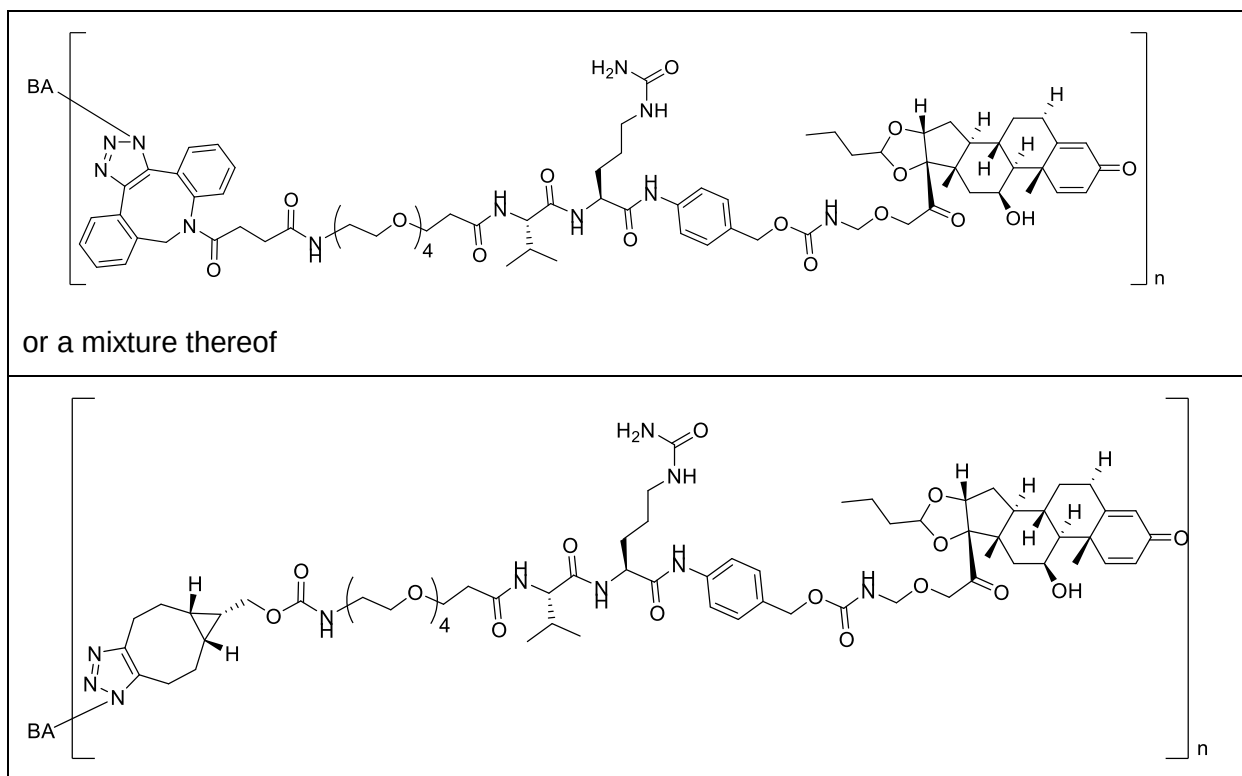
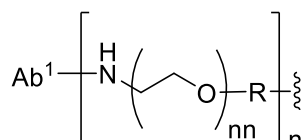


[0026a] In one aspect, provided herein is an isolated antibody or antigen-binding fragment thereof of the IgG class that binds macrophage scavenger receptor 1 (MSR1), wherein the antibody or antigen-binding fragment thereof comprises: (i) three heavy chain CDRs (HCDR1, HCDR2, and HCDR3) contained within the heavy chain variable region (HCVR) amino acid sequence of SEQ ID NO: 50, or an amino acid sequence that is at least 90% identical thereto; and three light chain CDRs (LCDR1, LCDR2, and LCDR3) contained within the light chain variable region (LCVR) amino acid sequence of SEQ ID NO: 58, or an amino acid sequence that is at least 90% identical thereto; or (ii) three heavy chain CDRs (HCDR1, HCDR2, and HCDR3) contained within the heavy chain variable region (HCVR) amino acid sequence of SEQ ID NO: 2, or an amino acid sequence that is at least 90% identical thereto; and three light chain CDRs (LCDR1, LCDR2, and LCDR3) contained within the light chain variable region (LCVR) amino acid sequence of SEQ ID NO: 10, or an amino acid sequence that is at least 90% identical thereto.



or a stereoisomeric form thereof, or a regioisomer thereof, or a mixture of regioisomers thereof, wherein

each **Ab** is an anti-MSR1 antibody, or an antigen binding fragment thereof;



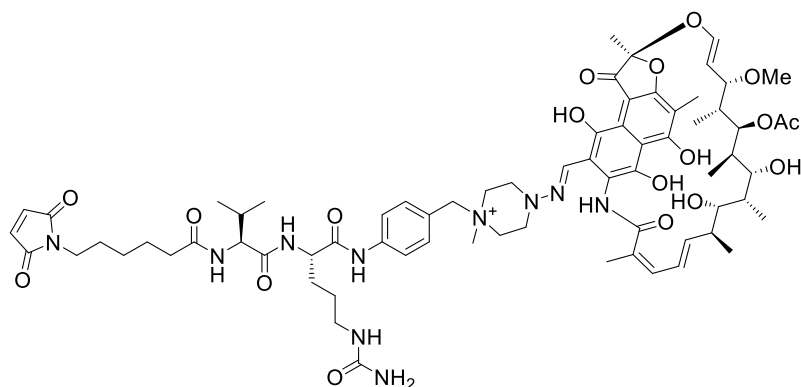
each **BA** is where **Ab**¹ is an anti-MSR1 antibody, or an antigen-binding fragment thereof; **R** is C₂₋₄-alkylene; and **nn** is an integer selected from 2 to 4, inclusive.

and

each **n** is an integer from 1 to 4.

[0041e] In another aspect, provided herein is an antibody-drug conjugate as disclosed herein, according to Formula (7004):

[0041g] In another aspect, provided herein is an antibody-drug conjugate as disclosed herein, prepared by contacting an anti-MSR1 antibody or a PEG-modified anti-MSR1 antibody, or antigen-binding fragment thereof, with a linker payload, or a stereoisomeric form thereof, or a regioisomer thereof, according to Formula (D):



Formula (D).

under conditions suitable for forming a bond between anti-MSR1 antibody, or antigen-binding fragment thereof.

[0042] Also provided herein are therapeutic methods comprising administration of an anti-MSR1 antibody, an antigen-binding portion of an MSR1 antibody, or an ADC comprising an anti-MSR1 antibody of MSR1 antigen-binding fragment thereof, to a subject in need thereof. The therapeutic methods comprise administering a therapeutically effective amount of a pharmaceutical composition comprising an anti-MSR1 antibody, an antigen-binding portion of an MSR1 antibody, or an ADC comprising an anti-MSR1 antibody of MSR1 antigen-binding fragment thereof to the subject. The disorder treated is any disease or condition which is improved, ameliorated, inhibited or prevented by targeting MSR1. In some examples, the disease or condition is a proliferative disease, a metabolic disease, inflammation, a neurodegenerative disease, or disease, disorder, or condition associated with glucocorticoid receptor signaling. In some examples the disease or condition is atherosclerosis. In some examples, the disease, disorder, or condition associated with glucocorticoid receptor signaling is an inflammatory disease, disorder, or condition. In some of such examples, the side effects associated with administration of the unconjugated steroid payload of said compound are reduced. Also provided herein are therapeutic methods comprising administration an anti-MSR1 antibody, an antigen-binding portion of an MSR1 antibody, or an ADC comprising an anti-MSR1 antibody of MSR1 antigen-binding fragment thereof, for the treatment and/or prevention of bacterial infection in a subject.

[0043] Provided herein is the use of an anti-MSR1 antibody, an antigen-binding portion of an MSR1 antibody, or an ADC comprising an anti-MSR1 antibody of MSR1 antigen-binding

What is claimed is:

1. An isolated antibody or antigen-binding fragment thereof of the IgG class that binds macrophage scavenger receptor 1 (MSR1), wherein the antibody or antigen-binding fragment thereof comprises:
 - (i) three heavy chain CDRs (HCDR1, HCDR2, and HCDR3) contained within the heavy chain variable region (HCVR) amino acid sequence of SEQ ID NO: 50, or an amino acid sequence that is at least 90% identical thereto; and three light chain CDRs (LCDR1, LCDR2, and LCDR3) contained within the light chain variable region (LCVR) amino acid sequence of SEQ ID NO: 58, or an amino acid sequence that is at least 90% identical thereto; or
 - (ii) three heavy chain CDRs (HCDR1, HCDR2, and HCDR3) contained within the heavy chain variable region (HCVR) amino acid sequence of SEQ ID NO: 2, or an amino acid sequence that is at least 90% identical thereto; and three light chain CDRs (LCDR1, LCDR2, and LCDR3) contained within the light chain variable region (LCVR) amino acid sequence of SEQ ID NO: 10, or an amino acid sequence that is at least 90% identical thereto.
2. The isolated antibody or antigen-binding fragment of claim 1 that binds macrophage scavenger receptor 1 (MSR1), wherein the antibody or antigen-binding fragment thereof exhibits one or more of the following properties:
 - (i) binds human MSR1 at 37°C with a K_D of less than about 1.4 nM as measured by surface plasmon resonance;
 - (ii) binds human MSR1 at 37°C with a $t_{1/2}$ of greater than about 4 minutes as measured by surface plasmon resonance;
 - (iii) exhibits maximum inhibition of modified LDL uptake by human MSR1 of less than about 90% with an IC_{50} of less than about 10 nM as measured by ligand uptake assay;
 - (iv) blocks < 50% of modified LDL binding to human MSR1 as measured by competition ELISA assay; and
 - (v) exhibits binding of human MSR1 and internalization of the bound complex of more than about 10% as assayed by binding in THP-1 cells.
3. The anti-MSR1 antibody or antigen-binding fragment of claim 1, wherein:
 - a. HCDR1 comprises the amino acid sequence of SEQ ID NO: 52 or an amino acid sequence of SEQ ID NO: 52 comprising two or fewer amino acid substitutions; HCDR2

comprises the amino acid sequence of SEQ ID NO: 54 or an amino acid sequence of SEQ ID NO: 54 comprising two or fewer amino acid substitutions; HCDR3 comprises the amino acid sequence of SEQ ID NO: 56 or an amino acid sequence of SEQ ID NO: 56 comprising two or fewer amino acid substitutions; LCDR1 comprises the amino acid sequence of SEQ ID NO: 60 or an amino acid sequence of SEQ ID NO: 60 comprising two or fewer amino acid substitutions; LCDR2 comprises the amino acid sequence of SEQ ID NO: 62 or an amino acid sequence of SEQ ID NO: 62 comprising two or fewer amino acid substitutions; and LCDR3 comprises the amino acid sequence of SEQ ID NO: 64 or an amino acid sequence of SEQ ID NO: 64 comprising two or fewer amino acid substitutions; or

b. HCDR1 comprises the amino acid sequence of SEQ ID NO: 4 or an amino acid sequence of SEQ ID NO: 4 comprising two or fewer amino acid substitutions; HCDR2 comprises the amino acid sequence of SEQ ID NO: 6 or an amino acid sequence of SEQ ID NO: 6 comprising two or fewer amino acid substitutions; HCDR3 comprises the amino acid sequence of SEQ ID NO: 8 or an amino acid sequence of SEQ ID NO: 8 comprising two or fewer amino acid substitutions; LCDR1 comprises the amino acid sequence of SEQ ID NO: 12 or an amino acid sequence of SEQ ID NO: 12 comprising two or fewer amino acid substitutions; LCDR2 comprises the amino acid sequence of SEQ ID NO: 14 or an amino acid sequence of SEQ ID NO: 14 comprising two or fewer amino acid substitutions; and LCDR3 comprises the amino acid sequence of SEQ ID NO: 16 or an amino acid sequence of SEQ ID NO: 16 comprising two or fewer amino acid substitutions.

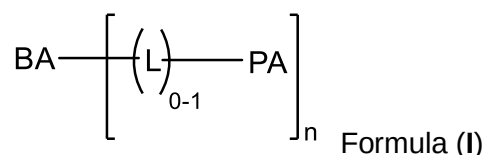
4. The anti-MSR1 antibody or antigen-binding fragment of claim 1, wherein the antibody or antigen-binding fragment comprises:

(a) HCDR1 comprises the amino acid sequence of SEQ ID NO: 52; HCDR2 comprises the amino acid sequence of SEQ ID NO: 54; HCDR3 comprises the amino acid sequence of SEQ ID NO: 56; LCDR1 comprises the amino acid sequence of SEQ ID NO: 60; LCDR2 comprises the amino acid sequence of SEQ ID NO: 62; and LCDR3 comprises the amino acid sequence of SEQ ID NO: 64; or

(b) HCDR1 comprises the amino acid sequence of SEQ ID NO: 4; HCDR2 comprises the amino acid sequence of SEQ ID NO: 6; HCDR3 comprises the amino acid sequence of SEQ ID NO: 8; LCDR1 comprises the amino acid sequence of SEQ ID NO: 12; LCDR2 comprises the amino acid sequence of SEQ ID NO: 14; and LCDR3 comprises the amino acid sequence of SEQ ID NO: 16.

5. The anti-MSR1 antibody or antigen-binding fragment of claim 1, wherein the antibody or antigen-binding fragment comprises:
- (i) an HCVR comprising the amino acid sequence of SEQ ID NO: 50 or an amino acid sequence that is at least 95% identical thereto; and an LCVR comprising the amino acid sequence of SEQ ID NO: 58 or an amino acid sequence that is at least 95% identical thereto;
 - (ii) an HCVR comprising the amino acid sequence of SEQ ID NO: 2 or an amino acid sequence that is at least 95% identical thereto; and an LCVR comprising the amino acid sequence of SEQ ID NO: 10 or an amino acid sequence that is at least 95% identical thereto;
 - (iii) an HCVR comprising the amino acid sequence of SEQ ID NO: 50 or an amino acid sequence that is at least 98% identical thereto; and an LCVR comprising the amino acid sequence of SEQ ID NO: 58 or an amino acid sequence that is at least 95% identical thereto;
 - (iv) an HCVR comprising the amino acid sequence of SEQ ID NO: 2 or an amino acid sequence that is at least 98% identical thereto; and an LCVR comprising the amino acid sequence of SEQ ID NO: 10 or an amino acid sequence that is at least 95% identical thereto;
 - (v) an HCVR comprising the amino acid sequence of SEQ ID NO: 50 or an amino acid sequence that is at least 99% identical thereto; and an LCVR comprising the amino acid sequence of SEQ ID NO: 58 or an amino acid sequence that is at least 95% identical thereto;
 - (vi) an HCVR comprising the amino acid sequence of SEQ ID NO: 2 or an amino acid sequence that is at least 99% identical thereto; and an LCVR comprising the amino acid sequence of SEQ ID NO: 10 or an amino acid sequence that is at least 95% identical thereto.
6. The anti-MSR1 antibody or antigen-binding fragment of claim 1, wherein the antibody or antigen-binding fragment comprises:
- (i) an HCVR comprising the amino acid sequence of SEQ ID NO: 50; and an LCVR comprising the amino acid sequence of SEQ ID NO: 58; or

- (ii) an HCVR comprising the amino acid sequence of SEQ ID NO: 2; and an LCVR comprising the amino acid sequence of SEQ ID NO: 10.
7. An antibody-drug conjugate comprising the anti-MSR1 antibody, or antigen-binding fragment thereof, of any one of claims 1 to 6 conjugated to a payload residue optionally through a linker or through a linker-spacer.
8. The antibody-drug conjugate of claim 7, having the structure of Formula (I):



or a pharmaceutically acceptable salt, solvate, stereoisomeric form thereof, a regioisomer thereof, or mixtures of regioisomers thereof;

wherein:

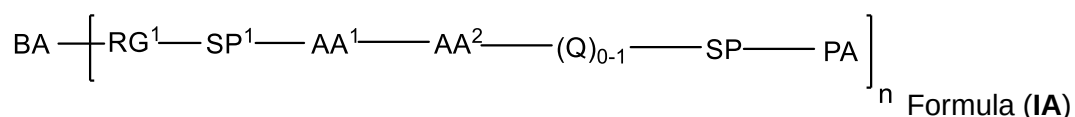
BA is a binding agent;

L is a linker;

PA is a payload moiety selected from the group consisting of a steroid residue, a LXR modulator residue, or a rifamycin analog residue; and

subscript **n** is an integer from 1 to 30.

9. The antibody-drug conjugate of claim 7 or claim 8, having the structure of Formula (IA):



wherein

SP¹ is absent, or a spacer;

RG¹ is a reactive group residue;

AA¹ is absent, or a divalent or trivalent linker comprising an amino acid residue which is optionally bonded directly or indirectly to a group **HG**;

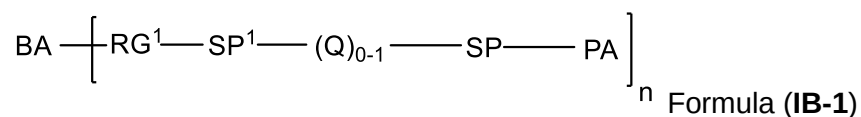
AA² is absent, or a dipeptide, tripeptide, or tetrapeptide residue;

Q, when present, is a connector group residue;

SP is absent, or a spacer; and

HG, when present, is a hydrophilic group.

10. The antibody-drug conjugate of any one of claims 7-9, having the structure of Formula (IB-1):

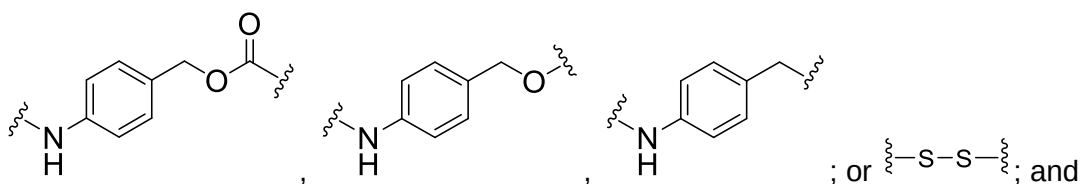


wherein

SP¹ is absent, or a spacer;

RG¹ is a reactive group residue;

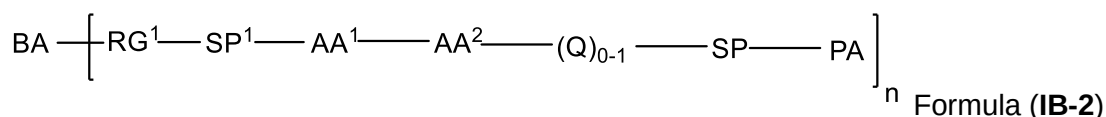
Q, when present, is



SP is absent, or a spacer;

wherein the indicates the atoms through which the referenced group is bonded to the adjacent groups in the formula.

11. The antibody-drug conjugate of any one of claims 7-9, having the structure of Formula (IB-2):



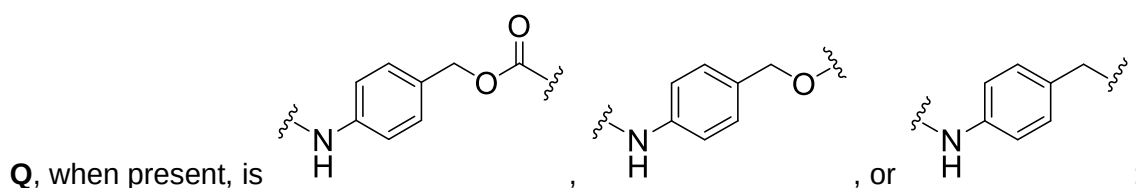
wherein

SP¹ is absent, or a spacer;

RG¹ is a reactive group residue;

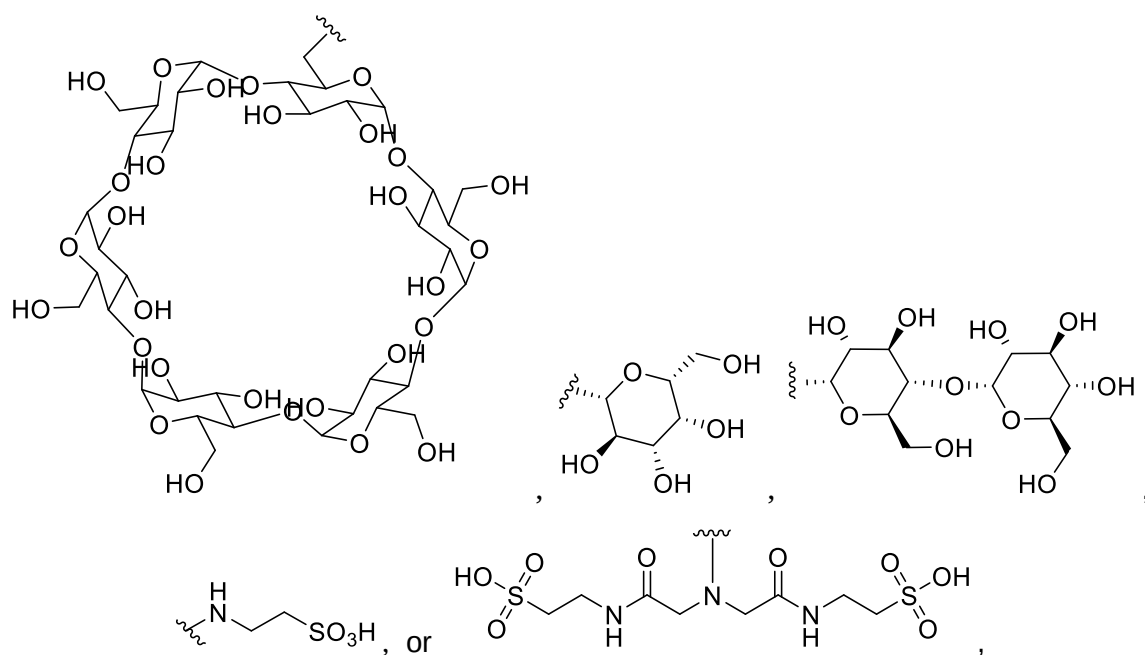
AA¹ is absent, or a divalent or trivalent linker comprising an amino acid residue which is optionally bonded directly or indirectly to a group **HG**;

AA² is absent, or a dipeptide, tripeptide, or tetrapeptide residue;



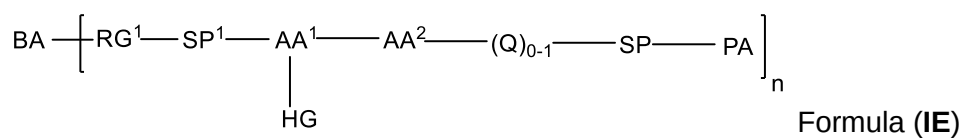
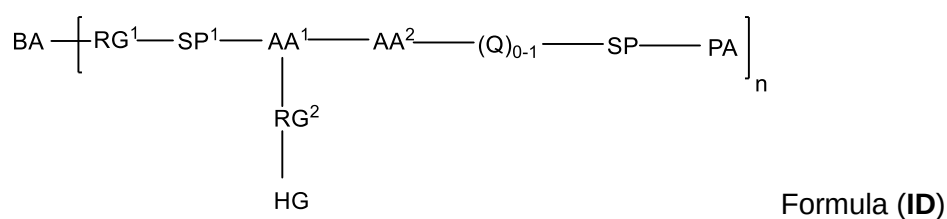
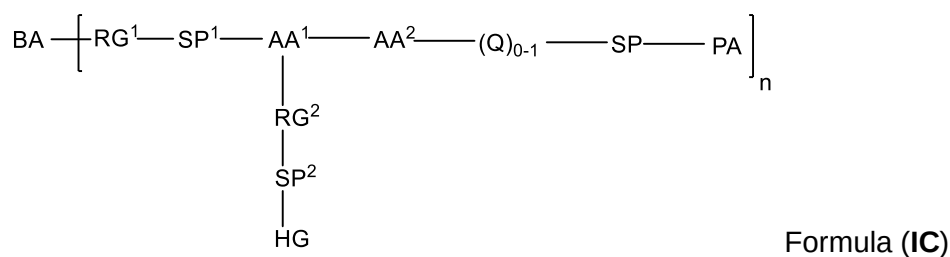
SP is absent, or a spacer; and

HG, when present, is



wherein the indicates the atoms through which the referenced group is bonded to the adjacent groups in the formula.

