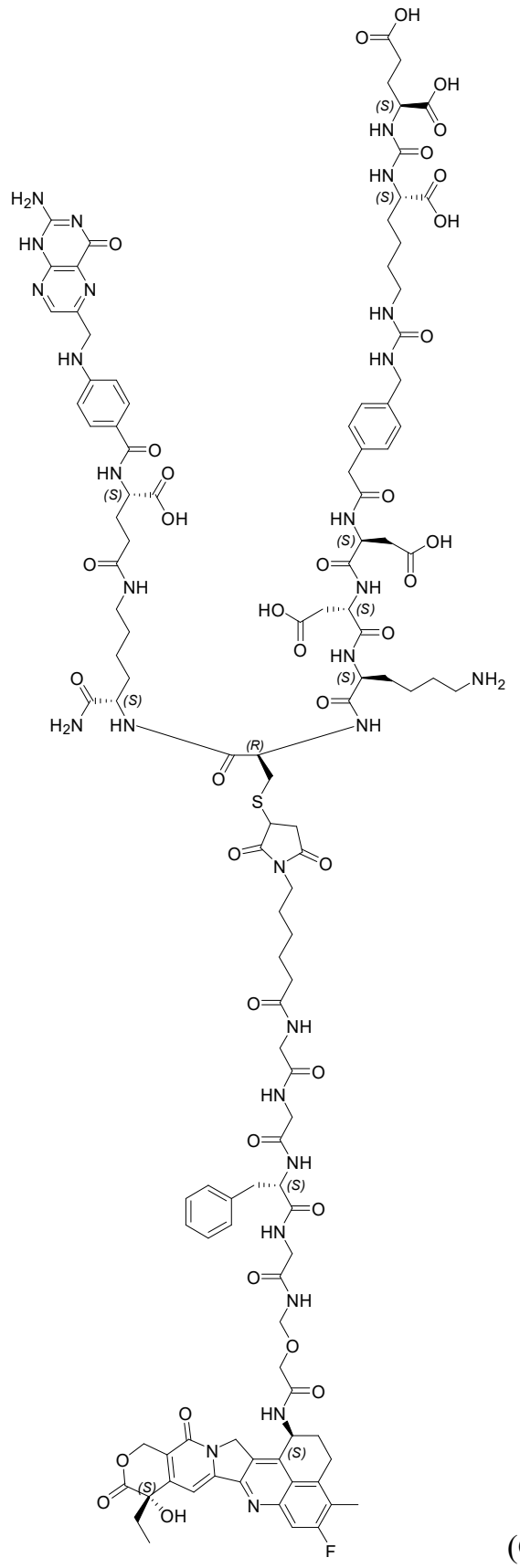
(CB-1020),



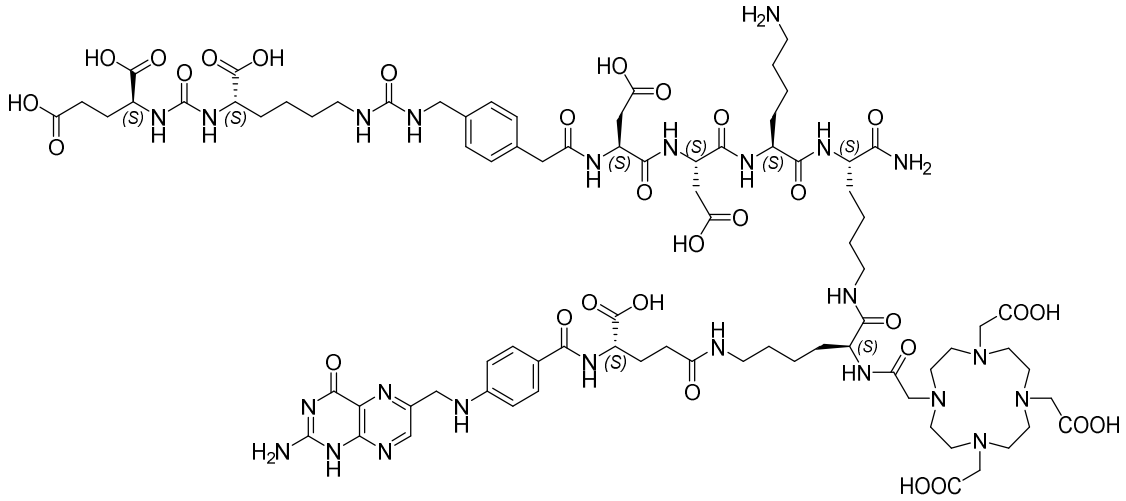
(CB-1320),