12. The antibody-drug conjugate of any one of claims 7-9 and 11, having the structure of Formula (IC), Formula (ID), or Formula (IE):



wherein

SP¹ is absent, or a spacer;

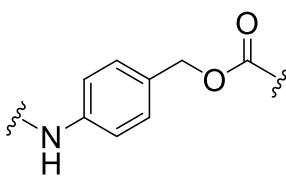
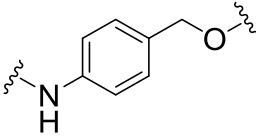
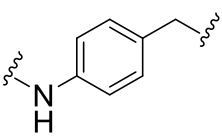
RG¹ is a reactive group residue;

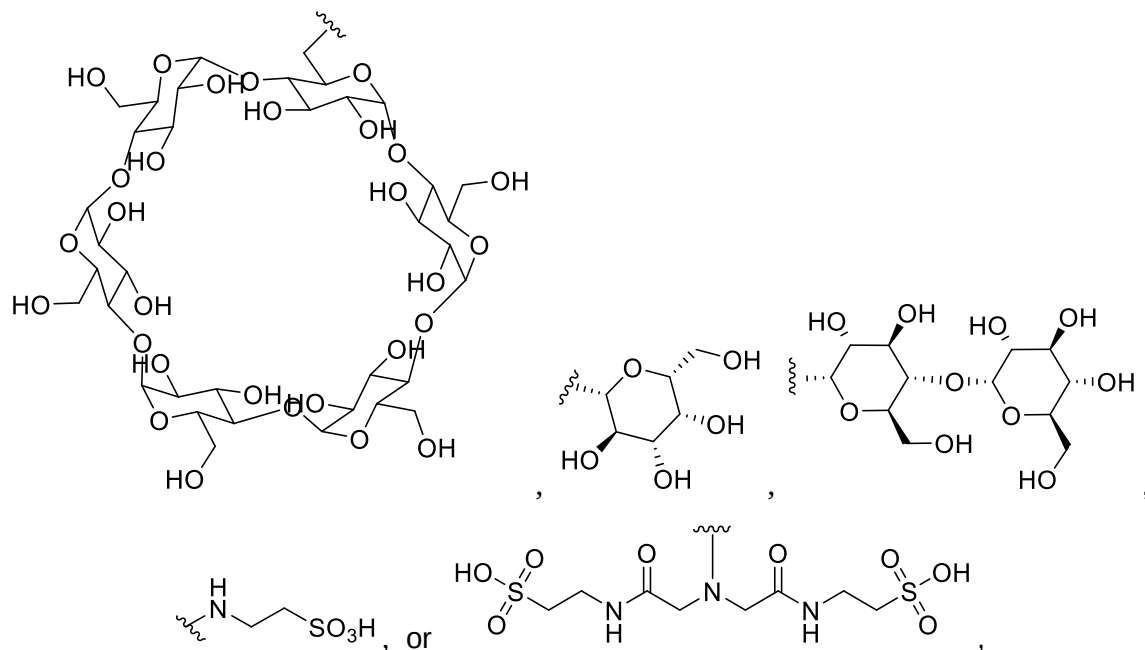
SP² is absent, or a spacer;

RG² is a reactive group residue;

AA¹ is a divalent or trivalent linker comprising an amino acid residue;

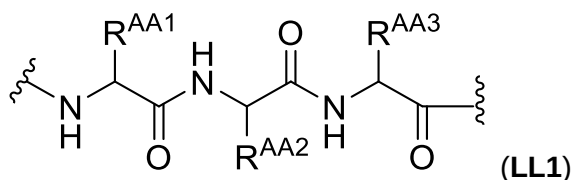
AA² is a dipeptide, tripeptide, or tetrapeptide residue;

Q, when present, is , , or  ;
SP is absent, or a spacer; and
HG is



wherein the  indicates the atoms through which the referenced group is bonded to the adjacent groups in the formula.

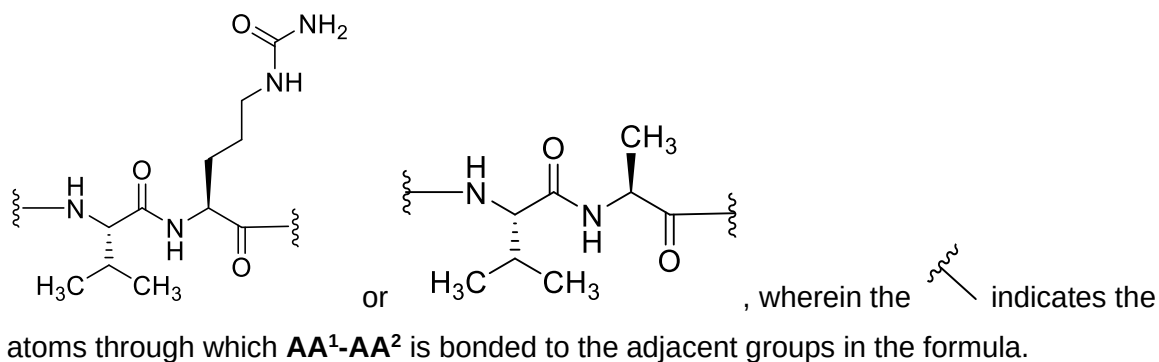
13. The antibody-drug conjugate of any one of claims 9, and 11-12, wherein **AA¹-AA²** is according to Formula (**LL1**):



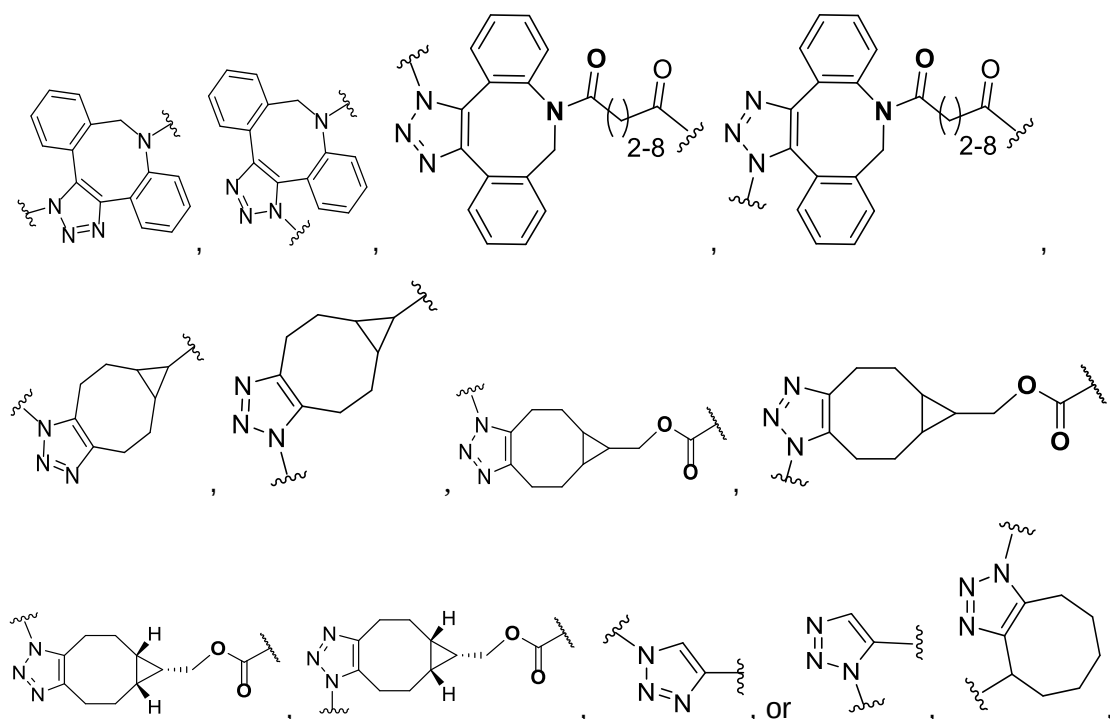
wherein **R^{AA1}**, **R^{AA2}**, and **R^{AA3}** are each, independently, amino acid side chains, at least one of which is bonded to **-(RG²)-SP²-HG**, **-(RG²)-HG** or **HG**; wherein the  indicates the atoms through which **AA¹-AA²** is bonded to the adjacent groups in the formula.

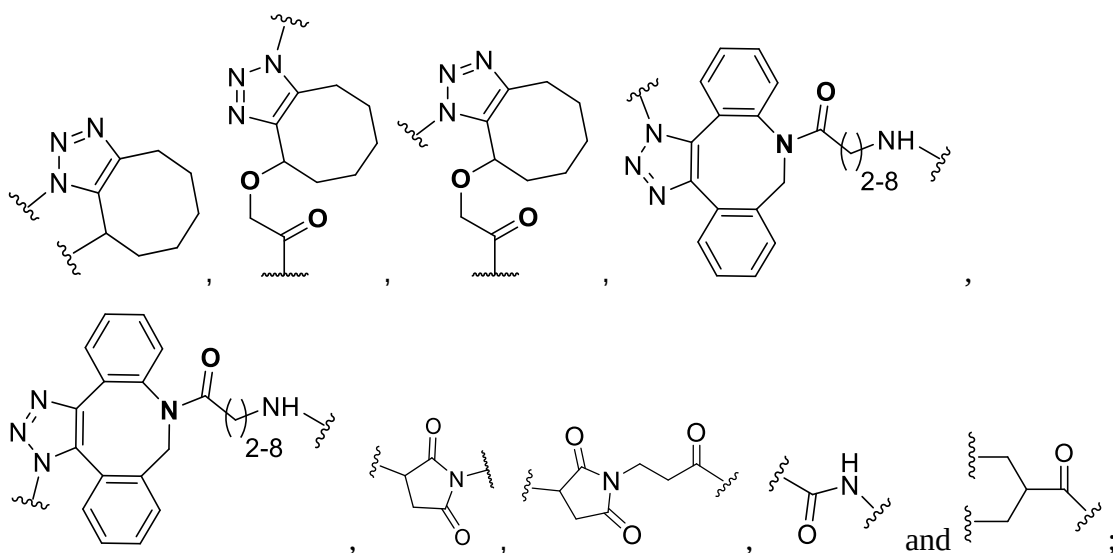
14. The antibody-drug conjugate of claim 13, wherein **R^{AA1}** is a lysine, glutamine, glutamic acid or aspartic acid side chain bonded directly or indirectly to **HG**, and **R^{AA2}** and **R^{AA3}** are either valine and alanine or valine and citrulline sidechains respectively.

15. The antibody-drug conjugate of any one of claims 9, and 11-14, wherein **AA**¹-**AA**² is



16. The antibody-drug conjugate of any one of claims 9-15, wherein the **RG¹** and **RG²** residues are independently, in each instance, selected from the group consisting of:



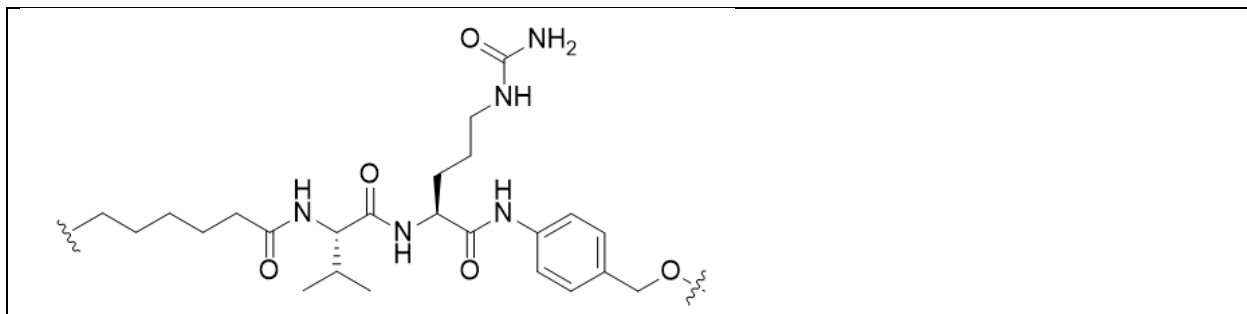
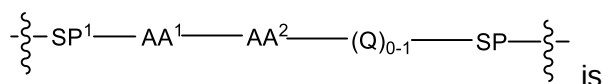


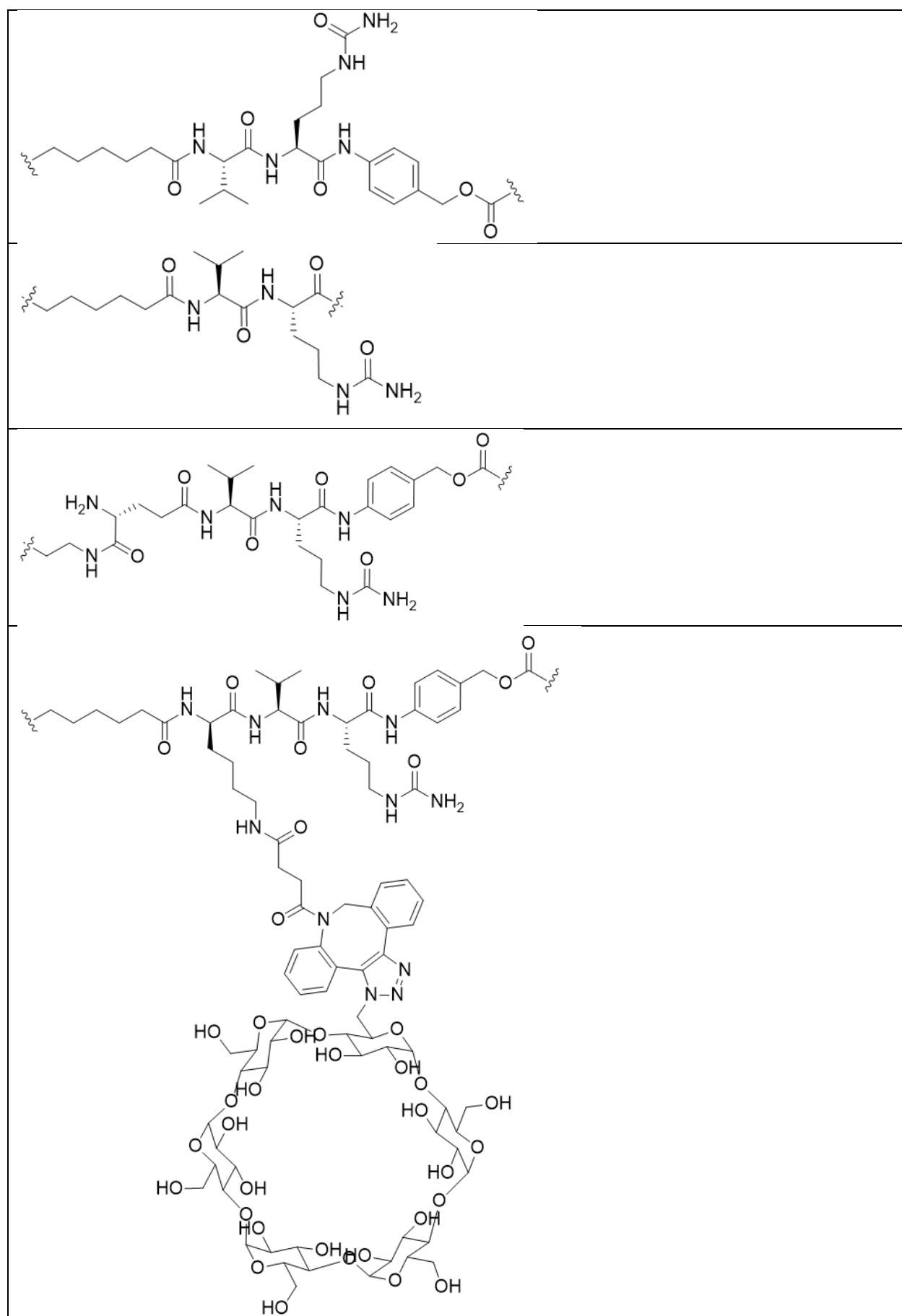
wherein the  indicates the atom through which the **RG**¹ or **RG**² residue is bonded to the adjacent groups in the formula.

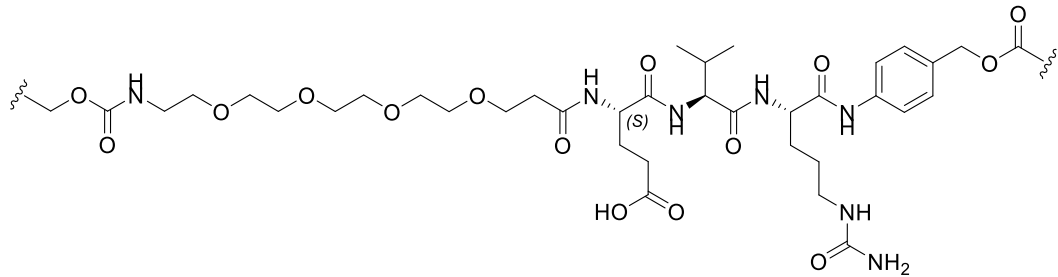
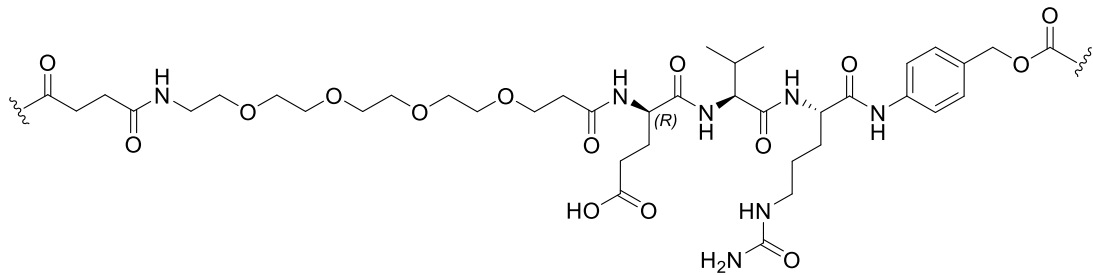
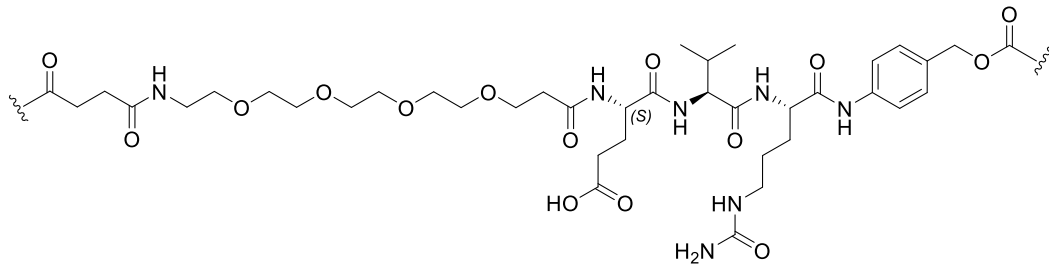
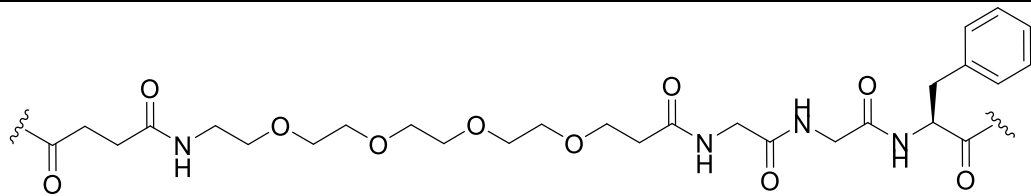
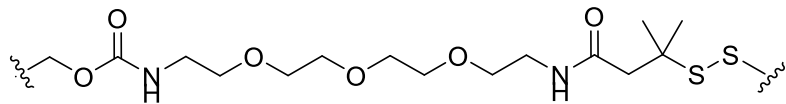
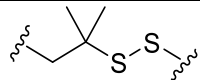
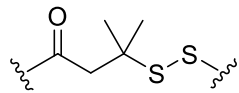
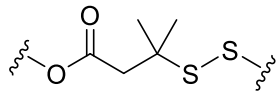
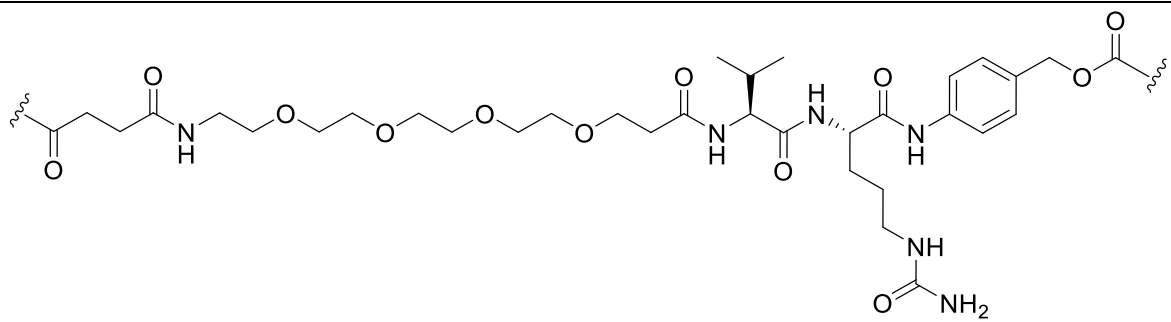
17. The antibody-drug conjugate of any one of claims 9-16, wherein **SP**, **SP**¹ and **SP**² are independently, in each instance, absent, or selected from the group consisting of C₁₋₆ alkylene, -NH-, -S-, -O-, -C(O)-, (-CH₂-CH₂-O)_e, -NH-CH₂-CH₂-(-O-CH₂-CH₂)_e-C(O)-, -C(O)-(CH₂)_u-C(O)-, -C(O)-NH-(CH₂)_v-, (glycine)₄-serine, and combinations thereof, wherein subscript **e** is an integer from 0 to 4, subscript **u** is an integer from 1 to 8, and subscript **v** is an integer from 1 to 8.

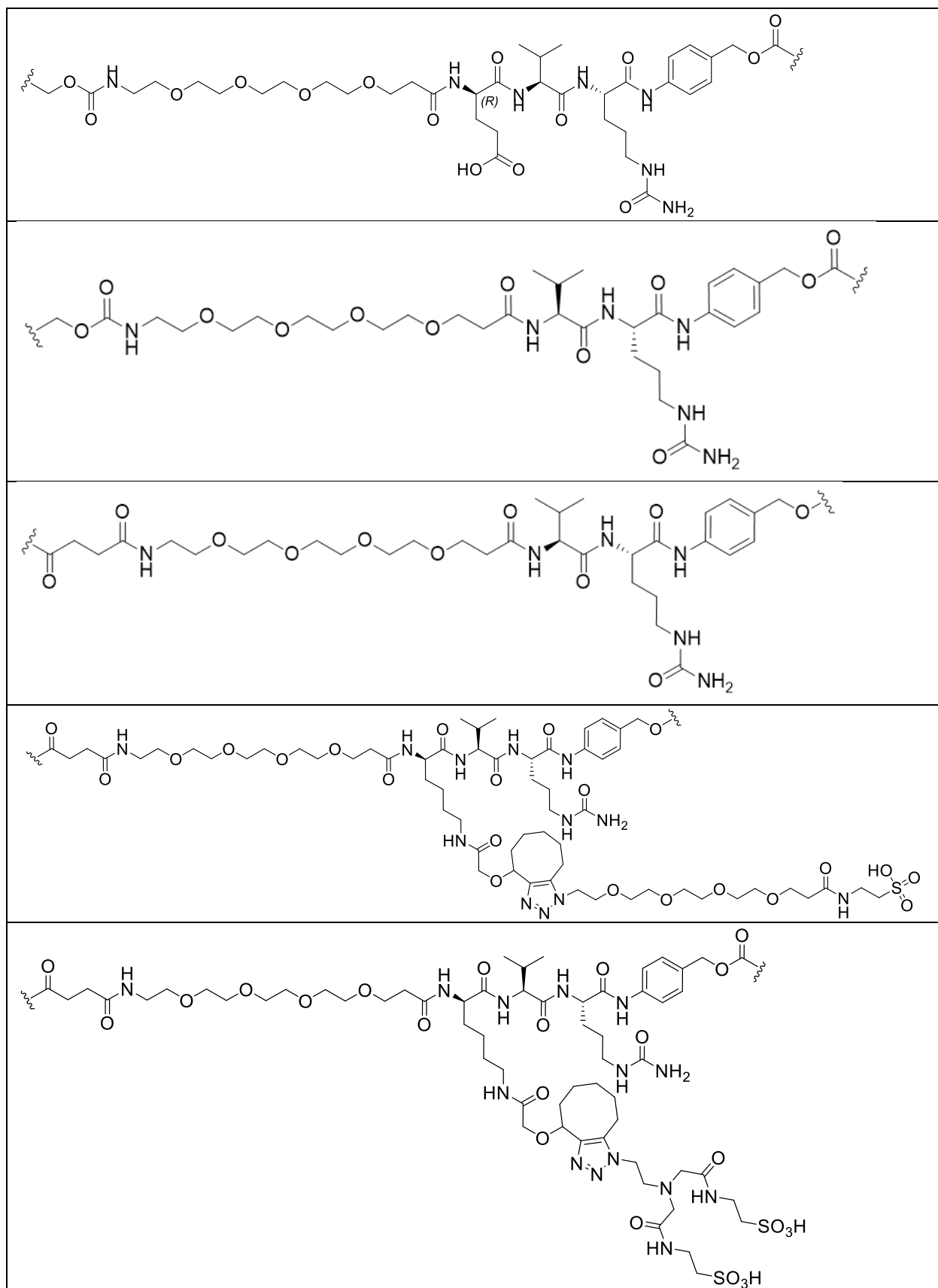
18. The antibody-drug conjugate of any one of claims 7-17, wherein **n** is 1, 2, 3, or 4.

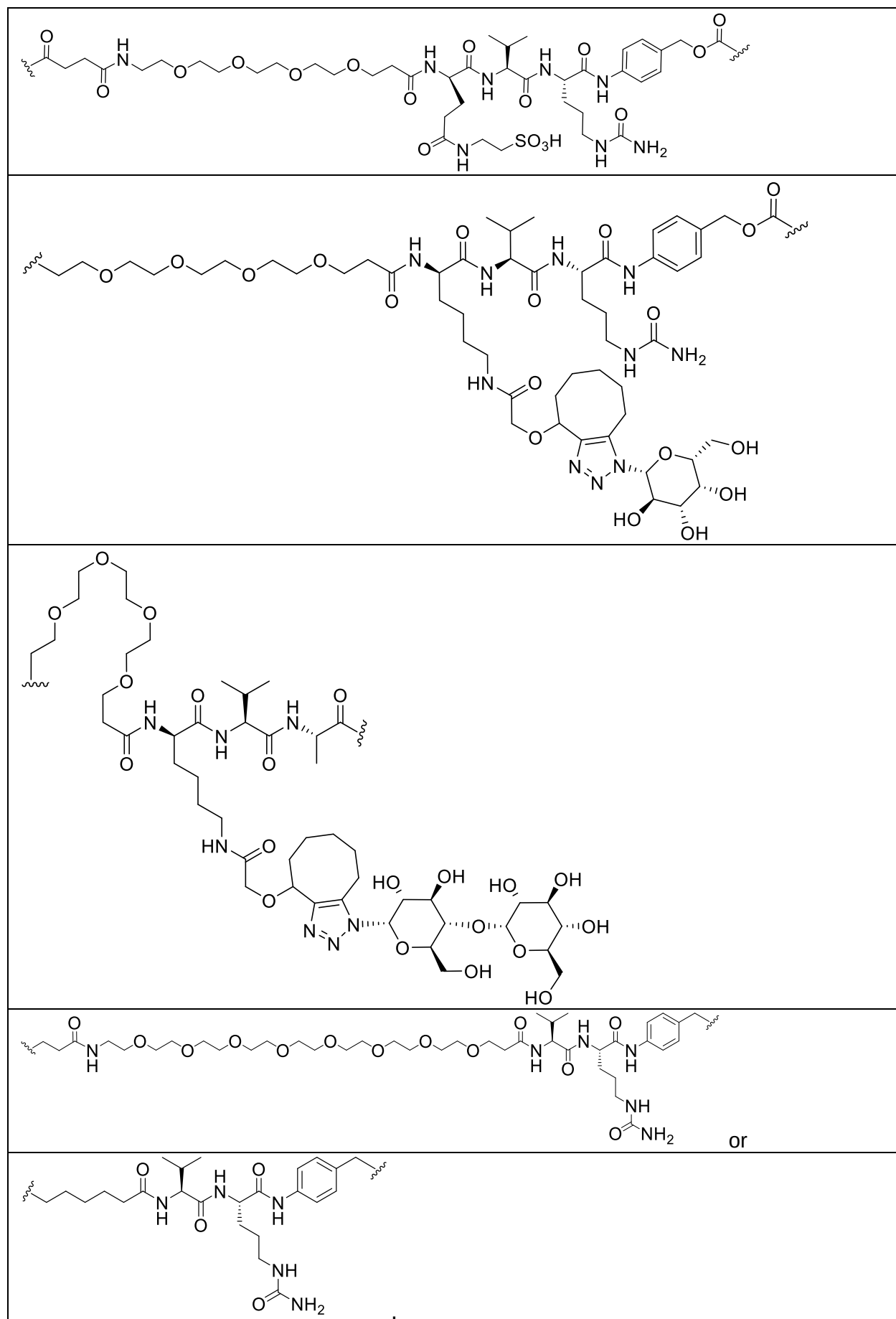
19. The antibody-drug conjugate of any one of claims 9-18, wherein



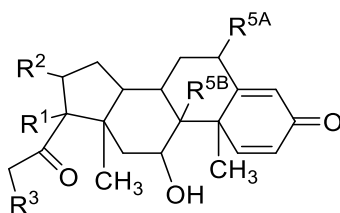








20. The antibody-drug conjugate molecule of claim 7, wherein the antibody, or antigen-binding fragment thereof, is conjugated to a steroid payload through a linker or a linker-spacer.
21. The antibody-drug conjugate molecule of claim 7, wherein the antibody, or antigen-binding fragment thereof, is conjugated to a LXR modulator payload through a linker.
22. The antibody-drug conjugate molecule of claim 7, wherein the antibody, or antigen-binding fragment thereof, is conjugated to a rifamycin analog payload through a linker.
23. The antibody-drug conjugate molecule of claim 20, wherein the steroid conjugated to the antibody, or antigen-binding fragment thereof, through a linker or a linker-spacer is a compound of Formula (A-1)

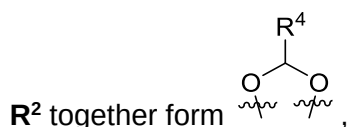


Formula (A-1)

or a pharmaceutically acceptable salt, solvate, or stereoisomeric form thereof;

wherein

R^1 and R^2 are, independently, $-H$, alkyl, alkyl- $C(O)-O-$, $-OH$, or halo; or R^1 and



wherein R^4 is alkyl, aryl, arylalkyl, or an N-containing heterocycloalkyl,

wherein the alkyl, aryl, arylalkyl, and N-containing heterocycloalkyl are, independently in each instance, optionally substituted with $-NR^{Aa}R^{Ab}$;

R^3 is $-O$, $R^Z-C(O)-X-$, $-heteroalkyl$, $-piperidinyl$, $-NR^{Aa}R^{Ab}$, $-oxyaryl-NR^{Aa}R^{Ab}$ or $-Z-A'(R^P)_t$;

R^Z is alkyl;

X is O or NR^{Aa} ;

Z is S , $S(O)$, $S(O)_2$, SO_2NR^{Aa} , O , $C(O)NR^{Aa}$, $C(O)$, or NR^{Aa} ;

A' is aryl, arylalkyl, or heteroaryl;

R^P is, independently in each instance, halo, optionally substituted alkyl, $-OH$,
or $-NR^{Aa}R^{Ab}$;

R^{Aa} and R^{Ab} are, independently in each instance, $-H$, optionally substituted alkyl, or
optionally substituted aryl;

subscript a is an integer from 0-19; and

t is an integer from 1-3;

and

R^{5A} and R^{5B} are each, independently, halo or a hydrogen atom;

wherein the group R^3 or R^4 is bonded to the linker.

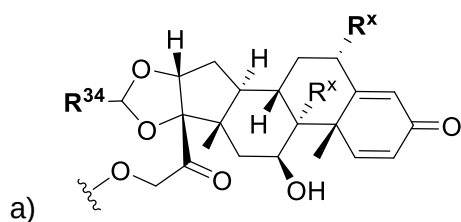
24. The antibody-drug conjugate of claim 20, having the structure of Formula (3000):

BA-(L'-SP-D)_n Formula (3000)

or a pharmaceutically acceptable salt, solvate, or stereoisomeric form thereof;

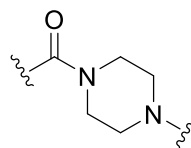
wherein

D is selected from

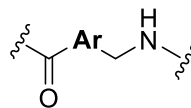


Formula (a),

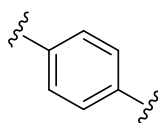
where both R^x in Formula (a) are hydrogen; R^{34} is alkyl, aryl, arylalkyl, or an N-containing heterocycloalkyl; and **SP** is $-C(O)-C_1-C_{10}$ -alkylene- $C(O)-$, $-C(O)-N(C_{1-6}alkyl)-C_1-C_{10}$ -alkylene- X^1- where X^1 is attached to L' in Formula (3000), $-C(O)-N(H)-(C_1-C_{10}$ -alkylene)- $S-$ where S is attached to L' in Formula (3000), $-C(O)-N(C_{1-6}alkyl)-(C_1-C_{10}$ -alkylene)- $S-$



where S is attached to L' in Formula (3000),
attachment on the right hand side (*i.e.* at N) is to L' in Formula (3000), $-CH_2-NH-$ where

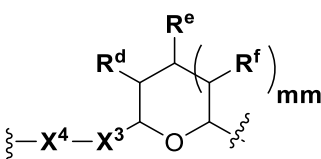


the N is attached to L' in Formula (3000),
in Formula (3000) and where **Ar** is optionally substituted arylene (in some embodiments

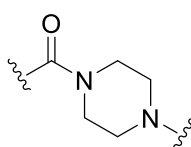


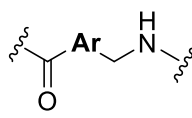
) or optionally substituted heteroarylene, $-(C_1-C_{10}$ -alkylene)- $NR^{50}C(O)-(C_1-$

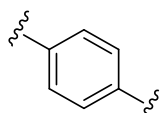
C₁₀-alkylene)-NR^{50a}- where NR^{50a} is attached to L' in Formula (3000), -C(O)-(C₁-C₁₀-alkylene)-NR⁵⁰C(O)-(C₁-C₁₀-alkylene)-NR^{50a}- where NR^{50a} is attached to L' in Formula (3000) and where each C₁-C₁₀-alkylene is independently optionally substituted with one or more hydroxy, -C(O)-N(R³⁵)-C₁-C₁₀-alkylene-C(O)NH-X²- where X² is attached to L' in

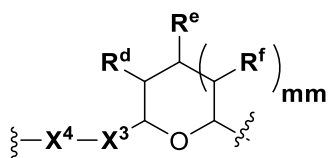
Formula (3000), or  where X⁴ is attached to L' in Formula (3000); or

where both R^x in Formula (a) are fluoro; R³⁴ is alkyl, aryl, arylalkyl, or an N-containing heterocycloalkyl; and SP is -C(O)-C₁-C₁₀-alkylene-C(O)-, -C(O)-N(C₁₋₆alkyl)-C₁-C₁₀-alkylene-X^{1b}- where X^{1b} is attached to L' in Formula (3000), -C(O)-N(H)-(C₁-C₁₀-

alkylene)-X^{1b}- where X^{1b} is attached to L' in Formula (3000),  where the point of attachment on the right hand side (i.e. at N) is to L' in Formula (3000), -CH₂-NH-

where the N is attached to L' in Formula (3000),  where the N is attached to L' in Formula (3000) and where Ar is optionally substituted arylene (in some

embodiments ) or optionally substituted heteroarylene, -(C₁-C₁₀-alkylene)-NR⁵⁰C(O)-(C₁-C₁₀-alkylene)-NR^{50a}- where NR^{50a} is attached to L' in Formula (3000), -C(O)-(C₁-C₁₀-alkylene)-NR⁵⁰C(O)-(C₁-C₁₀-alkylene)-NR^{50a}- where NR^{50a} is attached to L' in Formula (3000) and where each C₁-C₁₀-alkylene is independently optionally substituted with one or more hydroxy, -C(O)-N(R³⁵)-(C₁-C₁₀-alkylene)-C(O)NH-X²- where

X² is attached to L' in Formula (3000), or  where X⁴ is attached to L' in Formula (3000); and/or

b) the compounds in Table A, where the compounds in Table A are linked to BA of the Compound of Formula (III) through the hydroxy of the -C(O)CH₂OH group, or through the hydroxy of Mapracorat;

X¹ is -N(C₁₋₆alkyl)-;

X^{1b} is -S-, -NH-, or -N(C₁₋₆alkyl)-;

X^2 is -NH-;

X^3 is -CH₂-, X^3 is -CH₂-O-(C₁-C₁₀-alkylene)-C(O)- where the C(O) is attached to X^4 , or X^3 is -C(O)-;

X^4 is -O-;

R^{35} is H, -OH, -OCH₃, or C₁₋₆alkyl;

R^{50} and R^{50a} are independently hydrogen or C₁-C₆-alkyl;

R^d , R^e , and R^f are independently -H, -OH, hydroxyalkyl, alkoxycarbonyl, -C(O)OH, or -CH₂OR^g, where each R^g is independently -CH₂C(O)OH or -CH₂C(O)O(alkyl); and

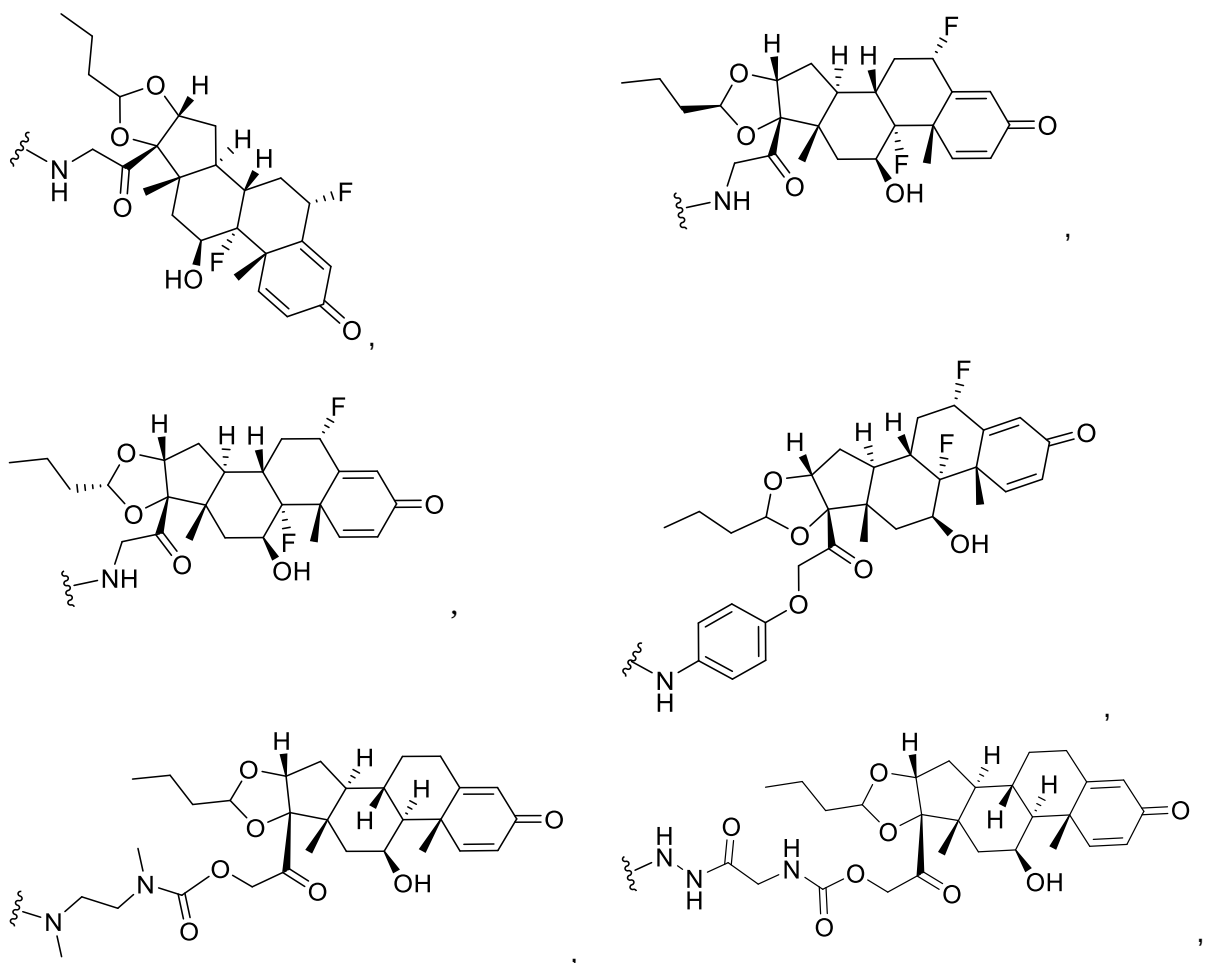
mm is 0 or 1;

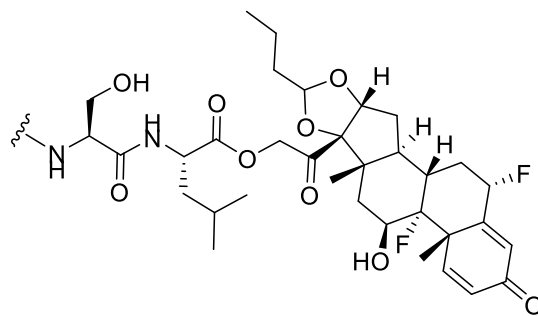
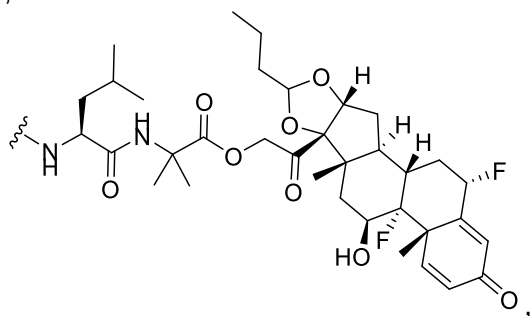
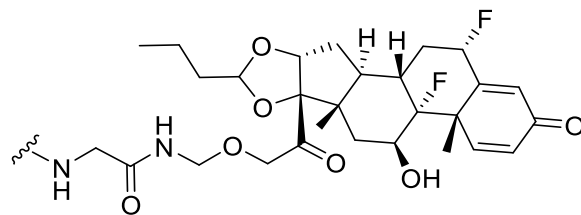
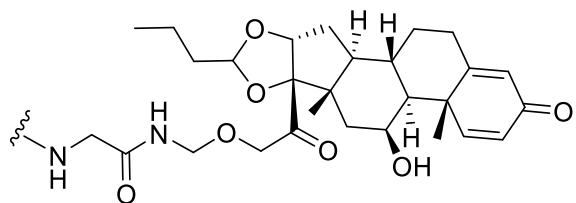
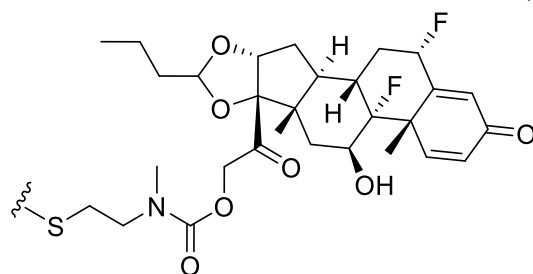
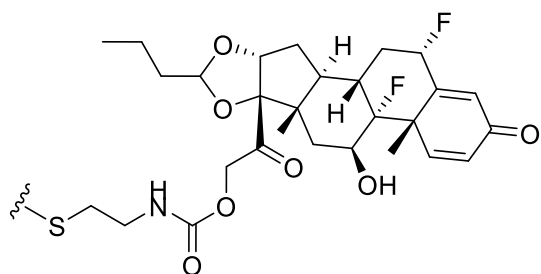
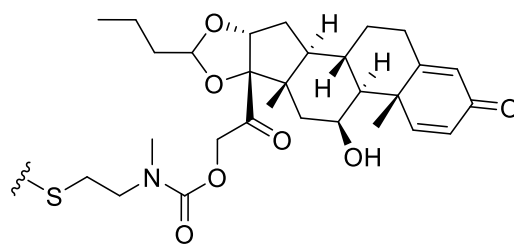
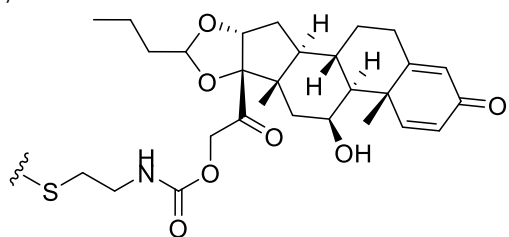
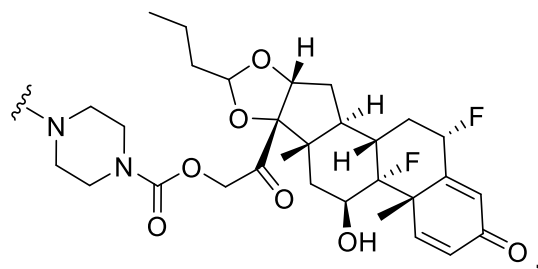
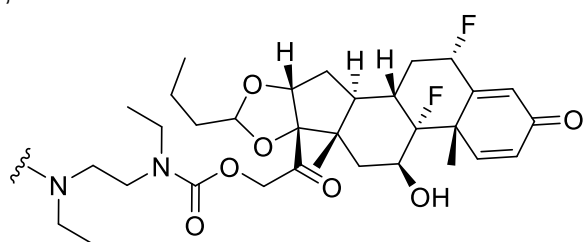
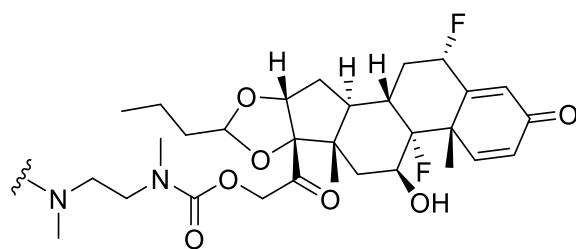
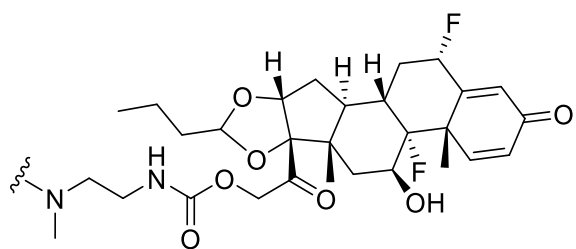
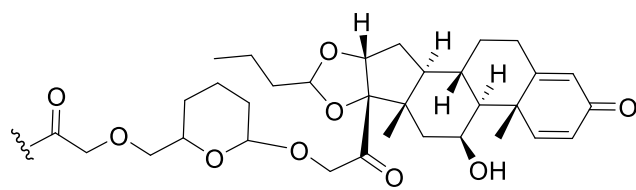
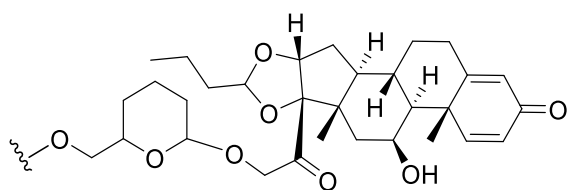
n is an integer selected from 1-30, inclusive;

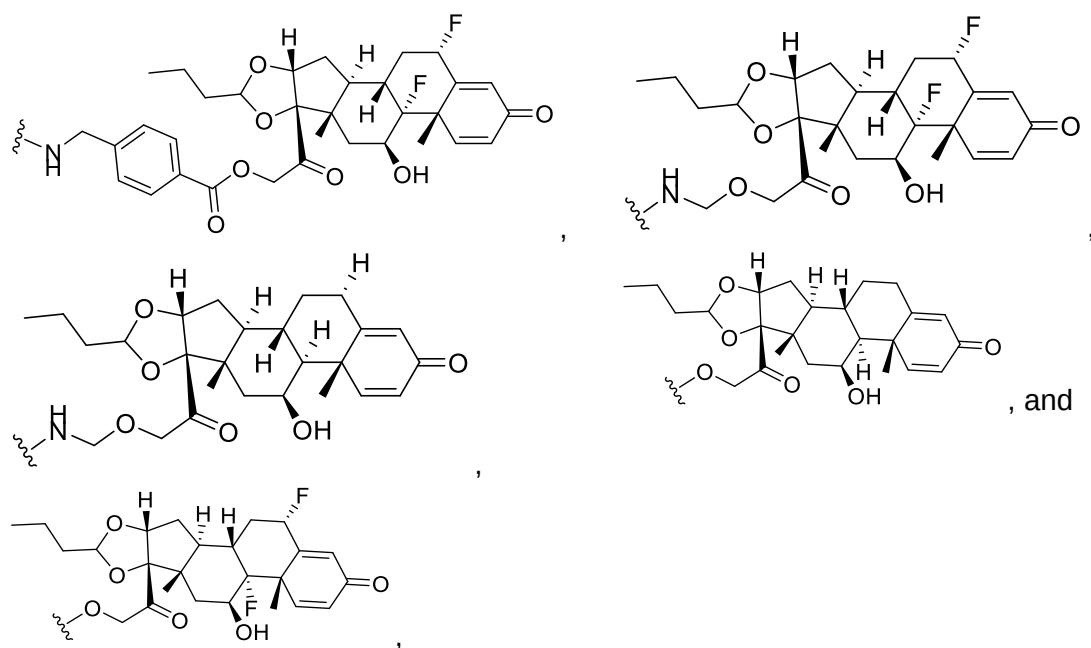
L' is a linker; and

BA is a binding agent.