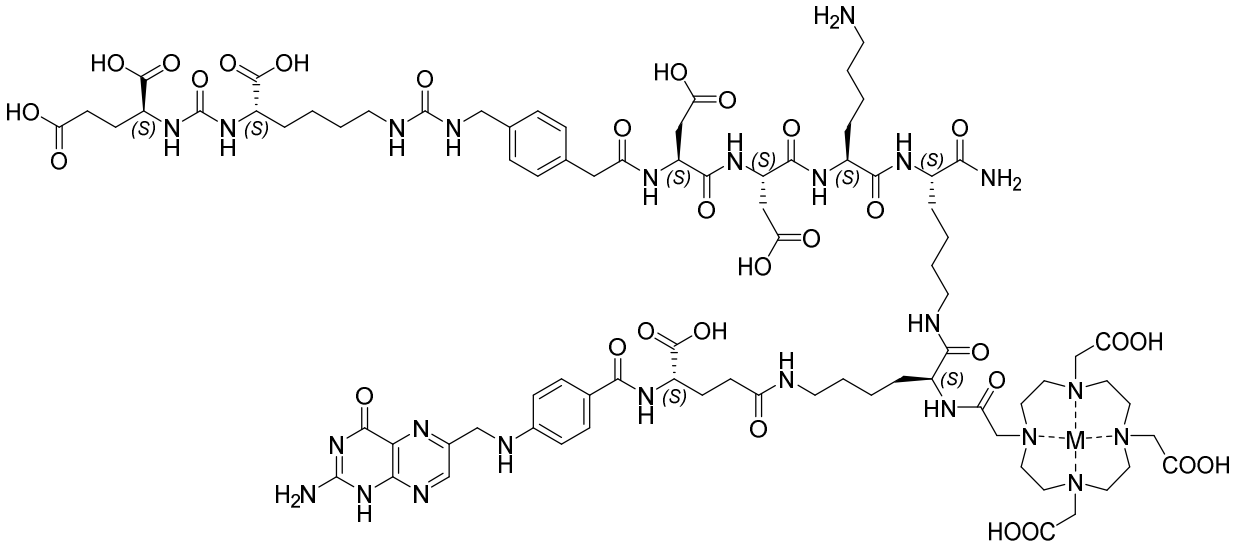
(CB-1820),



(CR19428),

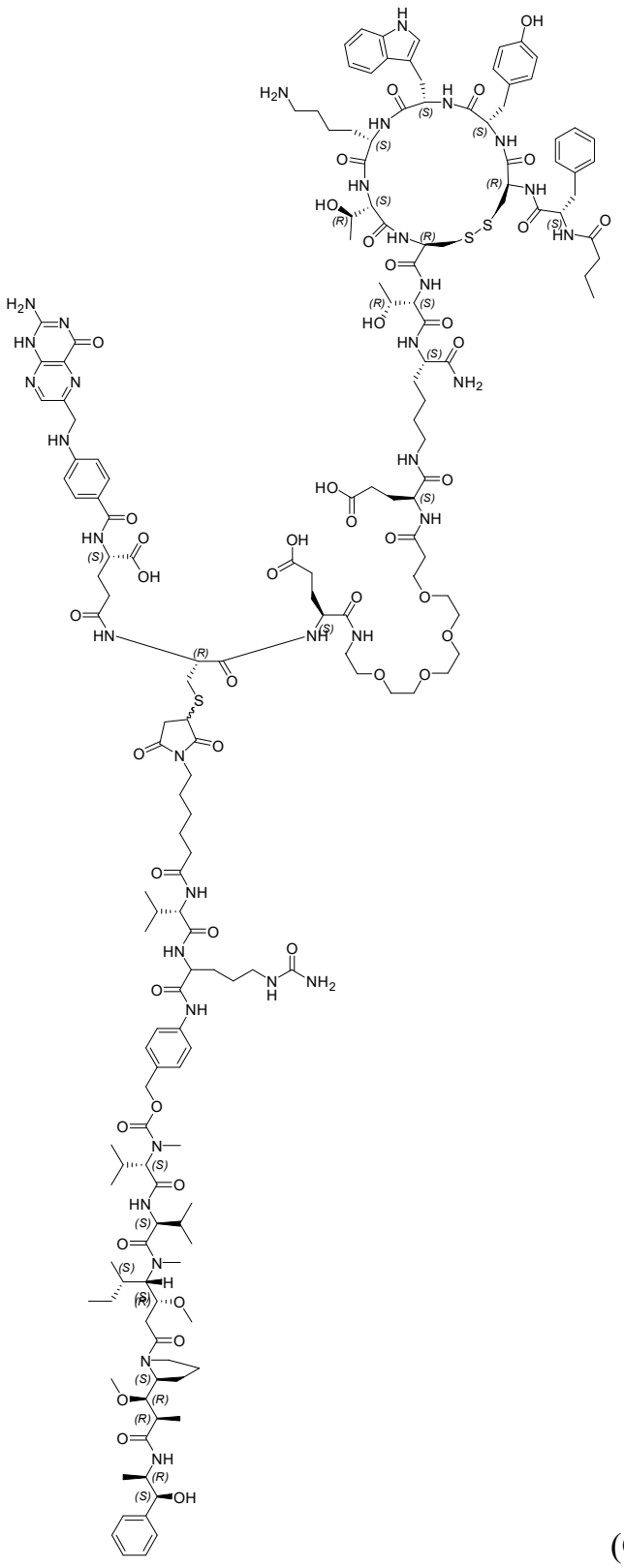


(20R-SM09) and

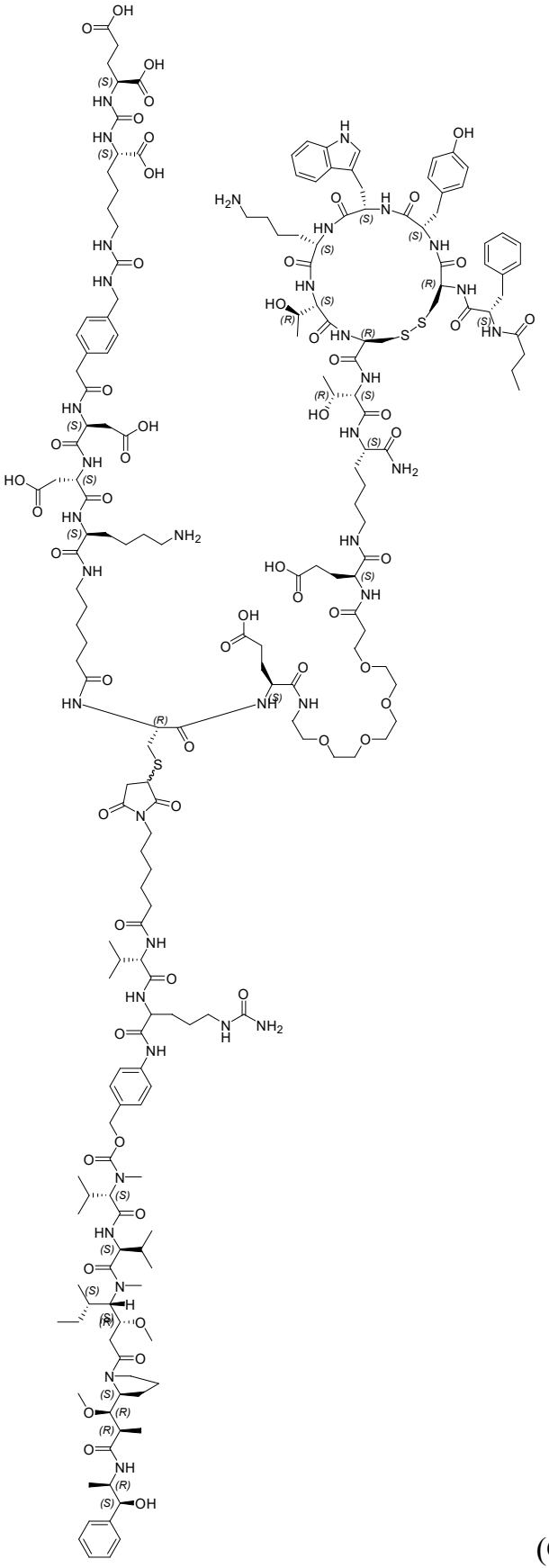


(CB-20R), wherein M is a radionuclide.