25. The antibody-drug conjugate of claim 20, wherein the steroid payload is selected from the group consisting of:

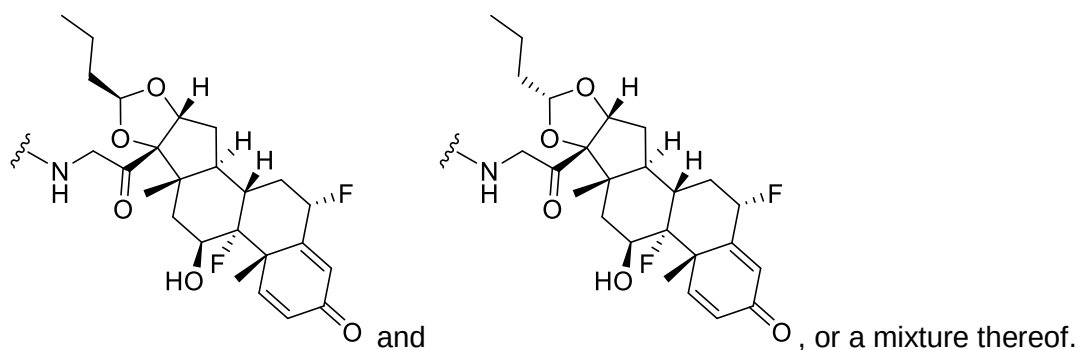




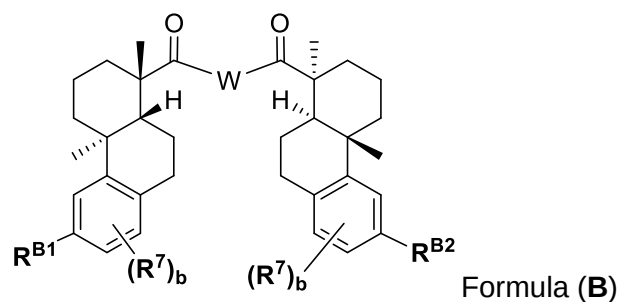


wherein the  is the bond to the linker.

26. The antibody-drug conjugate of claim 20, wherein the steroid payload is selected from the group consisting of:



27. The antibody-drug conjugate of claim 21, wherein the LXR modulator conjugated to the antibody, or antigen-binding fragment thereof, through a linker is a compound of Formula (B):



or a pharmaceutically acceptable salt, solvate, or stereoisomeric form, wherein

W is $-\text{CH}_2-$, $-\text{N}(\text{H})-$, or $-\text{O}-$;

R^{B1} is $-H$, $-OH$, $-NH_2$, alkyl, or $-OP(O)(OR^6)_2$;

R^{B2} is $-H$, $-OH$, $-CH_2NH_2$, R^{B3} , R^{B4} , R^{B5} , or $-O-R^{B5}$, wherein R^{B1} and R^{B2} are not simultaneously $-H$;

R^{B3} is $-N(R^6)_2$;

R^{B4} is $-X-Y-Z$;

X is selected from the group consisting of $-O-$ and $-N(H)-$;

Y is selected from the group consisting of alkylene, substituted alkylene (including, without limitation, oxo substitution, i.e., $=O$), heteroalkylene, and substituted heteroalkylene (including, without limitation, oxo substitution (i.e., $=O$));

Z is selected from the group consisting of $-OH$ and $-NH_2$;

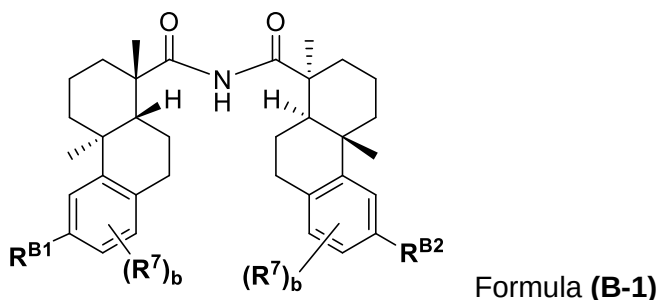
R^{B5} is alkyl, heterocycloalkyl, or substituted heterocycloalkyl, wherein each heterocycloalkyl or substituted heterocycloalkyl includes one, two, or three heteroatoms selected from nitrogen and oxygen, and includes at least one $-OH$ and $-CH_2OH$ substituent, or at least one primary or secondary nitrogen, for instance, O-glucose;

each R^6 is in each instance, $-H$, an amino acid residue, an *N*-alkyl amino acid residue, a peptide, or alkyl; and

each R^7 is, independently, halo, C_{1-6} alkyl, C_{1-6} alkoxy, $-CN$, O-glucose, O-amino acid residue, and O-PEG_b, wherein each subscript **b** is an integer from 0-3;

wherein the group R^{B1} or R^{B2} is bonded to the linker.

28. The antibody-drug conjugate of claim 21, wherein the LXR modulator conjugated to the antibody, or antigen-binding fragment thereof, through a linker is a compound of Formula (B-1):



or a pharmaceutically acceptable salt, solvate, or stereoisomeric form thereof;

wherein:

R^{B1} is $-N(H)R^8$ or $-N(R^9)_2$;

R^{B2} is $-N(H)R^8$;

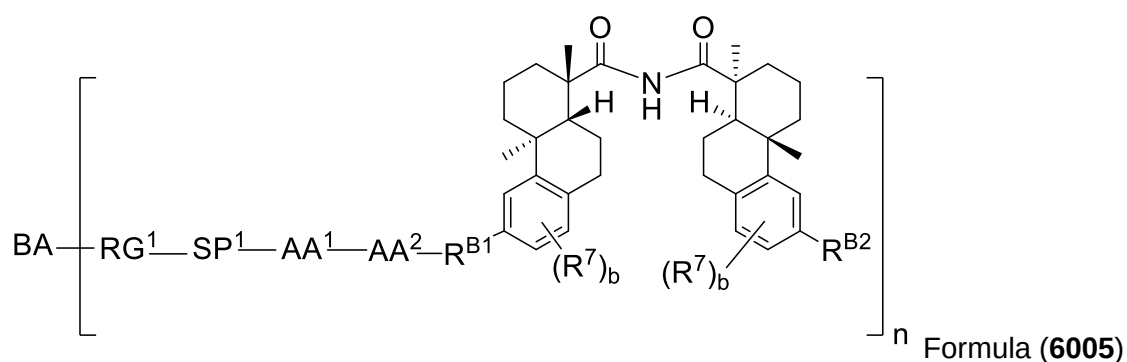
each R^8 is, independently in each instance, hydrogen, an amino acid residue, an *N*-alkyl amino acid residue, a peptide residue, a biodegradable moiety, or alkyl;

R^9 is alkyl, aryl, arylalkyl, heterocycloalkyl, or substituted heterocycloalkyl, wherein each heterocycloalkyl or substituted heterocycloalkyl comprises one, two, or three heteroatoms selected from nitrogen and oxygen, and when substituted includes at least one $-OH$ and $-CH_2OH$, or at least one primary or secondary nitrogen;

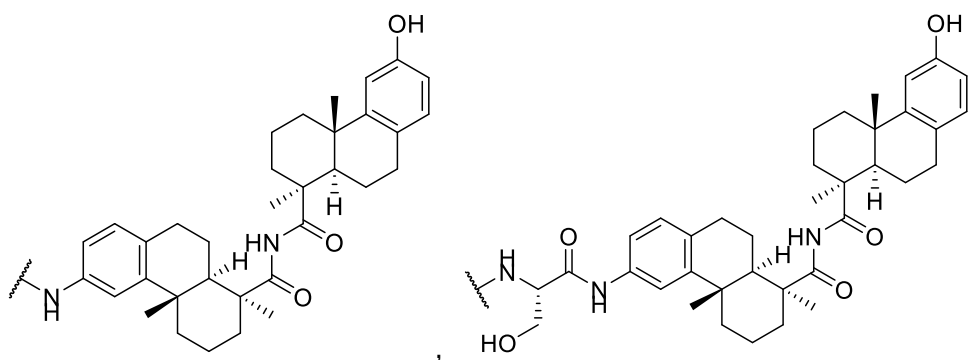
each R^7 is independently halo, C_{1-6} alkyl, C_{1-6} alkoxy, $-CN$, O-glucose, O-amino acid residue, or O-PEG_b, wherein each subscript *b* is an integer from 0-3;

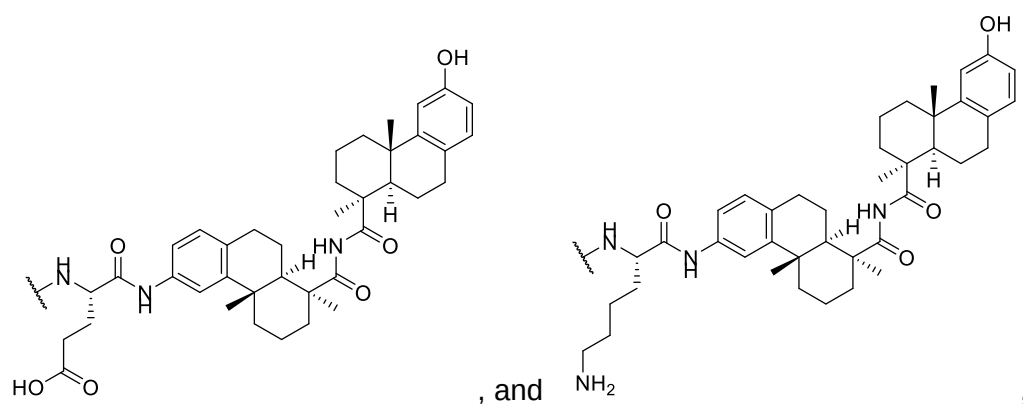
wherein the group R^{B1} or R^{B2} is bonded to the linker.

29. The antibody-drug conjugate of any one of claims 7-19, 21, and 27-28, having the structure of Formula (6005)



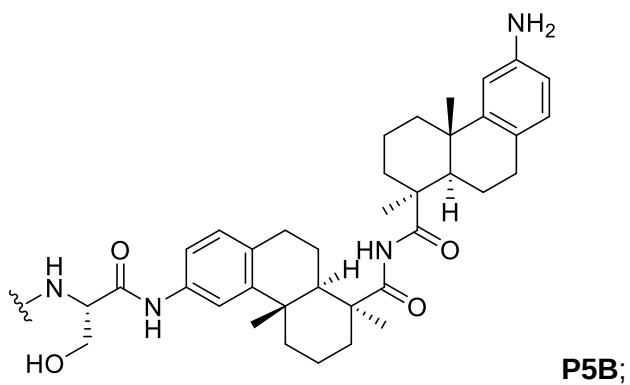
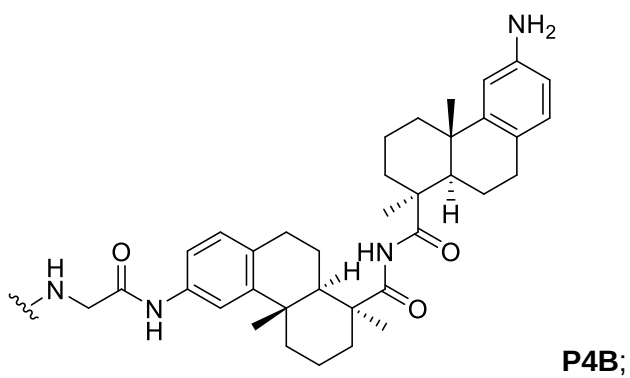
30. The antibody-drug conjugate of claim 21, wherein the LXR modulator is selected from the group consisting of:

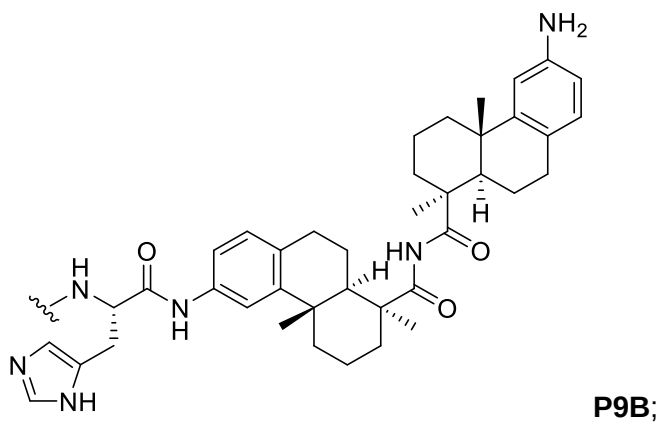
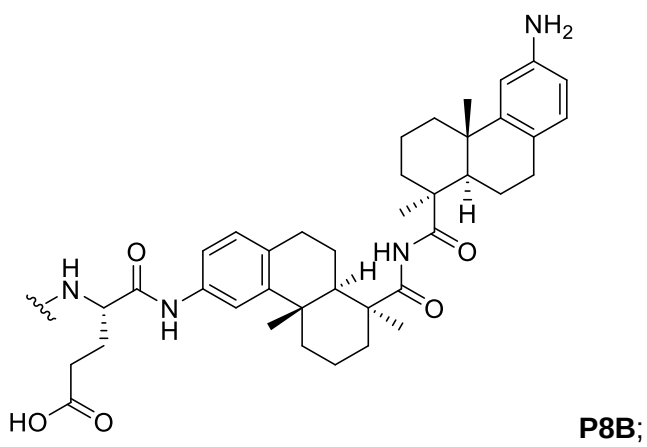
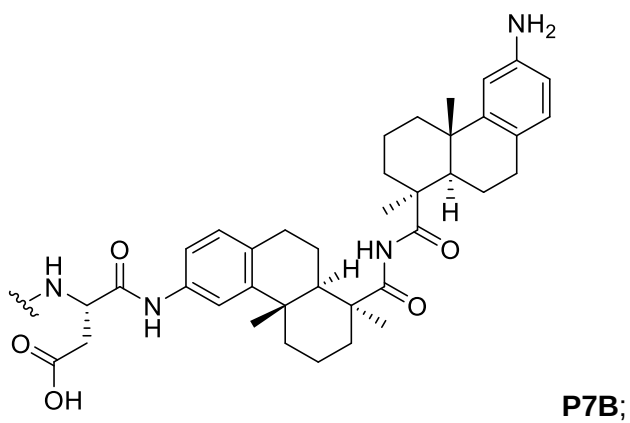
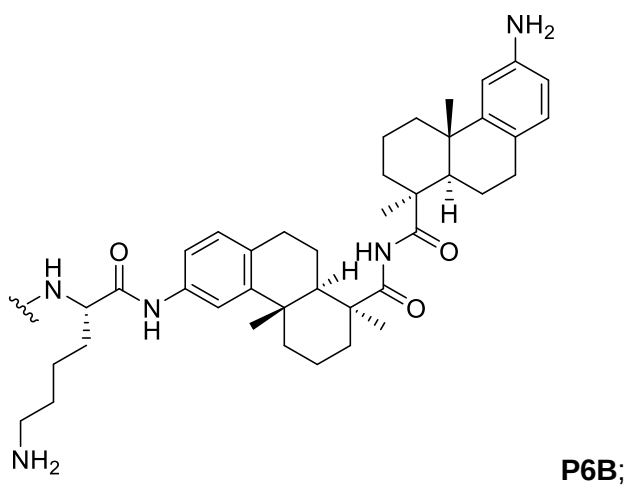


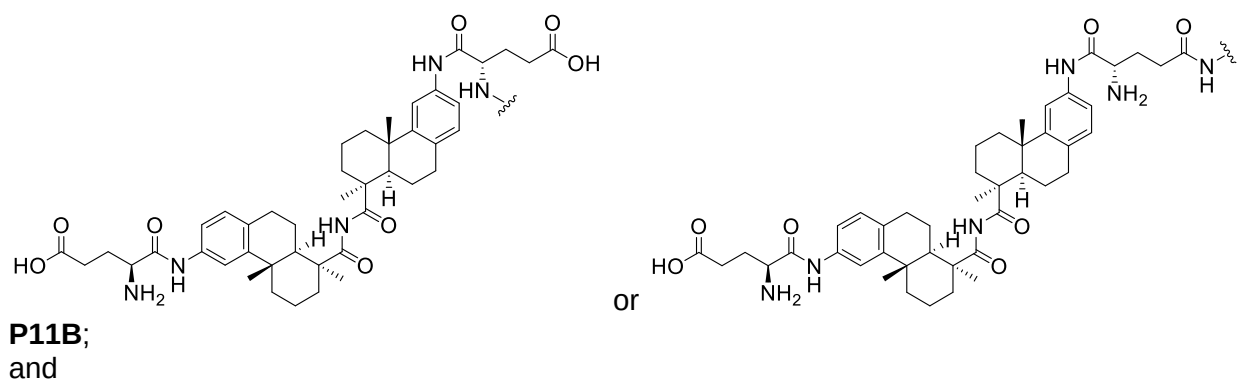
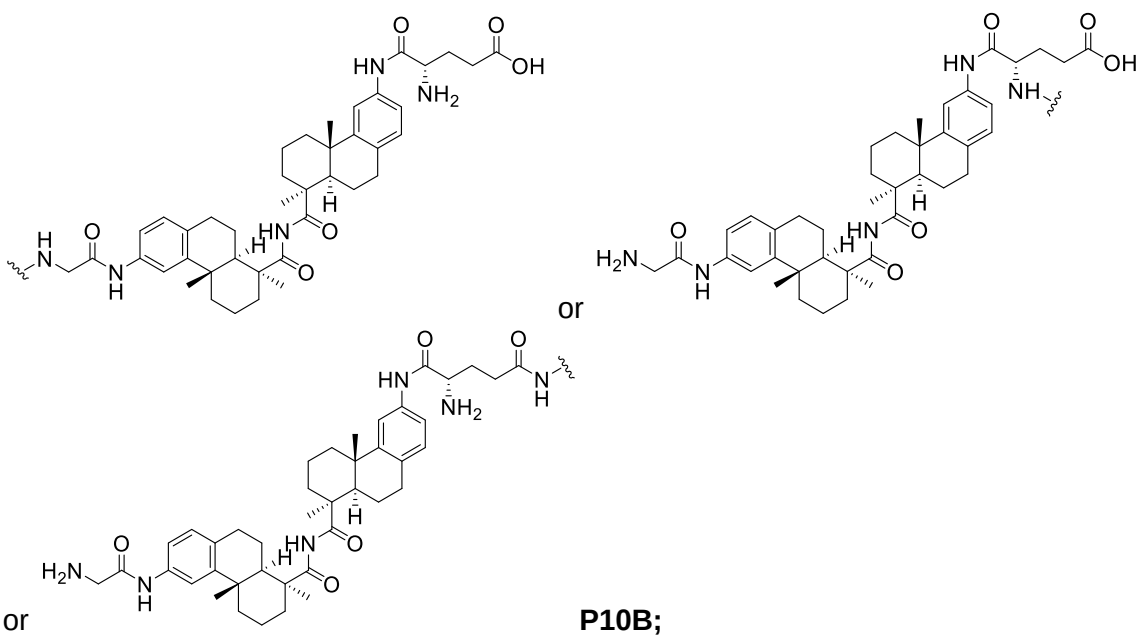
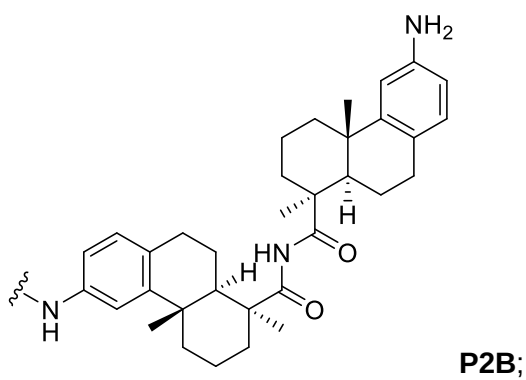
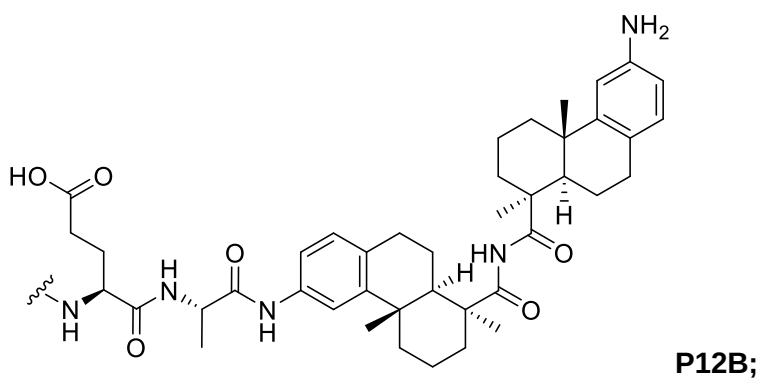


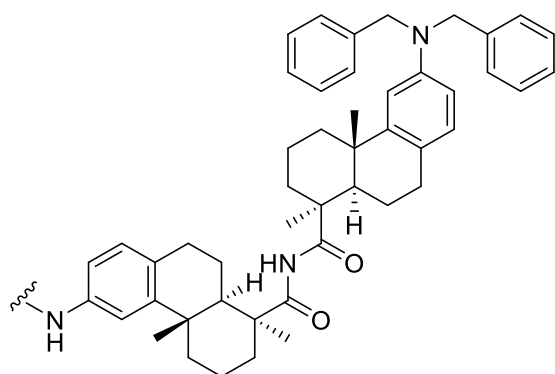
wherein the  is the bond to the linker.

31. The antibody-drug conjugate of claim 21, wherein the LXR modulator is selected from the group consisting of:





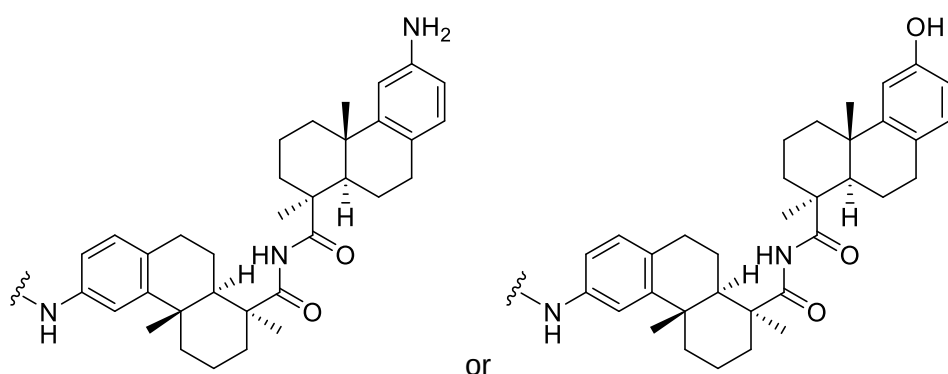




P3B;

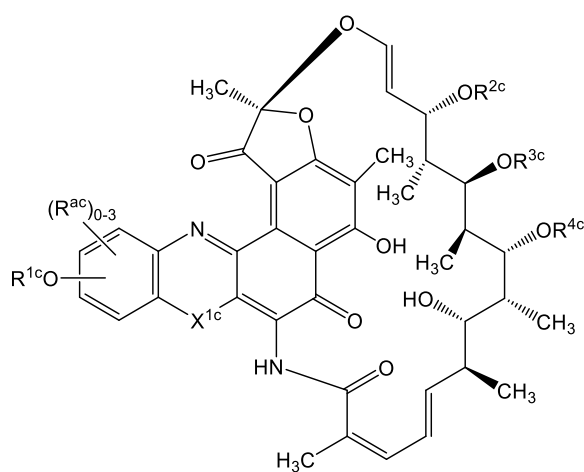
wherein the  is the bond to the linker.

32. The antibody-drug conjugate of claim 21, wherein the LXR modulator is



wherein the  is the bond to the linker.

33. The antibody-drug conjugate of claim 22, wherein the rifamycin analog is a compound of Formula (C-1):



Formula (C-1)

or a pharmaceutically acceptable salt, solvate, or stereoisomeric form thereof;
wherein:

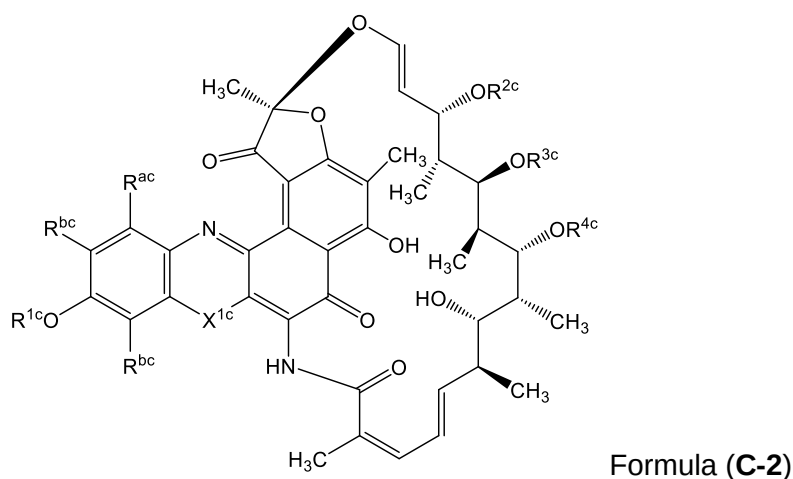
R^{1c} is selected from $-S-$, $-O-$ and $-NR^{5c}$;

R^{1c} is amino-C₁₋₆alkyl; C₁₋₆alkylaminoC₁₋₆alkyl; di-C₁₋₆alkylaminoC₁₋₆alkyl; hydroxy-C₁₋₆alkyl; HS-C₁₋₆alkyl; (**R^{5c}**)₂N-C₁₋₆alkylene-N(**R^{5c}**)-C₁₋₆alkyl; (**R^{5c}**)₂N-C₁₋₆alkylene-O-C₁₋₆alkyl; (**R^{5c}**)₂N-C₁₋₆alkylene-S-C₁₋₆alkyl; heterocycloalkyl or heterocycloalkyl-C₁₋₆alkyl; wherein heterocycloalkyl includes one, two, or three heteroatoms selected from O, N, and S; and wherein heterocycloalkyl is optionally substituted with halo, C₁₋₆alkyl, -OH, =O, or –N(**R^{5c}**)₂;

R^{2c}, **R^{3c}**, and **R^{4c}** are independently selected from hydrogen, C₁₋₆alkyl, and -(C=O)-**R^{5c}**; each **R^{ac}**, when present, is independently selected from -F; -Cl; -Br; -I; -OH; -NH₂; and C₁₋₆alkoxy; and

R^{5c} is independently, at each occurrence, selected from hydrogen; and C₁₋₆alkyl; wherein the group **R^{1c}** is bonded to the linker.

34. The antibody-drug conjugate of claim 22, wherein the rifamycin analog is a compound of Formula (**C-2**):



or a pharmaceutically acceptable salt, solvate, or stereoisomeric form thereof; wherein:

X^{1c} is selected from –S–; –O– and –N**R^{5c}**;

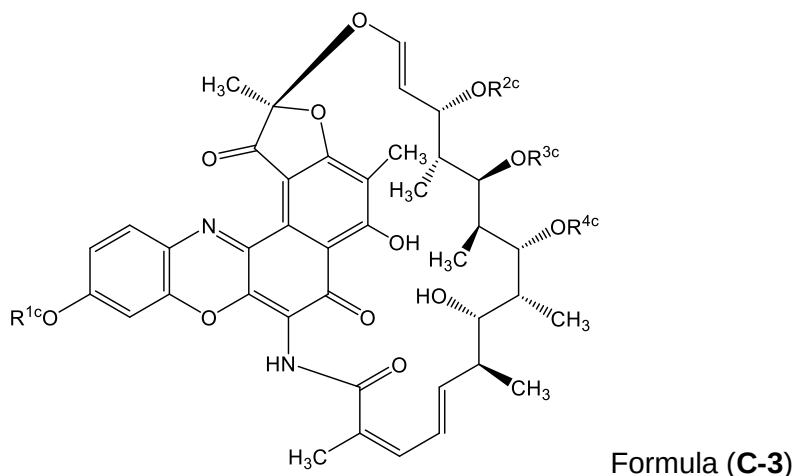
R^{1c} is amino-C₁₋₆alkyl; C₁₋₆alkylaminoC₁₋₆alkyl; di-C₁₋₆alkylaminoC₁₋₆alkyl; hydroxy-C₁₋₆alkyl; HS-C₁₋₆alkyl; (**R^{5c}**)₂N-C₁₋₆alkylene-N(**R^{5c}**)-C₁₋₆alkyl; (**R^{5c}**)₂N-C₁₋₆alkylene-O-C₁₋₆alkyl; (**R^{5c}**)₂N-C₁₋₆alkylene-S-C₁₋₆alkyl; heterocycloalkyl or heterocycloalkyl-C₁₋₆alkyl; wherein heterocycloalkyl includes one, two, or three heteroatoms selected from O, N, and S; and wherein heterocycloalkyl is optionally substituted with halo, C₁₋₆alkyl, -OH, =O, or –N(**R^{5c}**)₂;

R^{2c}, **R^{3c}**, and **R^{4c}** are independently selected from hydrogen, C₁₋₆alkyl, and -(C=O)-**R^{5c}**;

R^{ac} and **R^{bc}** are independently selected from -F; -Cl; -Br; -I; -OH; -NH₂; and C₁₋₆alkoxy; and

R^{5c} is independently, at each occurrence, selected from hydrogen; and C₁₋₆alkyl; wherein the group **R^{1c}** is bonded to the linker.

35. The antibody-drug conjugate of claim 22, wherein the rifamycin analog is a compound of Formula (C-3):



or a pharmaceutically acceptable salt, solvate, or stereoisomeric form thereof;
wherein:

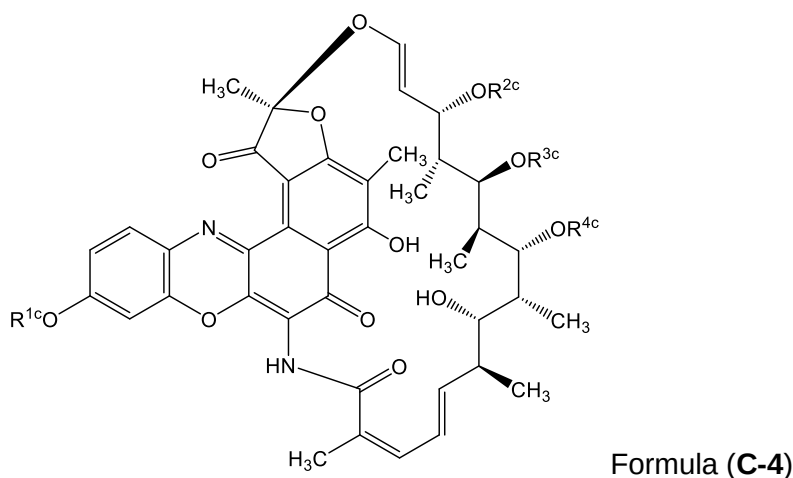
R^{1c} is di-C₁₋₆alkylaminoC₁₋₆alkyl; (**R^{5c}**)₂N-C₁₋₆alkylene-N(**R^{5c}**)-C₁₋₆alkyl; heterocycloalkyl or heterocycloalkyl-C₁₋₆alkyl; wherein heterocycloalkyl includes one, two, or three heteroatoms selected from O, N, and S; and wherein heterocycloalkyl is optionally substituted with halo, C₁₋₆alkyl, -OH, =O, or -N(**R^{5c}**)₂; and

R^{2c}, **R^{3c}**, and **R^{4c}** are independently selected from hydrogen, C₁₋₆alkyl, and -(C=O)-**R^{5c}**;
and

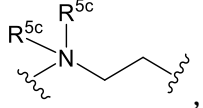
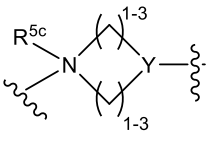
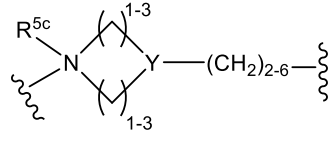
R^{5c} is selected from hydrogen and C₁₋₆alkyl;

wherein the group **R^{1c}** is bonded to the linker.

36. The antibody-drug conjugate of claim 22, wherein the rifamycin analog is a compound of Formula (C-4):



or a pharmaceutically acceptable salt, solvate, or stereoisomeric form thereof;
wherein:

R^{1c} is , ; or ; wherein Y is C or N;

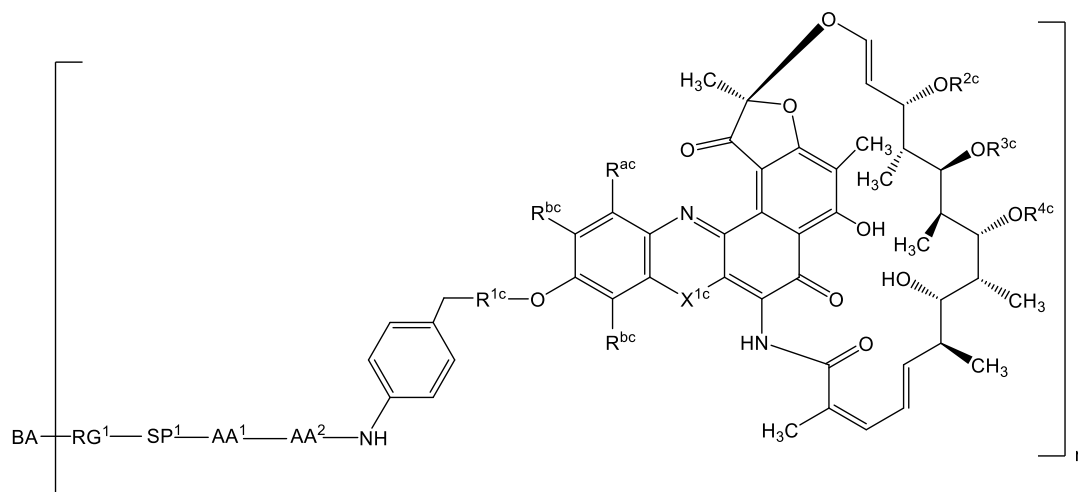
R^{2c} , R^{3c} , and R^{4c} are independently selected from hydrogen, C_{1-6} alkyl, and $-(C=O)-R^{5c}$;

and

R^{5c} is independently, at each occurrence, absent, or selected from hydrogen and C_{1-6} alkyl; wherein the group R^{1c} is bonded to the linker via a nitrogen atom as indicated by the wavy

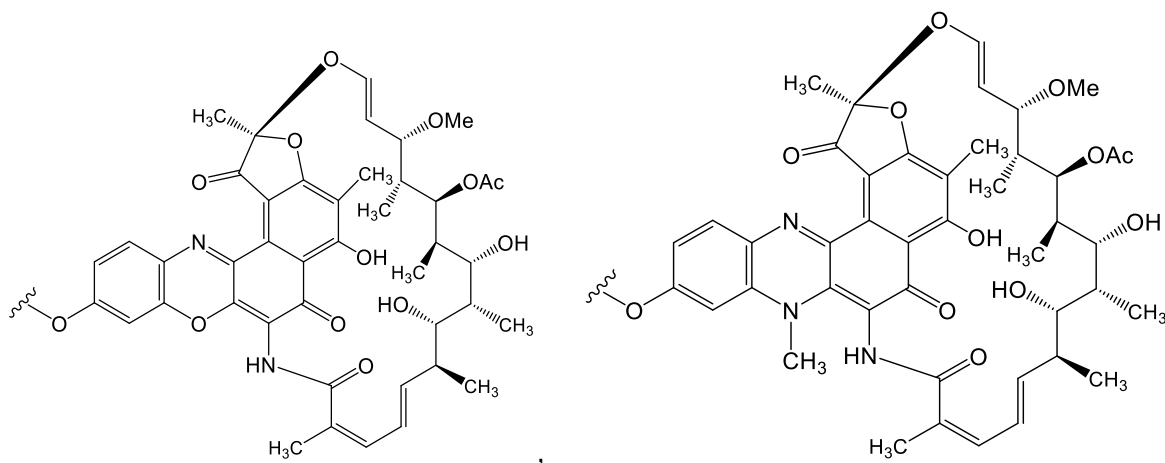
line .

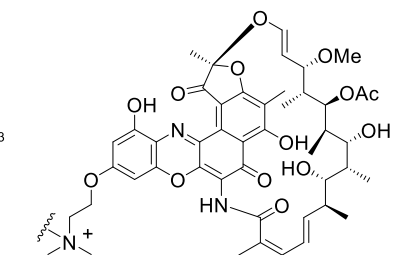
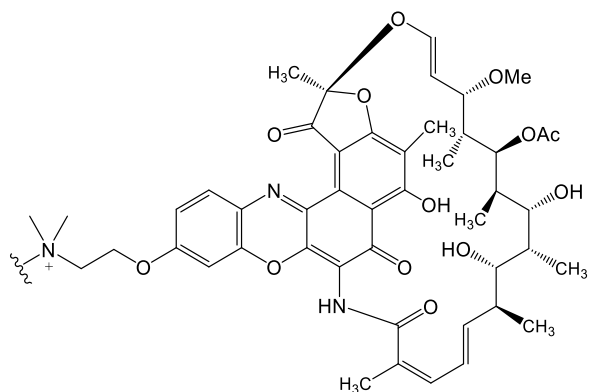
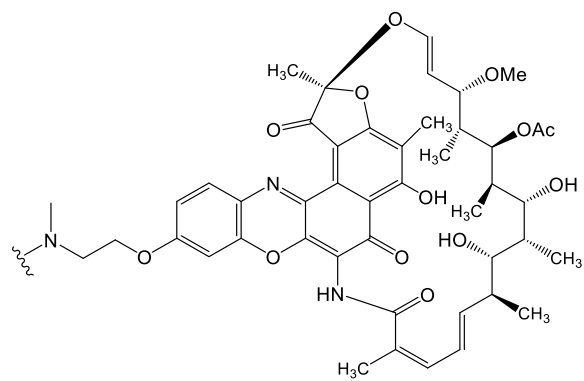
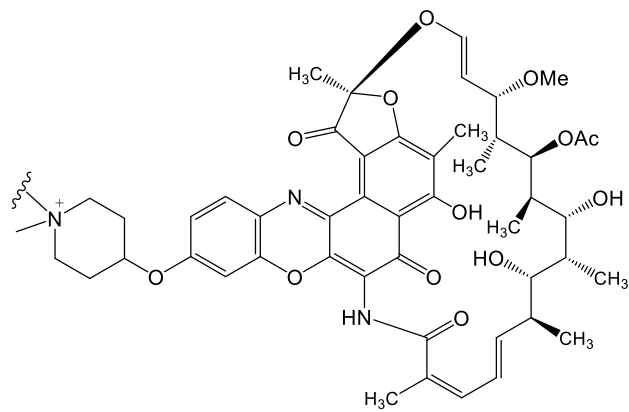
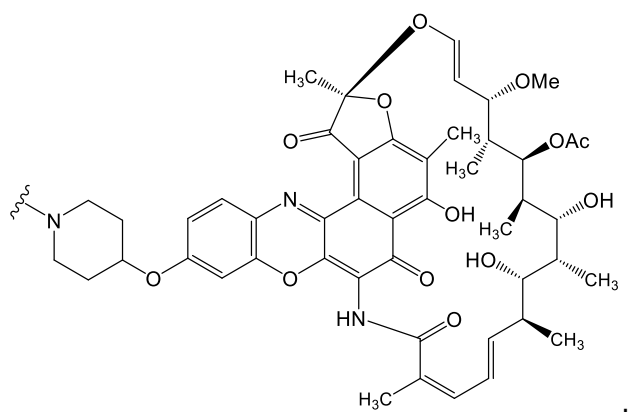
37. The antibody-drug conjugate of any one of claims 7-9, 11, 15-19, 22 and 33-36, having the structure of Formula (7002):

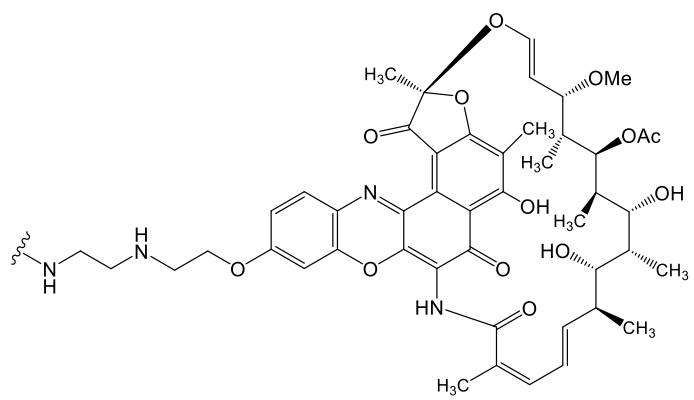
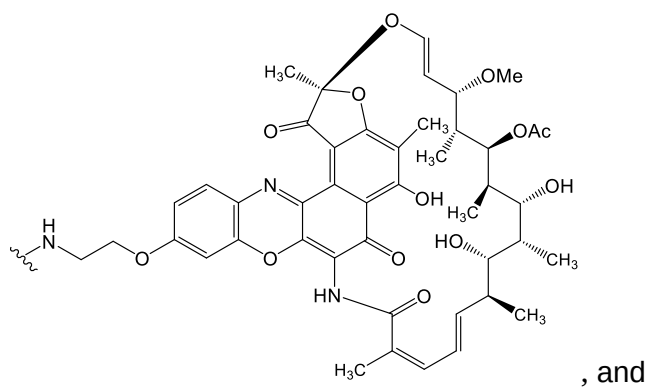


Formula (7002).

38. The antibody-drug conjugate of any one of claims 7-9, 11, 15-19, 22 and 33-37, wherein the rifamycin analog is selected from the group consisting of:

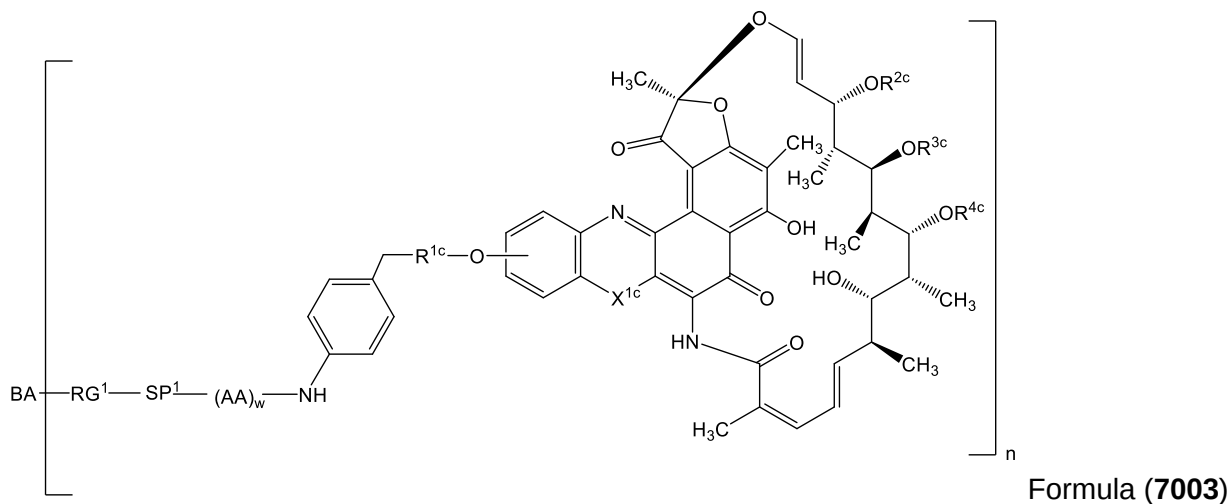






wherein the  is the bond to the linker.

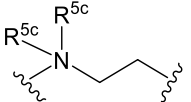
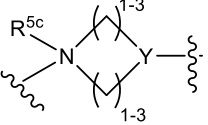
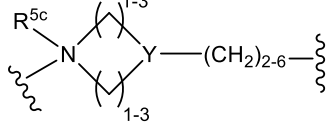
39. An antibody-rifamycin analog conjugate having the structure of Formula (7003):



or a pharmaceutically acceptable salt, solvate, or stereoisomeric form thereof;

wherein:

X^{1c} is selected from $-S-$; $-O-$ and $-NR^{5c}$;

R^{1c} is , ; or ; wherein Y is C or N;

R^{2c} , R^{3c} , and R^{4c} are independently selected from hydrogen, C_{1-6} alkyl, and $-(C=O)-R^{5c}$;

R^{5c} is independently, at each occurrence, absent, or selected from hydrogen; and C₁₋₆alkyl;

each **AA** is an independently selected amino acid;

SP¹ is absent, or a spacer;

RG¹ is a reactive group residue;

BA is an anti-MSR1 antibody or antigen binding fragment thereof;

subscript **n** is an integer from 1 to 30;

subscript **w** is 2, 3, or 4;

wherein **R**^{1c} is bonded to the linker via a nitrogen atom as indicated by the wavy line



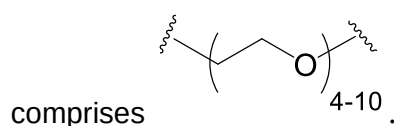
40. The antibody- rifamycin analog conjugate of claim 39, wherein **X**^{1c} is O.

41. The antibody- rifamycin analog conjugate of claim 39 or claim 40, wherein **BA** is an anti-MSR1 antibody or antigen binding fragment thereof; comprising an N297Q mutation.

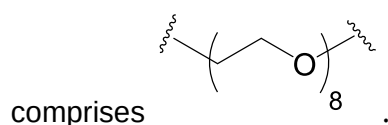
42. The antibody- rifamycin analog conjugate of any one of claims 39-41, wherein subscript **w** is 2.

43. The antibody- rifamycin analog conjugate of any one of claims 39-42, wherein (**AA**)₂ is valine-citrulline.

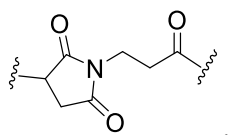
44. The antibody- rifamycin analog conjugate of any one of claims 39-43, wherein **SP**¹



45. The antibody- rifamycin analog conjugate of any one of claims 39-43, wherein **SP**¹

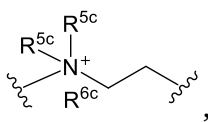
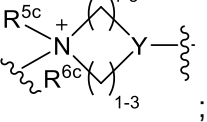
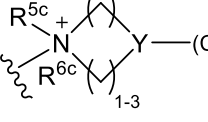


46. The antibody- rifamycin analog conjugate of any one of claims 39-45, wherein **RG**¹ comprises



47. The antibody- rifamycin analog conjugate of any one of claims 39-45, wherein

X^{1c} is O;

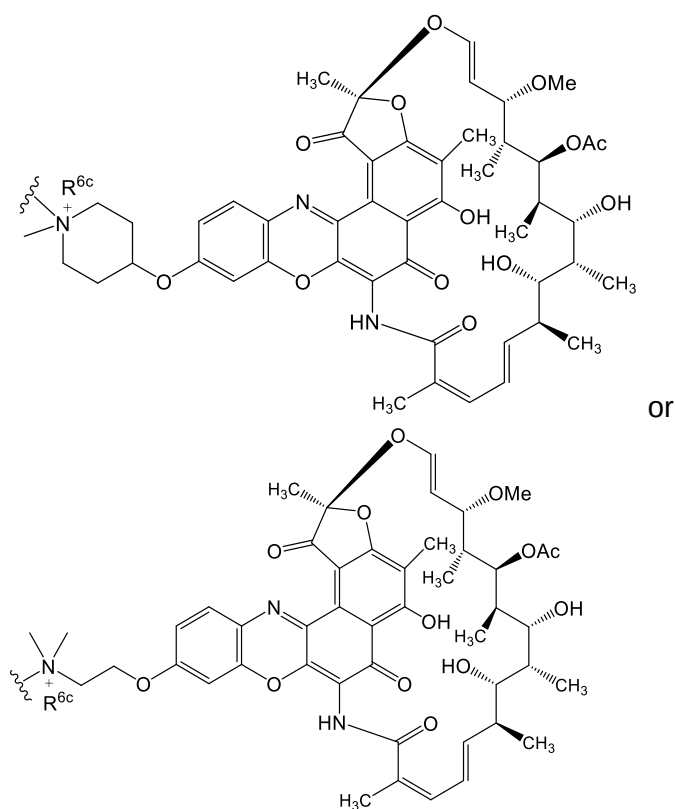
R^{1c} is , ; or ; wherein **Y** is C or N;

wherein R^{1c} is bonded to the linker via the quaternary nitrogen atom of R^{1c} ;

R^{5c} is C_{1-6} alkyl; and

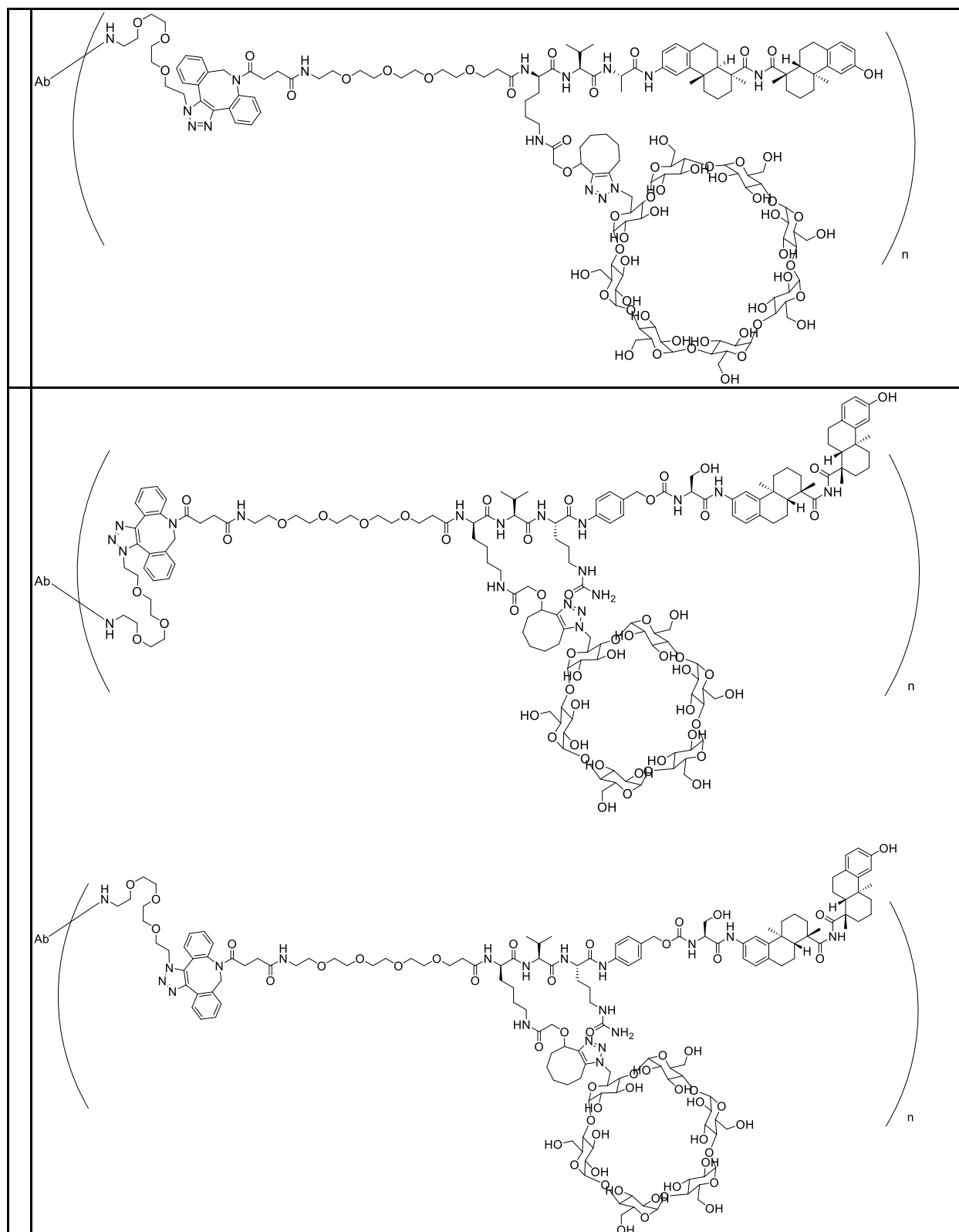
R^{6c} is a counter ion.