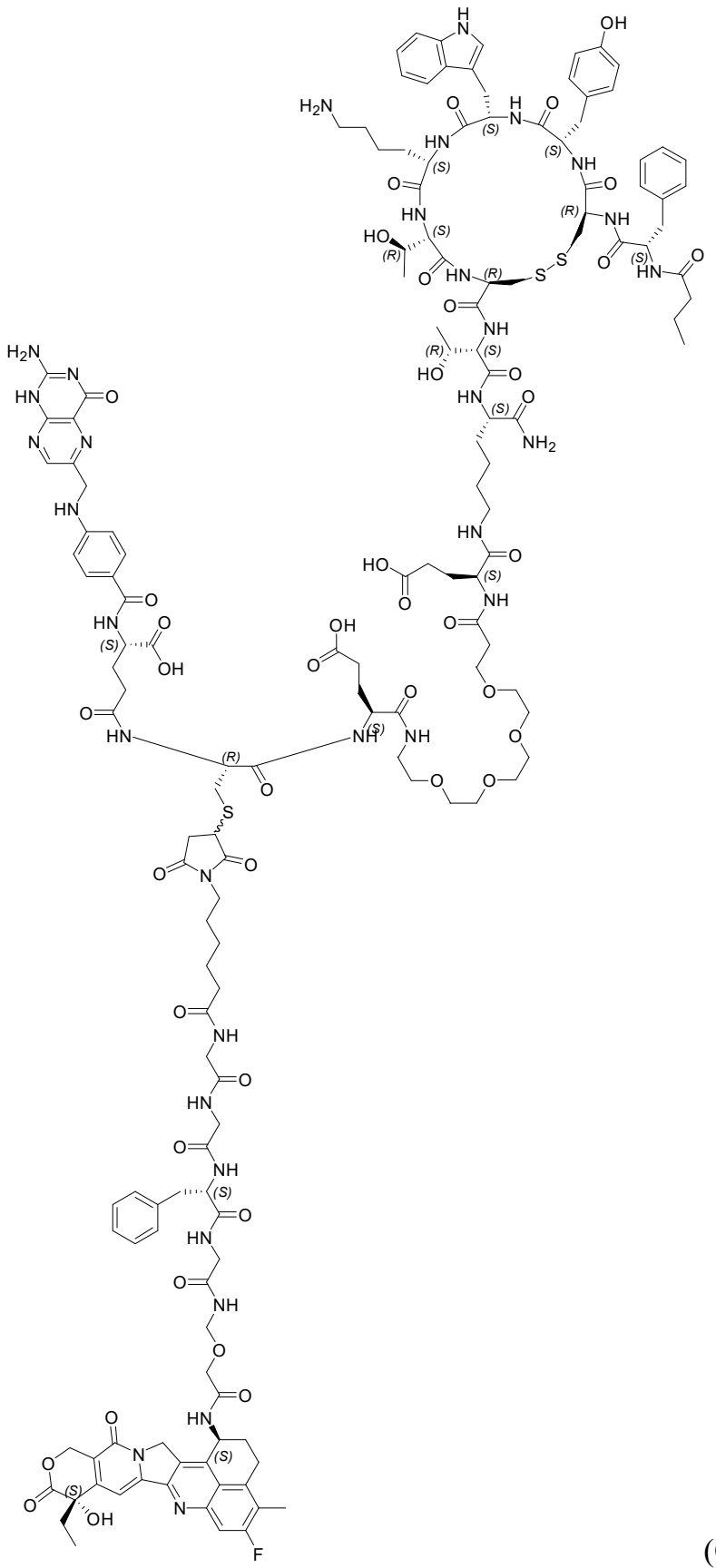
24. The conjugate compound or the pharmaceutically acceptable salt thereof according to claim 6, wherein the conjugate compound is:



(CB-18G),

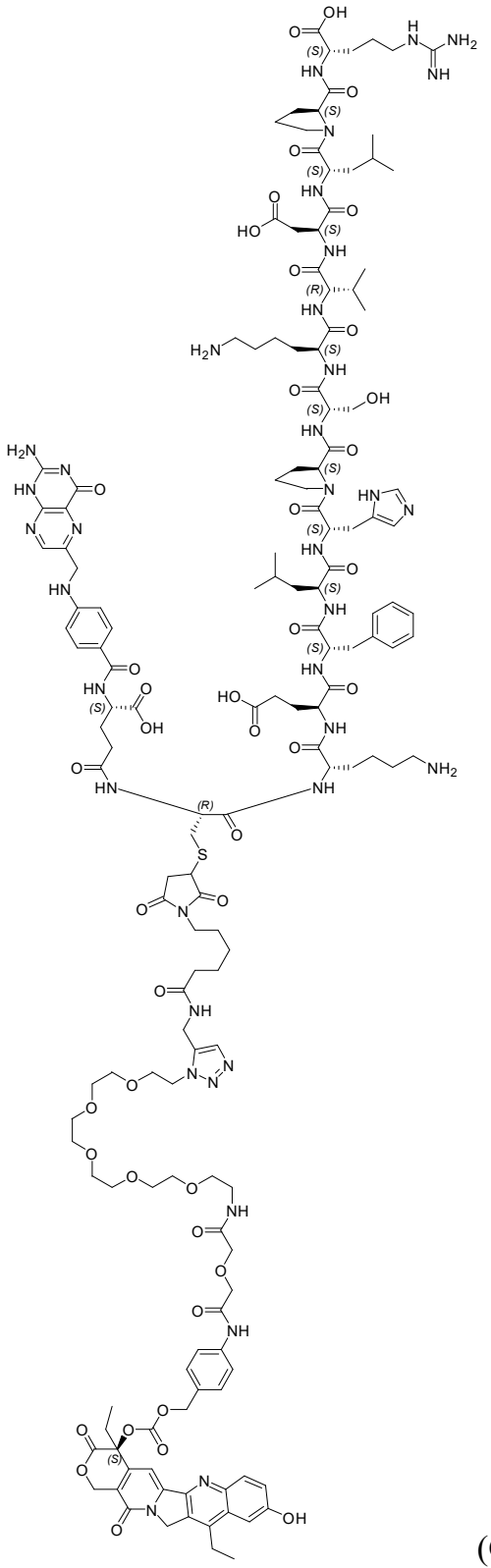


(CB-1820) or

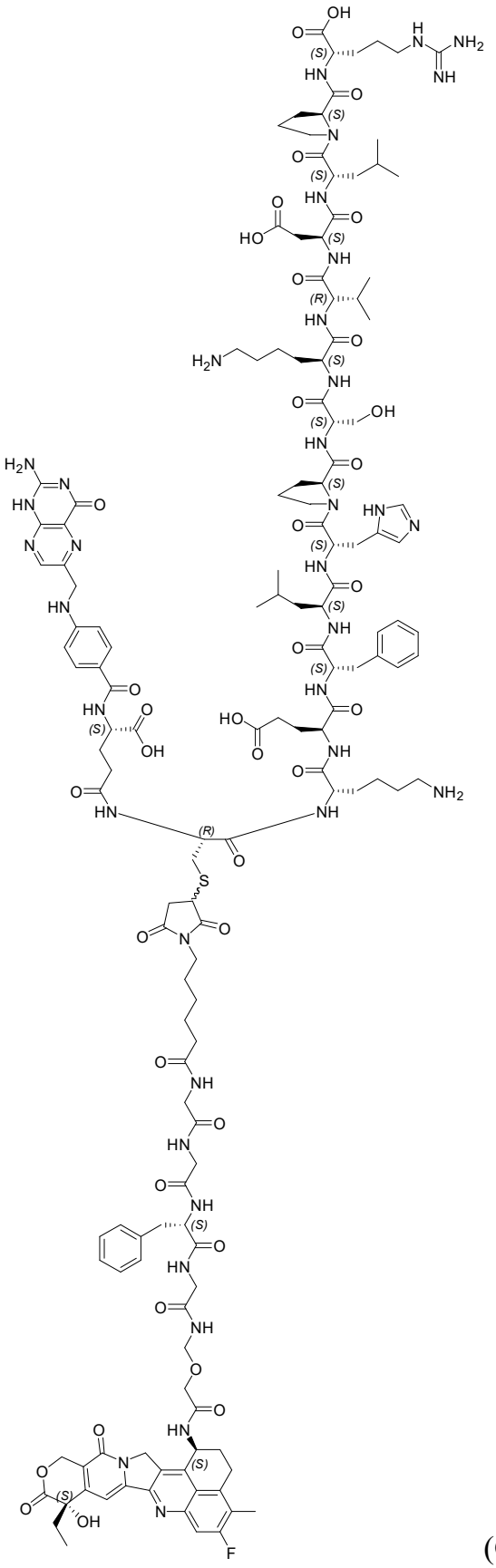


(CR19426).