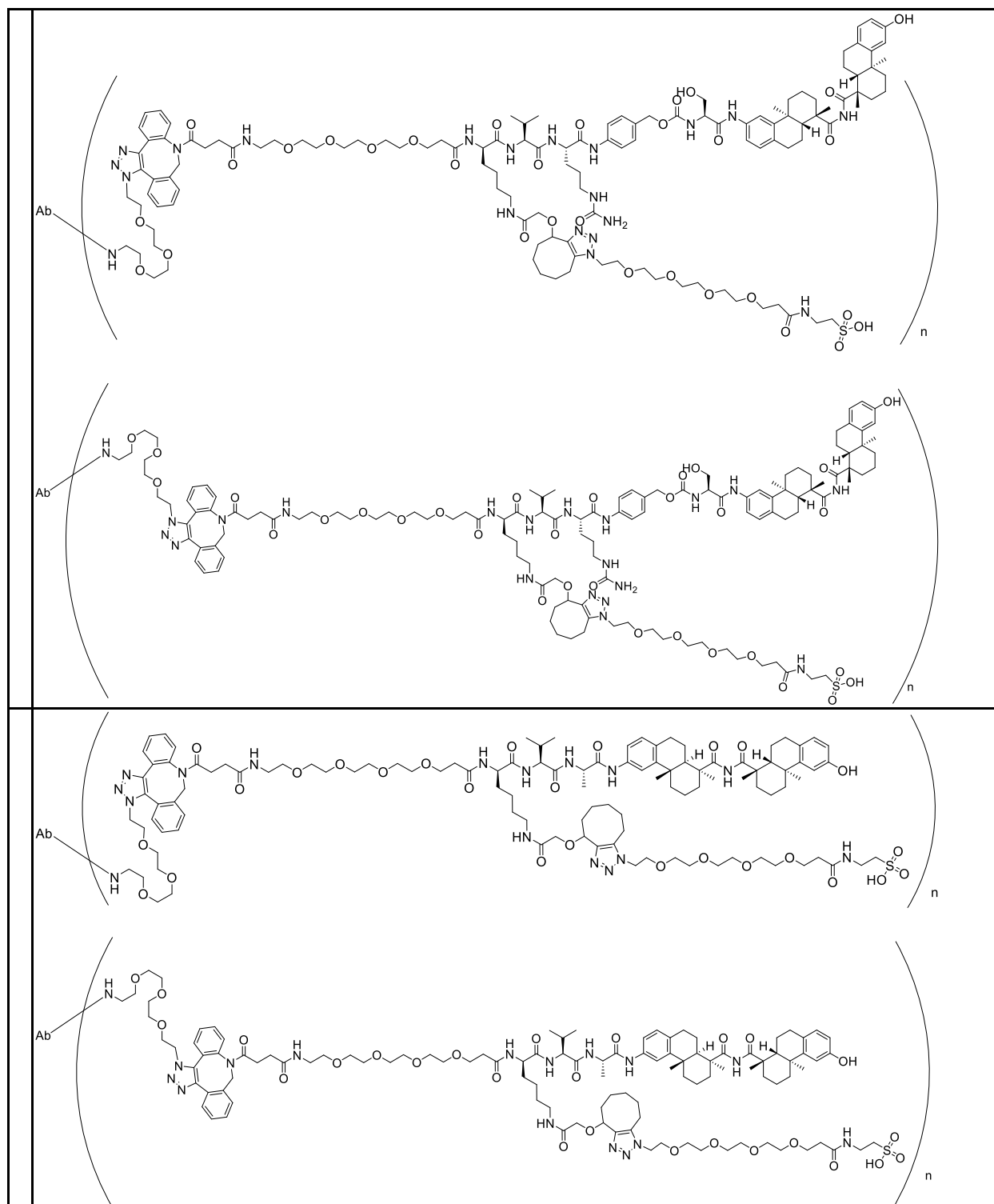
48. The antibody- rifamycin analog conjugate of any one of claims 39-47, wherein the rifamycin analog is:

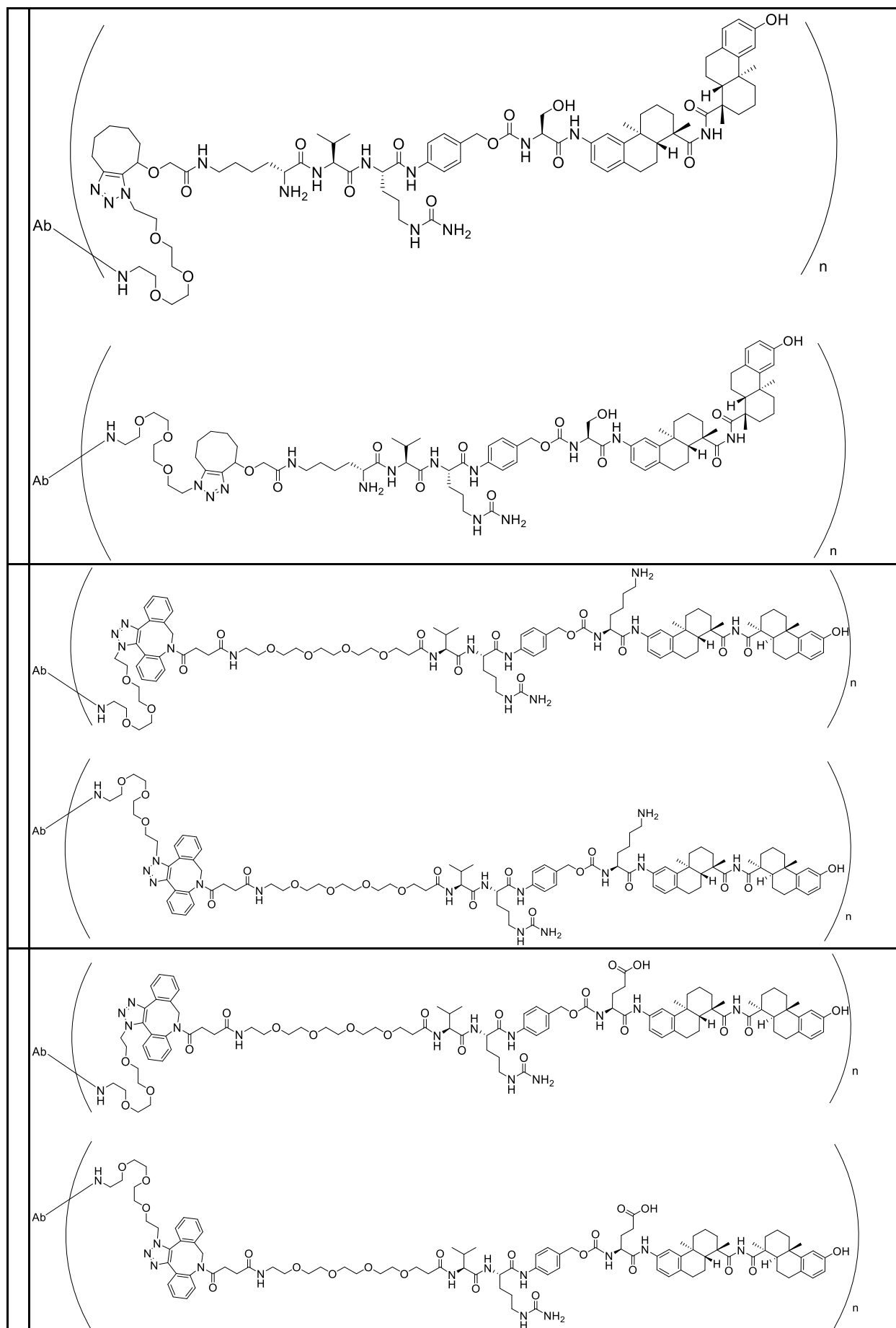


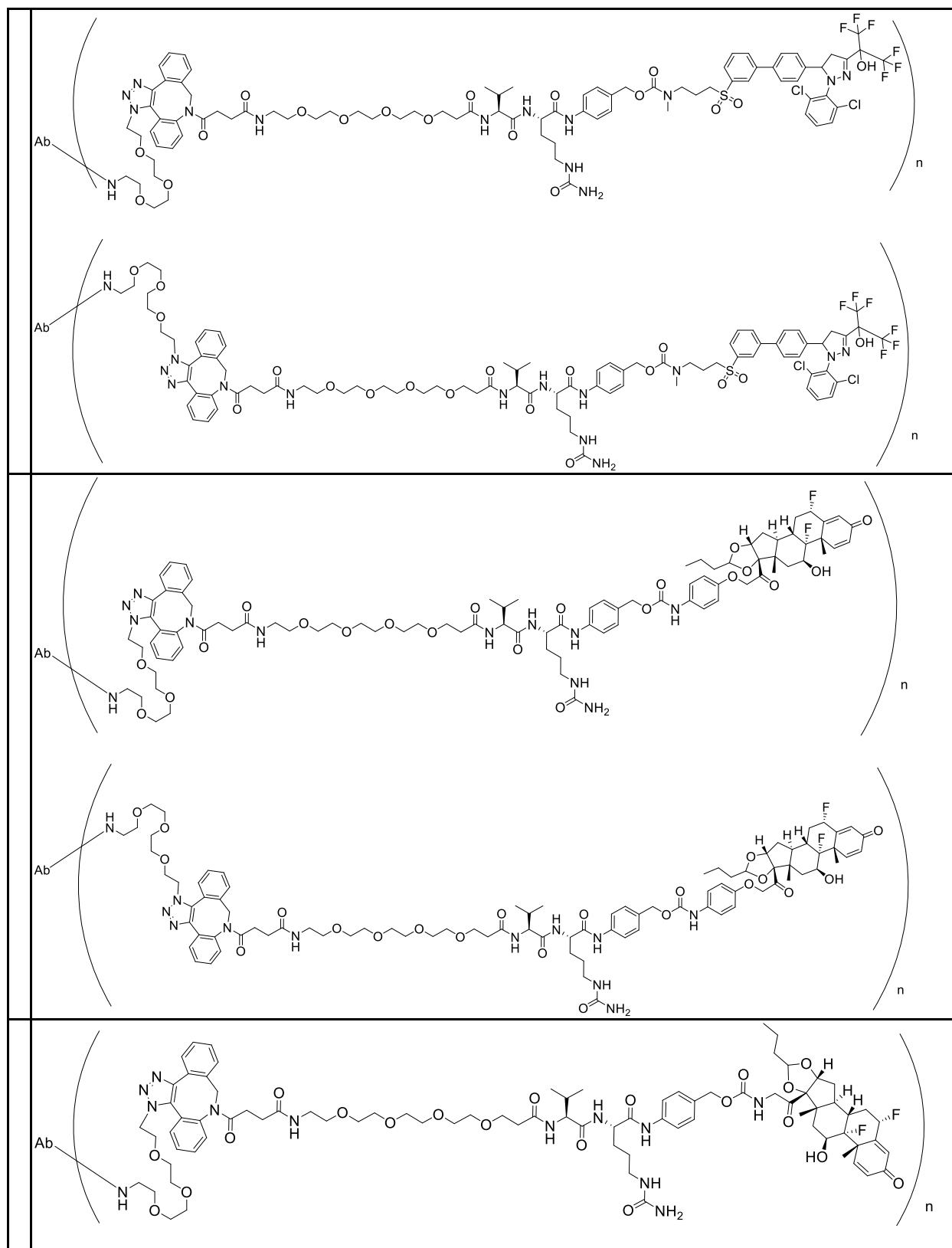
49. The antibody-drug conjugate of any one of claims 7-22, selected from the group consisting of:

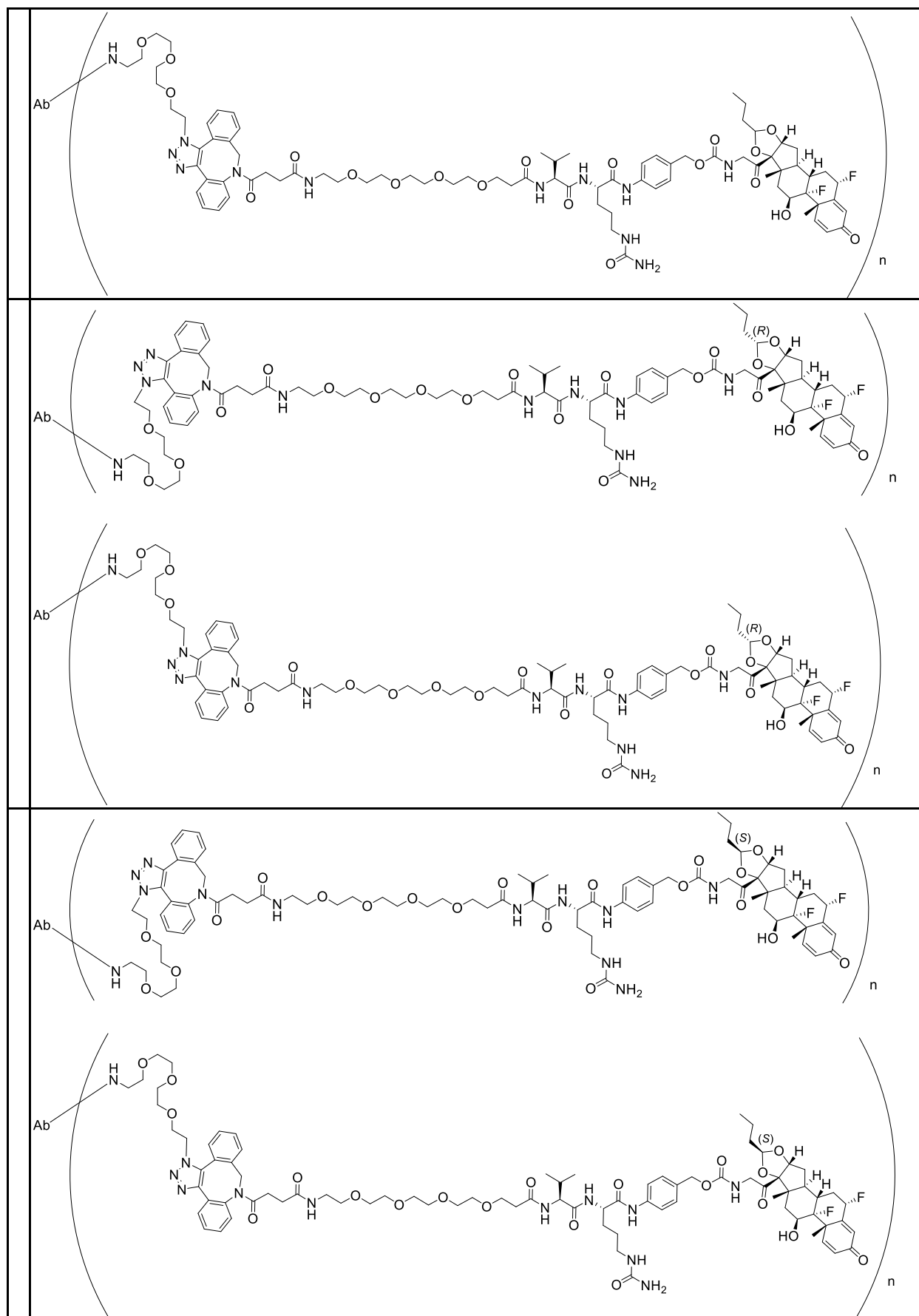
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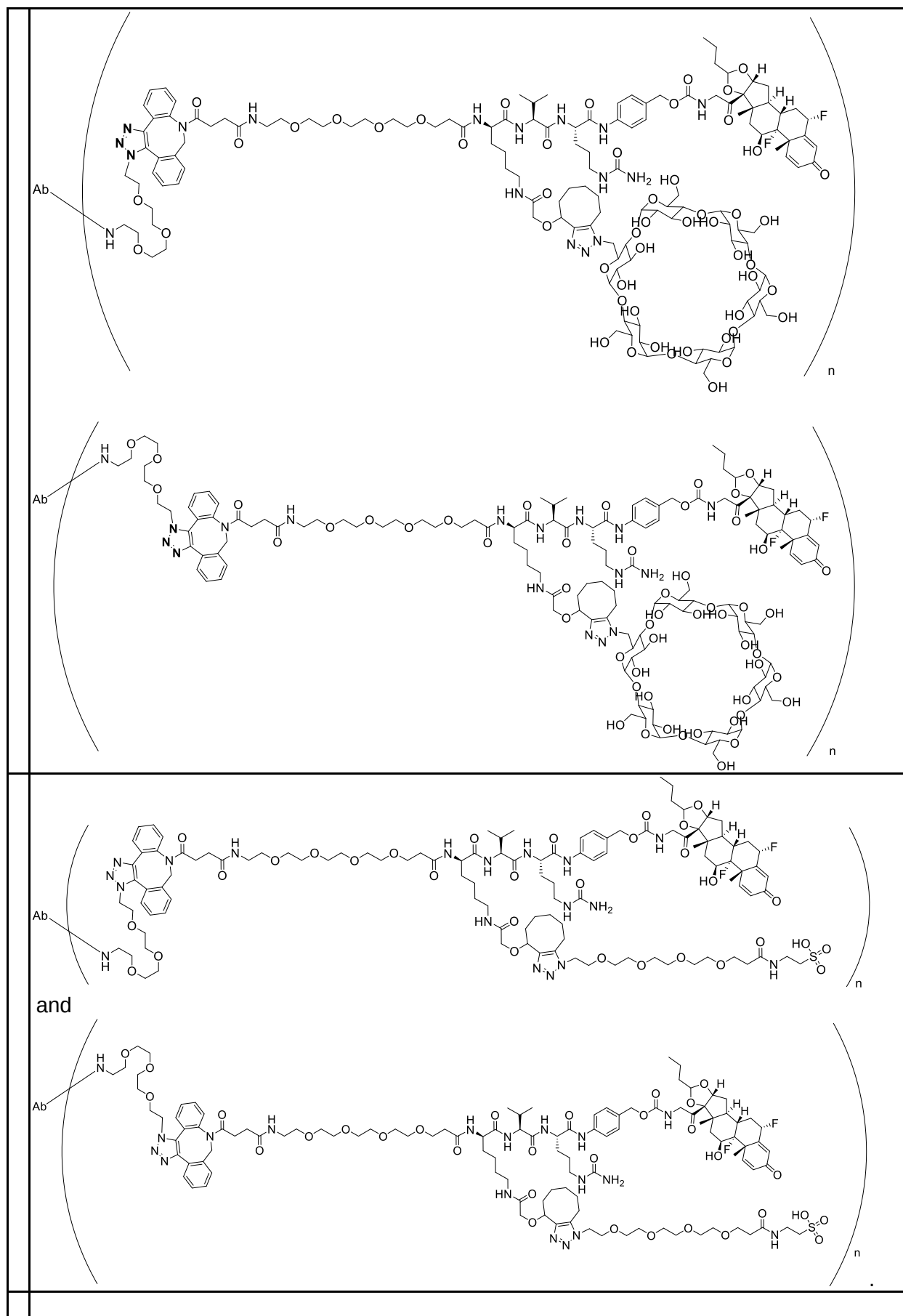