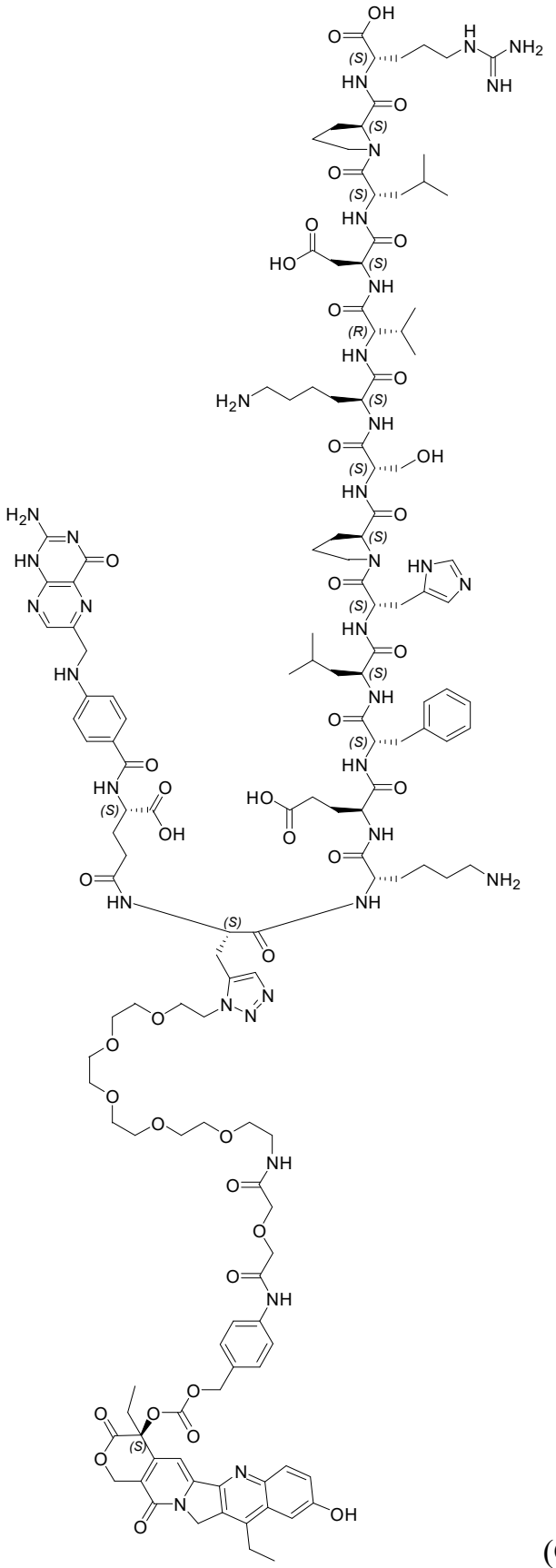
25. The conjugate compound or the pharmaceutically acceptable salt thereof according to claim 7, wherein the conjugate compound is



(CB-10S),



(CR19425) or



(CB-50S).

26. A pharmaceutical composition comprising the conjugate compound or the pharmaceutically acceptable salt thereof according to any one of claims 1-25, and a pharmaceutically acceptable carrier.

27. The pharmaceutical composition according to claim 25 wherein the composition is for intravenous, subcutaneous, oral, intramuscular or intraventricular administration.

28. Use of the conjugate compound or the pharmaceutically acceptable salt thereof according to any one of claims 1-25, or the pharmaceutical composition according to claim 26 or 27 in the manufacture of an agent for delivering the payload to a subject in need thereof.

29. Use of the conjugate compound or the pharmaceutically acceptable salt thereof according to any one of claims 1-25, or the pharmaceutical composition according to claim 26 or 27 in the manufacture of a medicament for treating a disease in a subject, wherein the disease is a cancer.

30. The use according to claim 29, wherein the cancer is selected from the group consisting of prostatic cancer, breast cancer, lung cancer, renal cancer, leukaemia, ovarian cancer, gastric cancer, uterine cancer, endometrial carcinoma, liver cancer, colon cancer, thyroid cancer, pancreatic cancer, colorectal cancer, oesophageal cancer, testicular cancer, skin cancer, lymphoma, and multiple myeloma.

31. The use according to any one of claims 29-30, further comprising administering one or more therapeutic agents in combination with the conjugate compound or the pharmaceutically acceptable salt thereof, or the pharmaceutical composition.