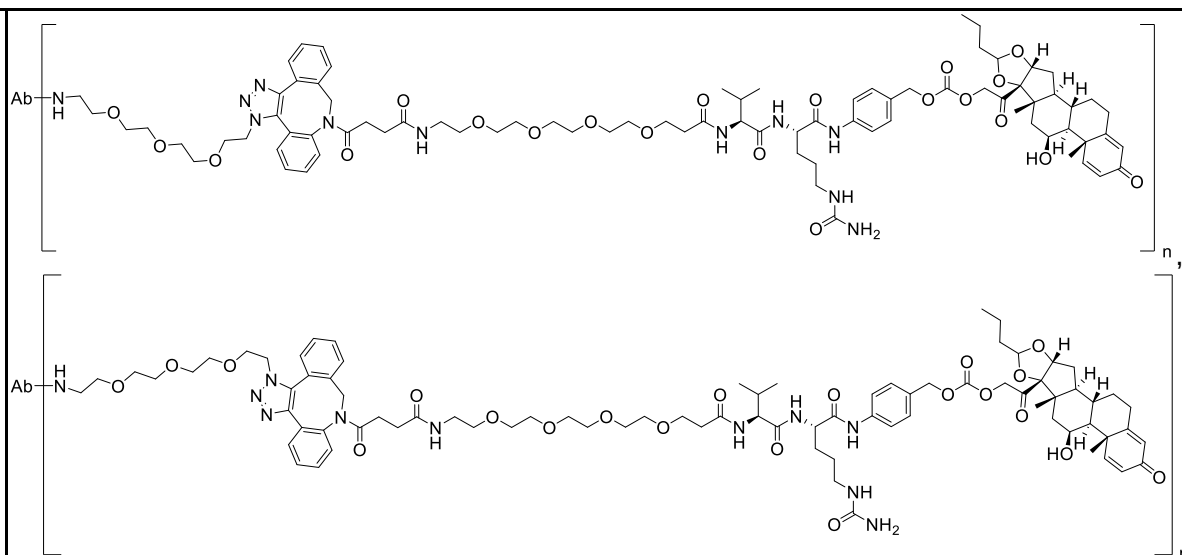




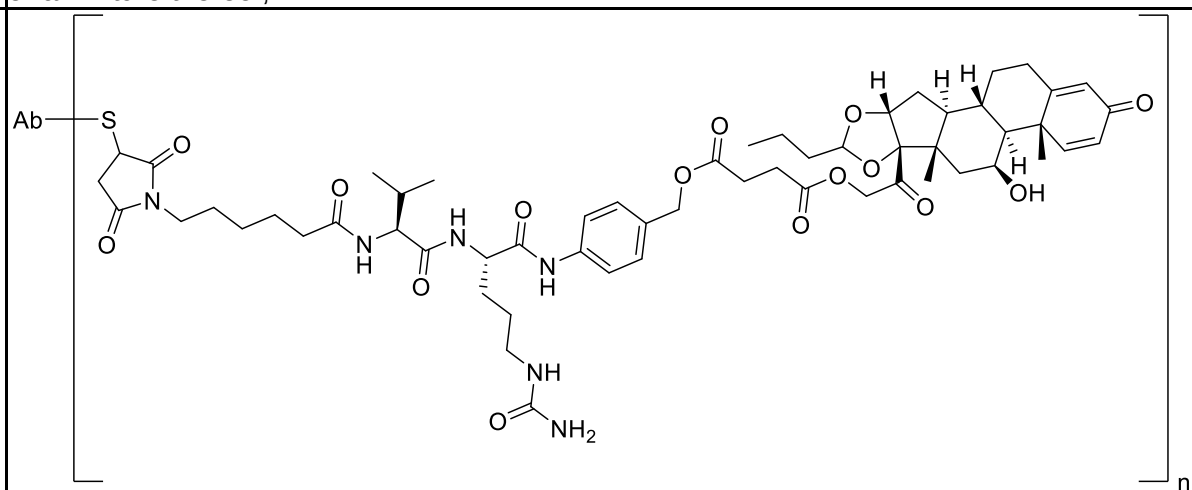




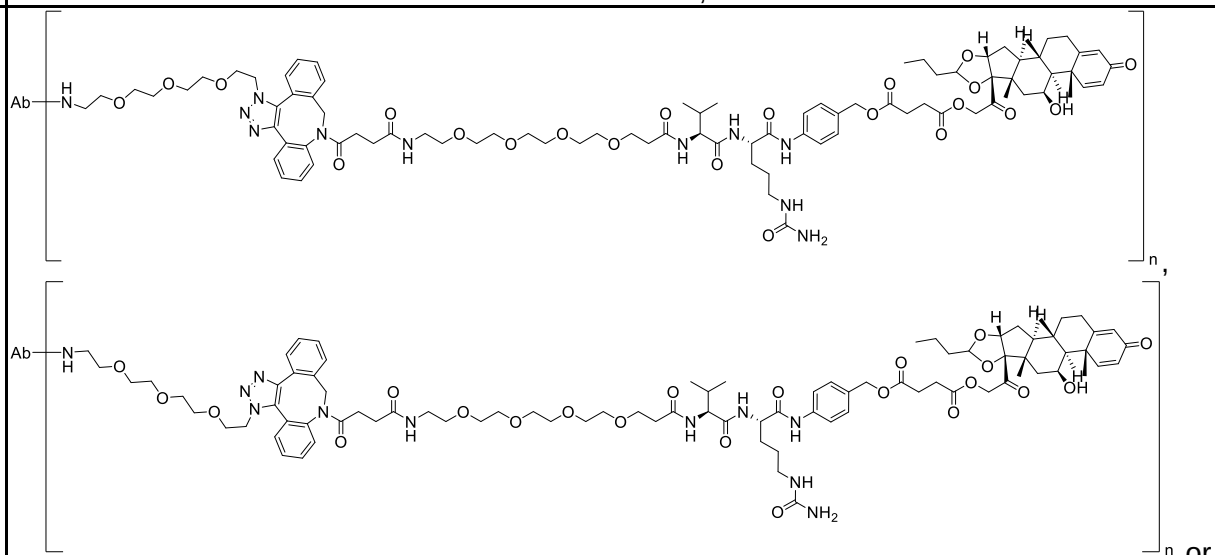




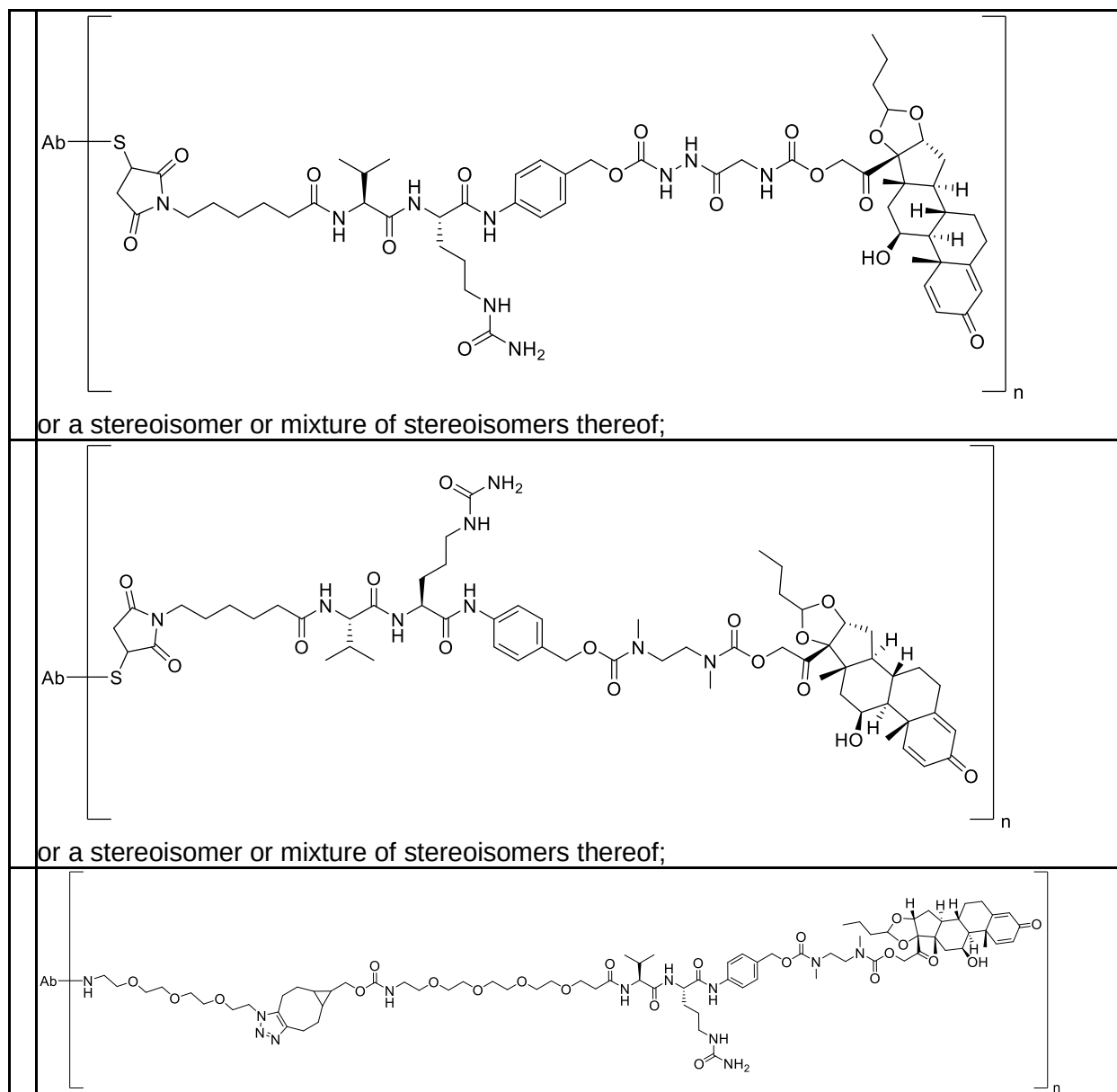
or a mixture thereof;

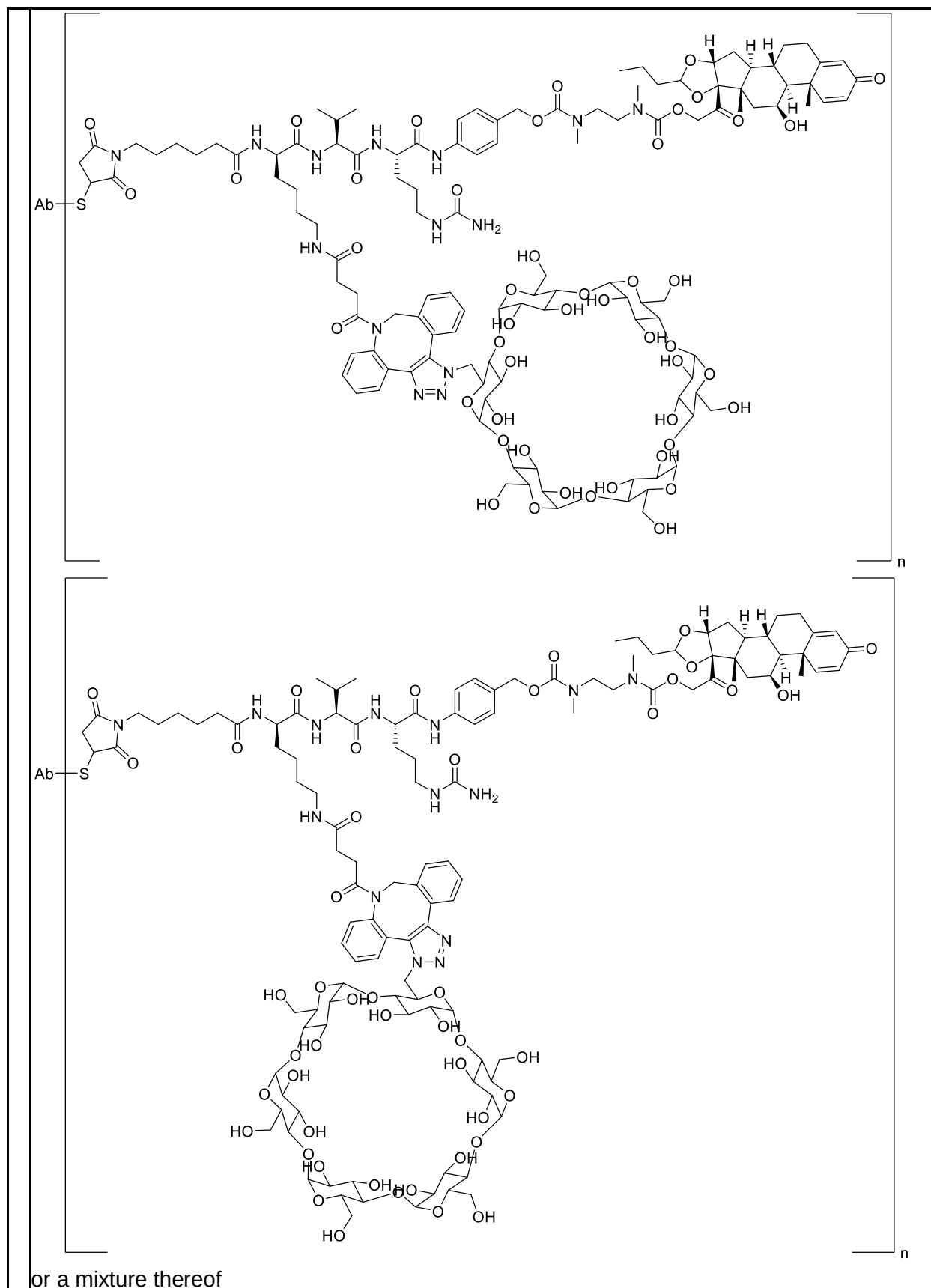


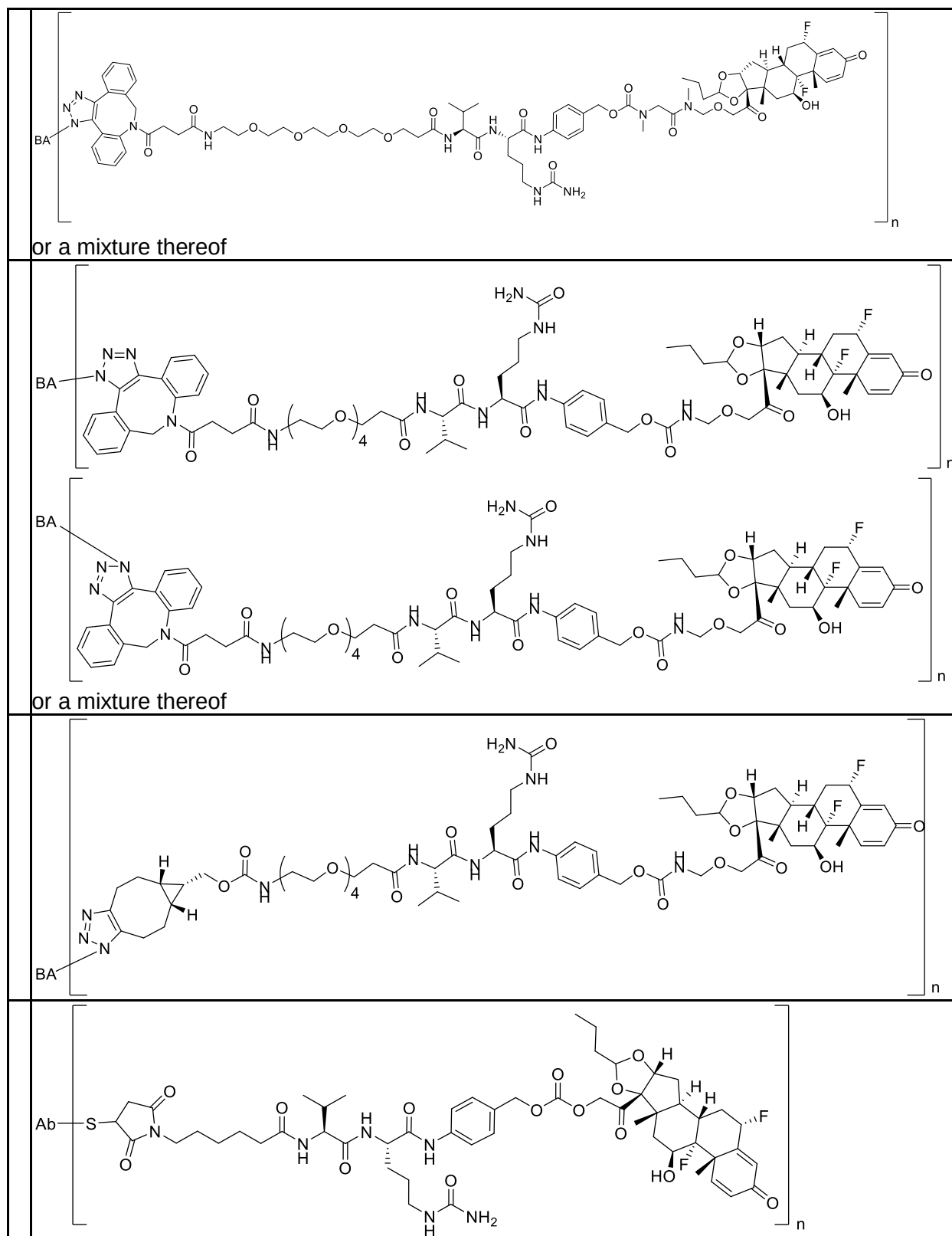
or a stereoisomer or mixture of stereoisomers thereof;

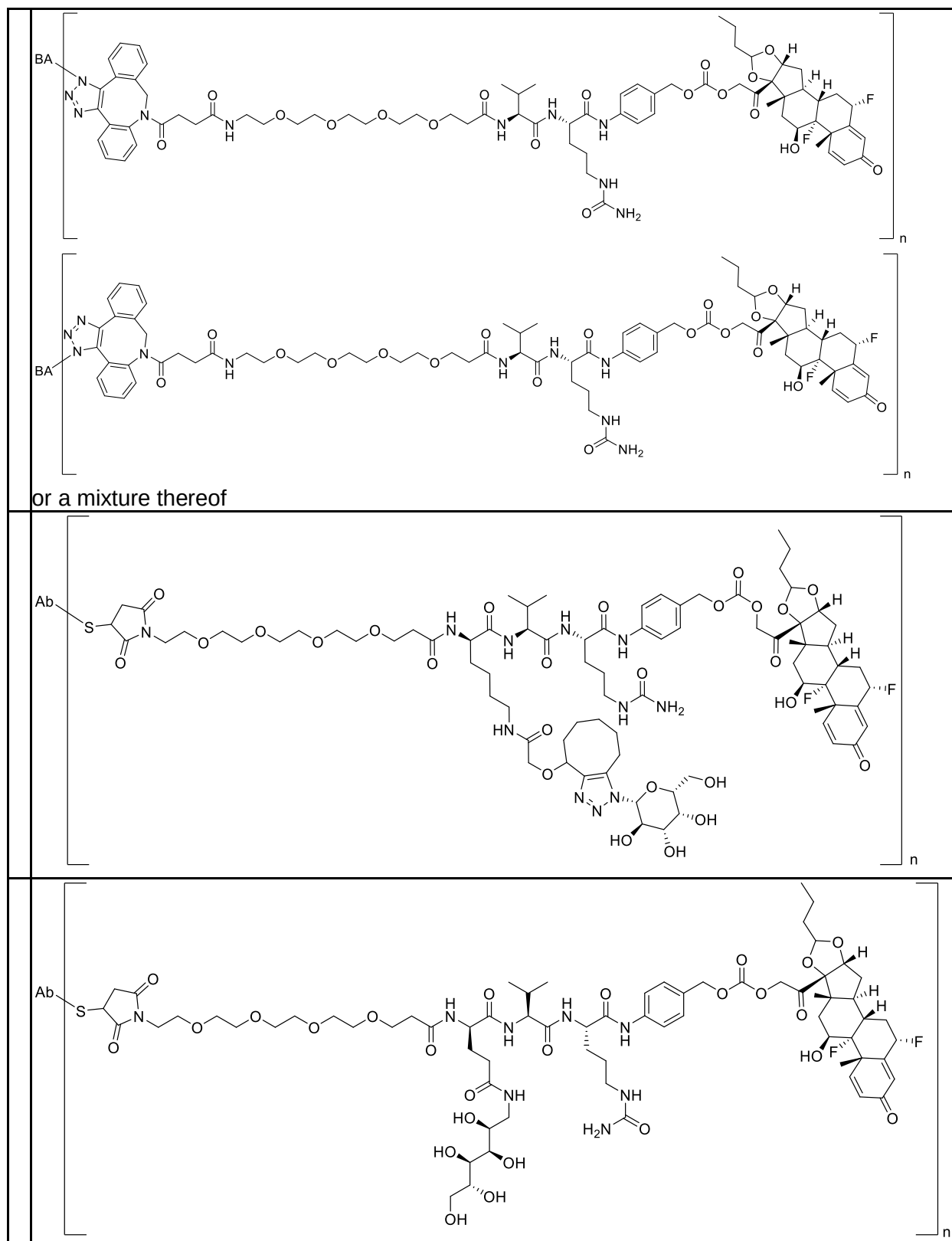


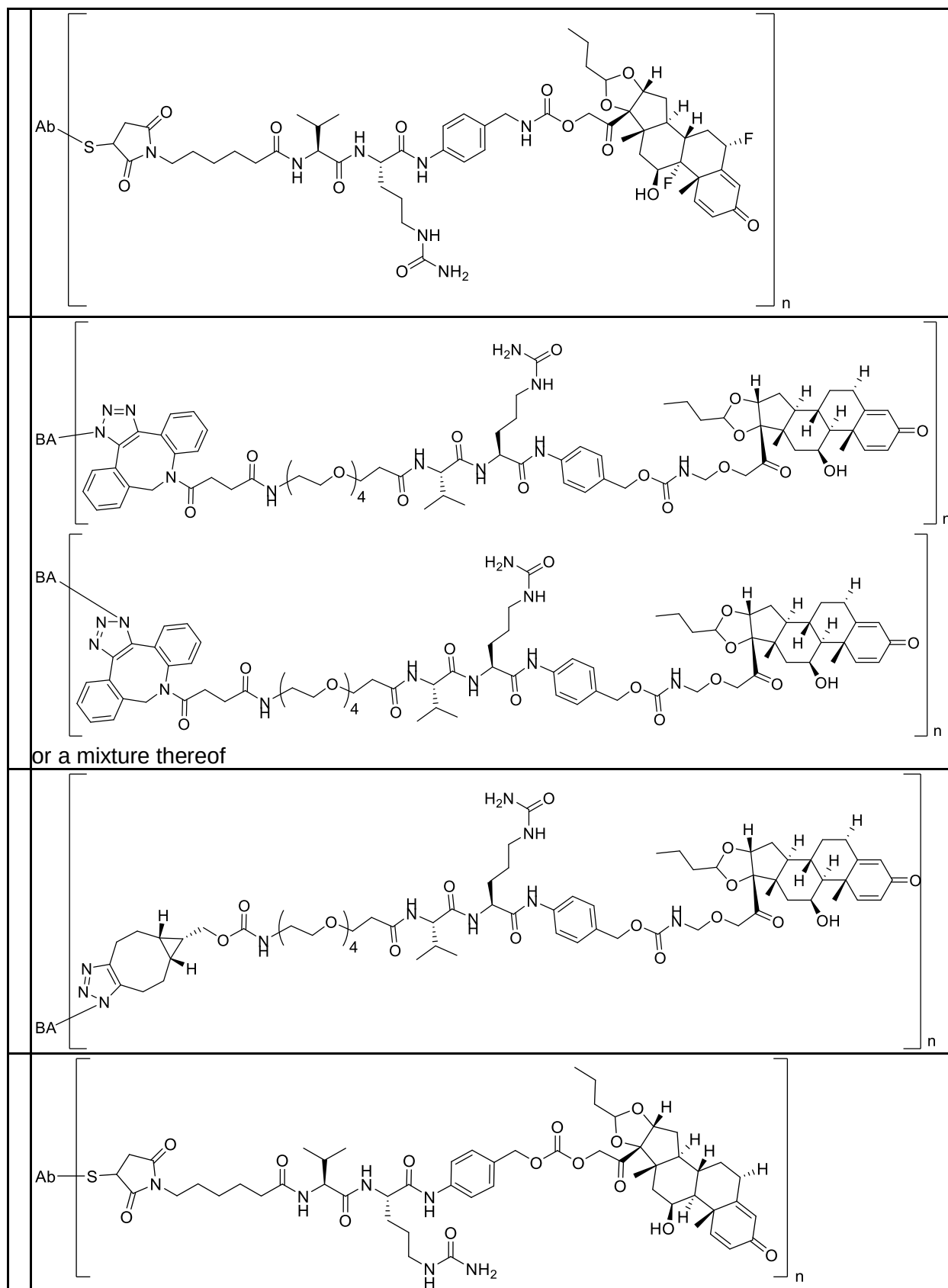
a mixture thereof;

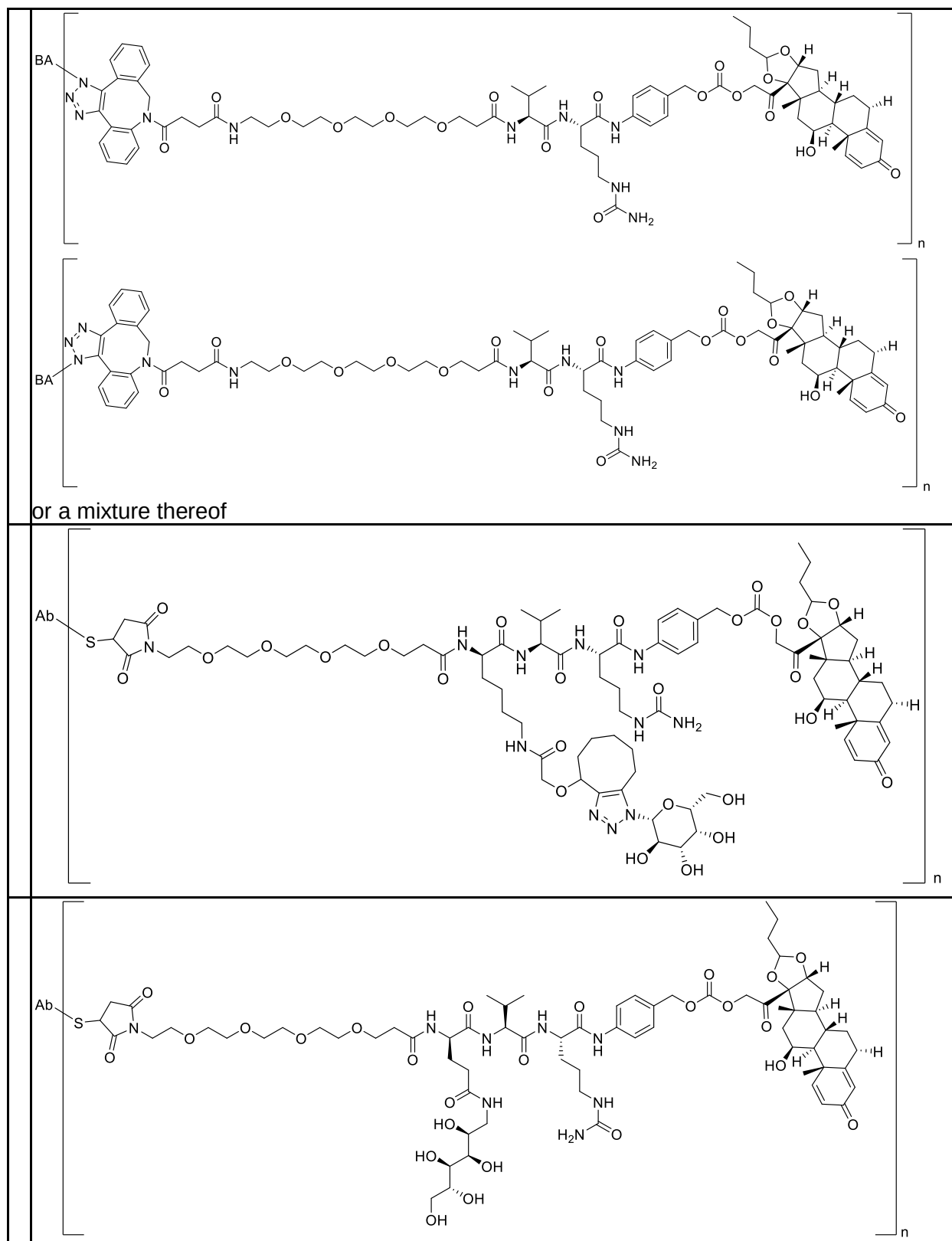


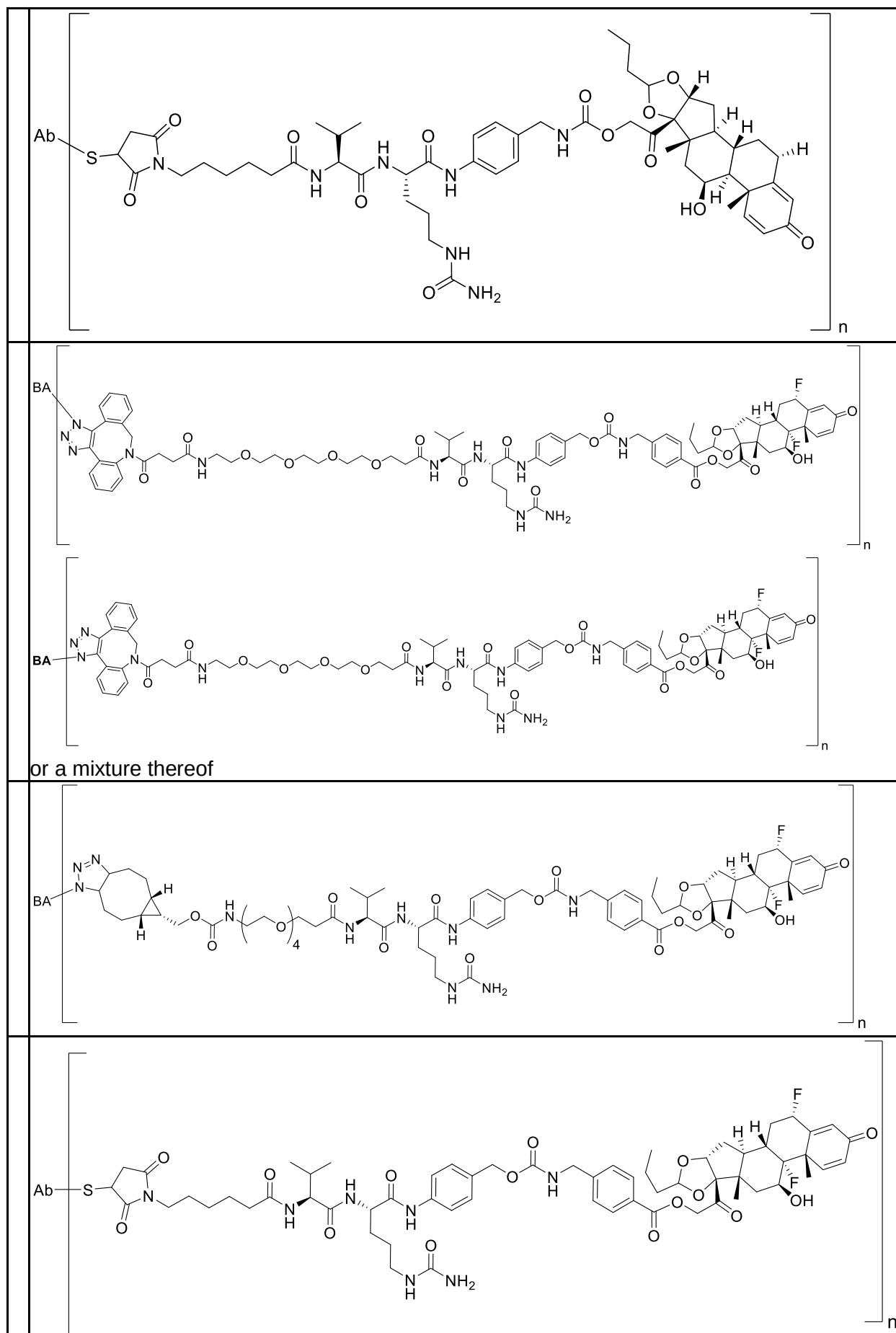




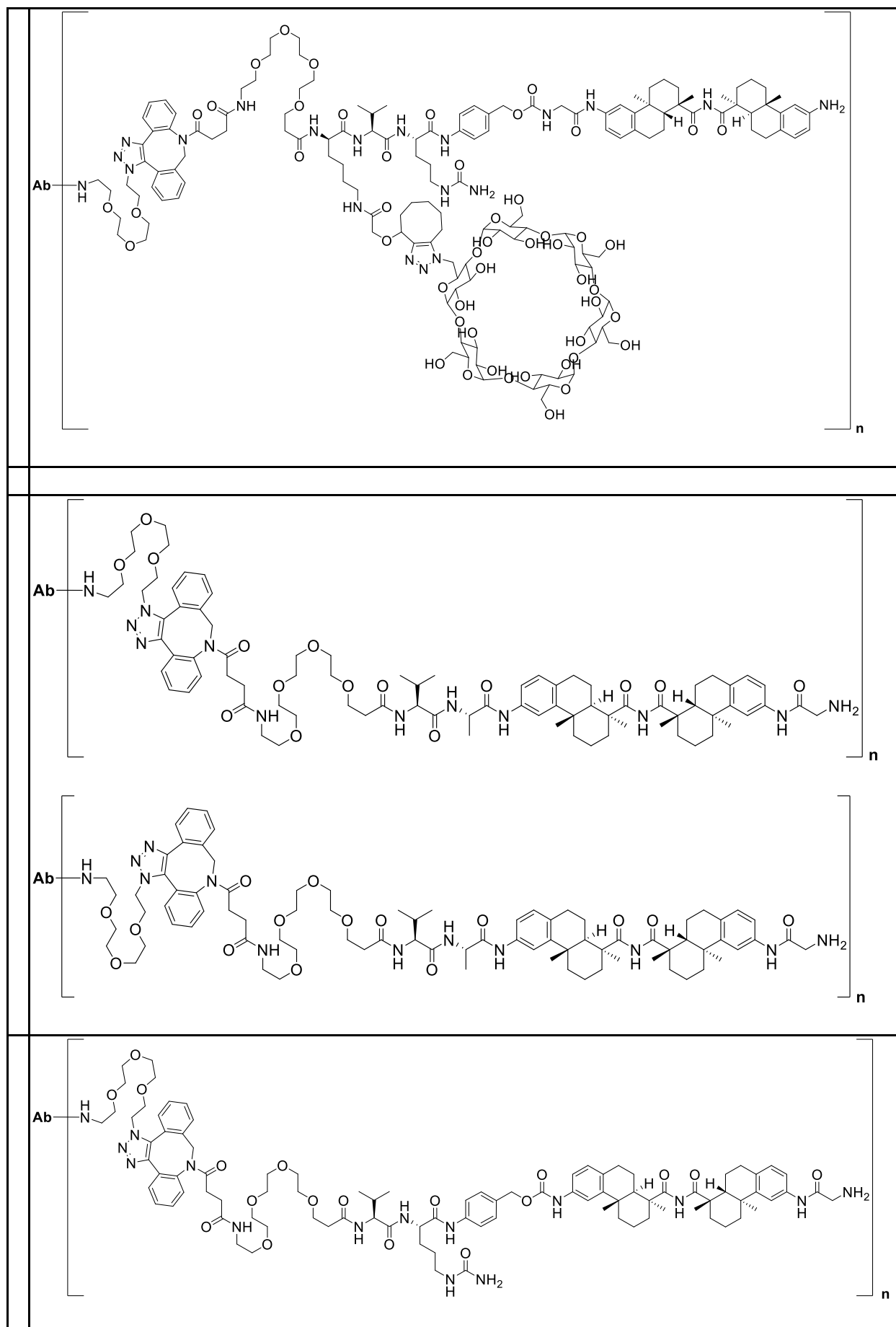


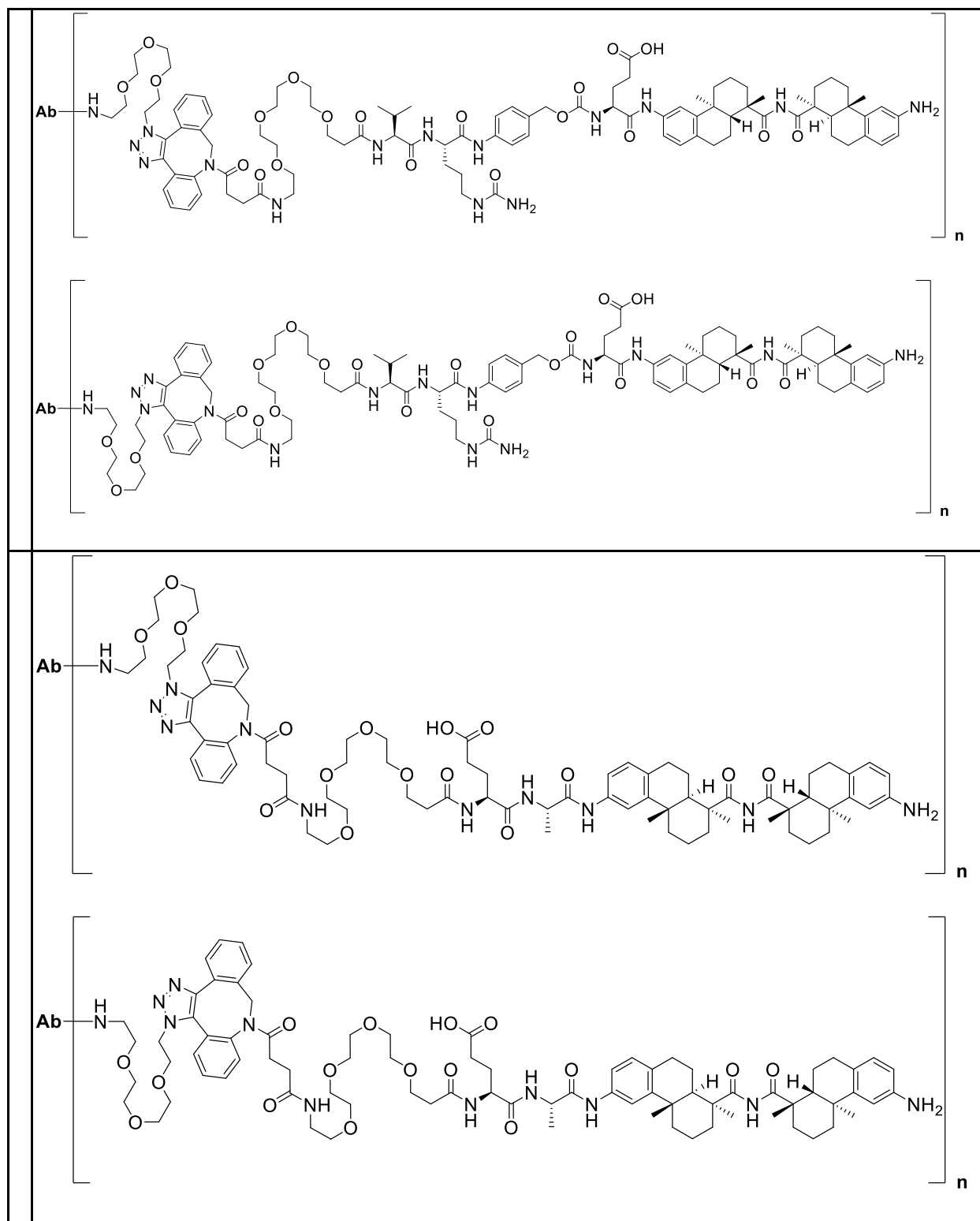


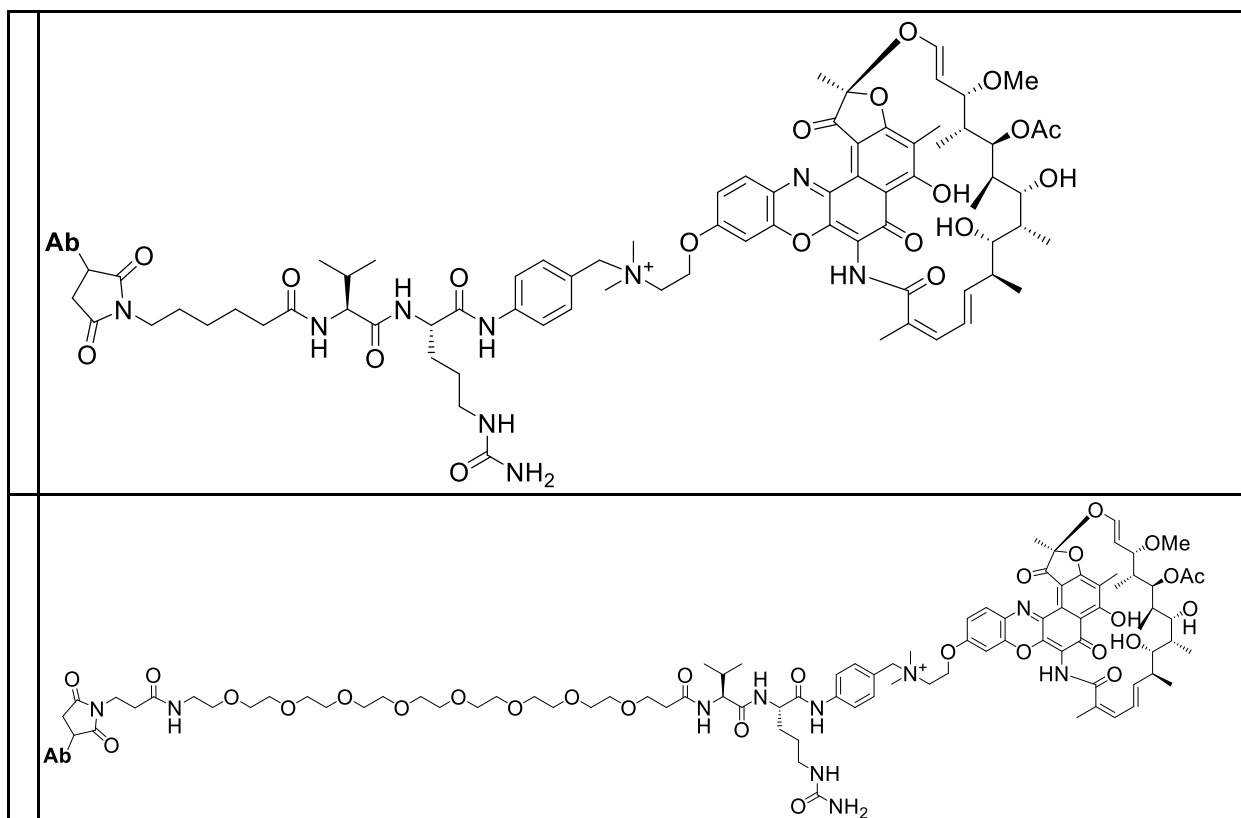






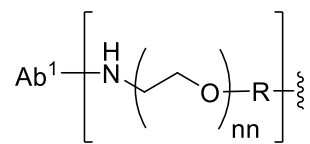






or a stereoisomeric form thereof, or a regioisomer thereof, or a mixture of regioisomers thereof, wherein

each **Ab** is an anti-MSR1 antibody, or an antigen binding fragment thereof;

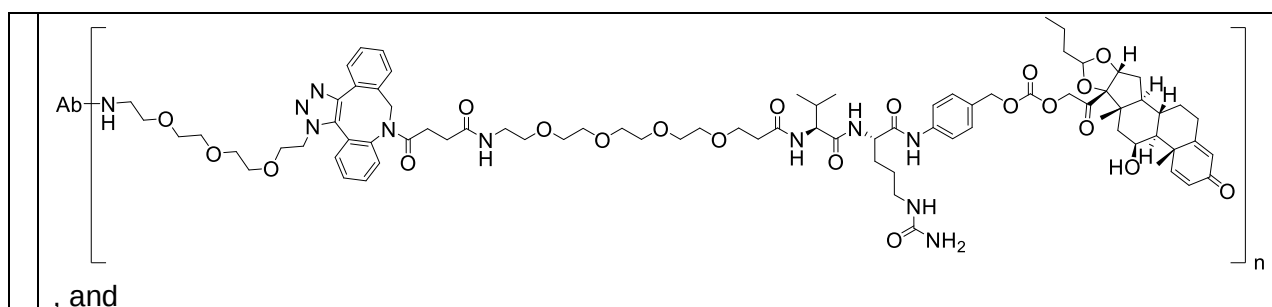


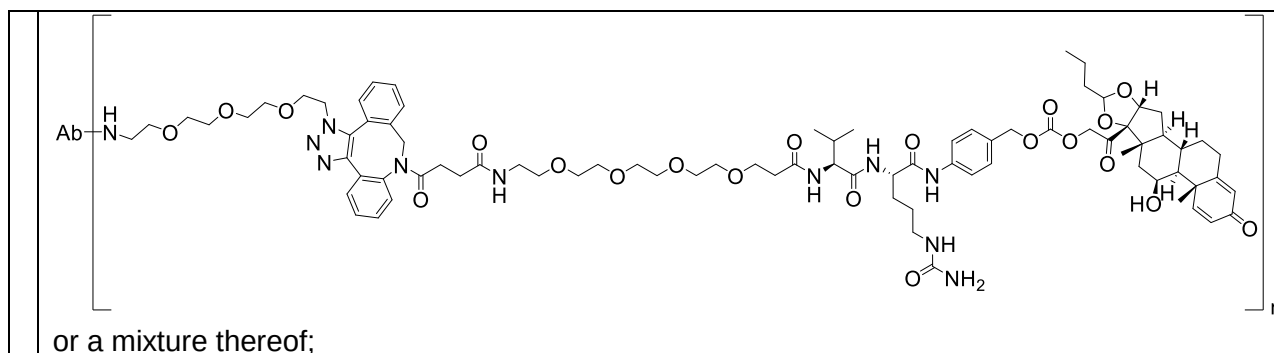
each **BA** is where **Ab¹** is an anti-MSR1 antibody, or an antigen-binding fragment thereof; **R** is C₂₋₄-alkylene; and **nn** is an integer selected from 2 to 4, inclusive.

and

each **n** is an integer from 1 to 4.

50. An antibody-drug conjugate selected from



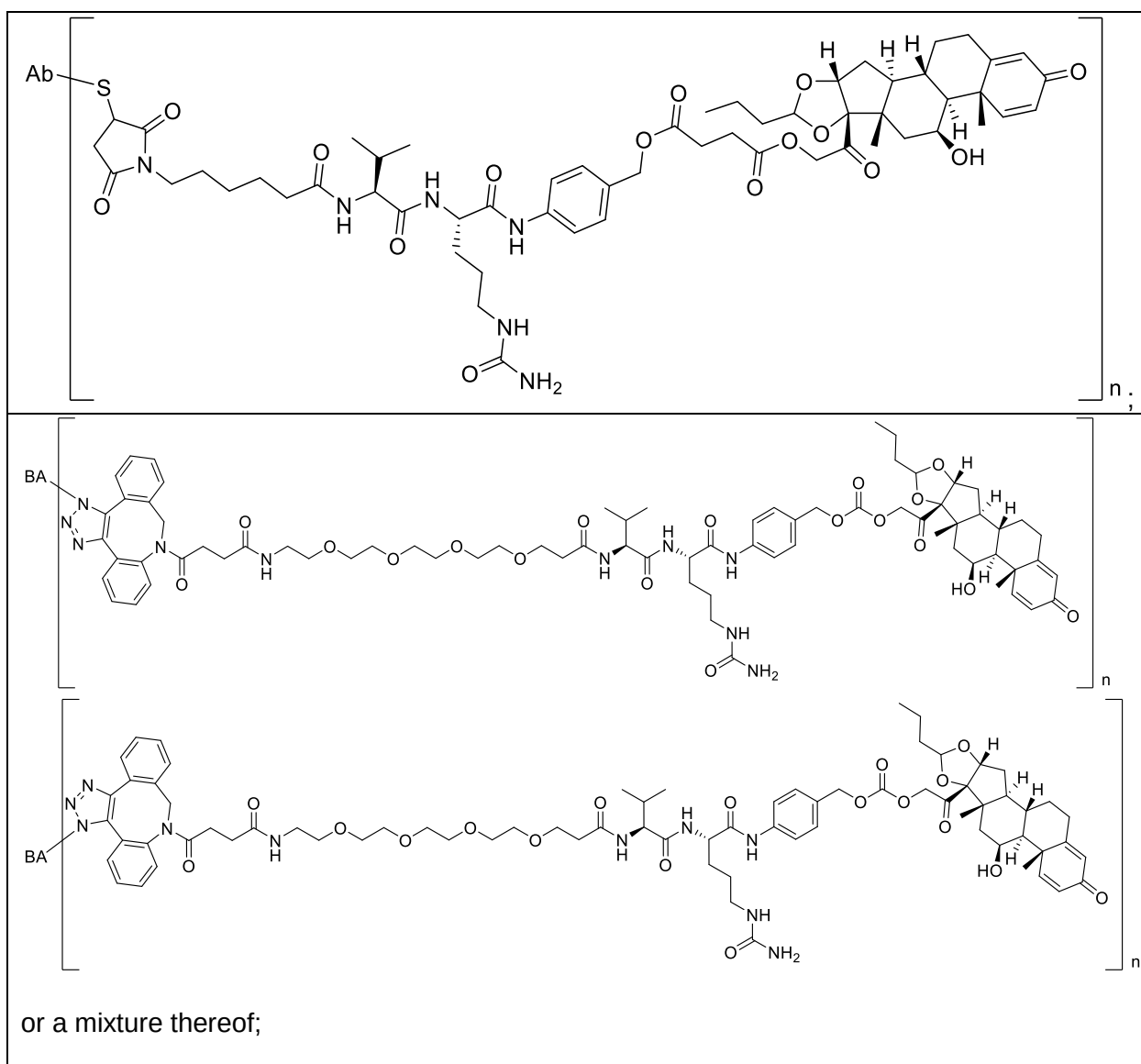


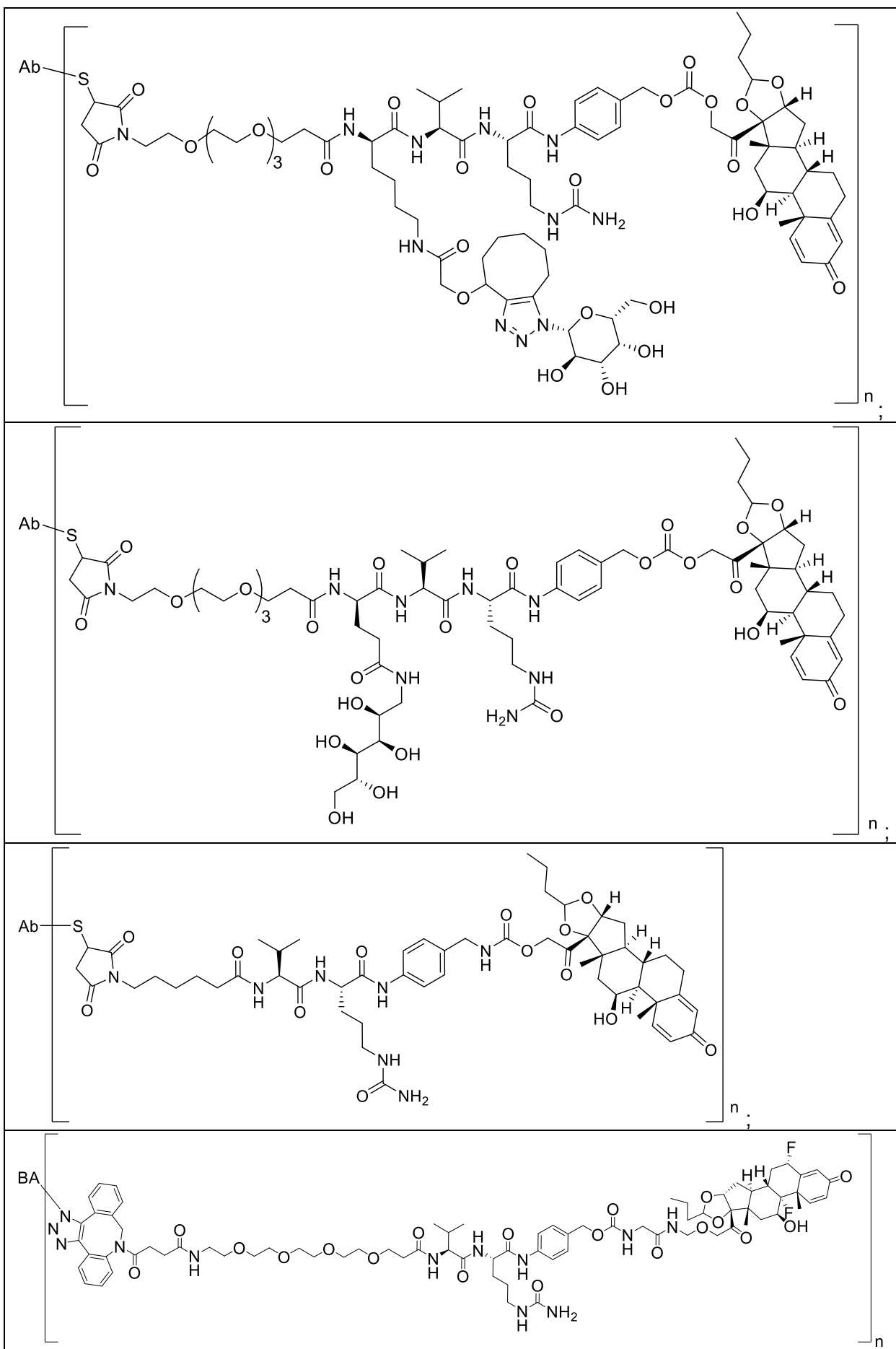
or a stereoisomeric form thereof, or a regioisomer thereof, or a mixture of regioisomers thereof, wherein

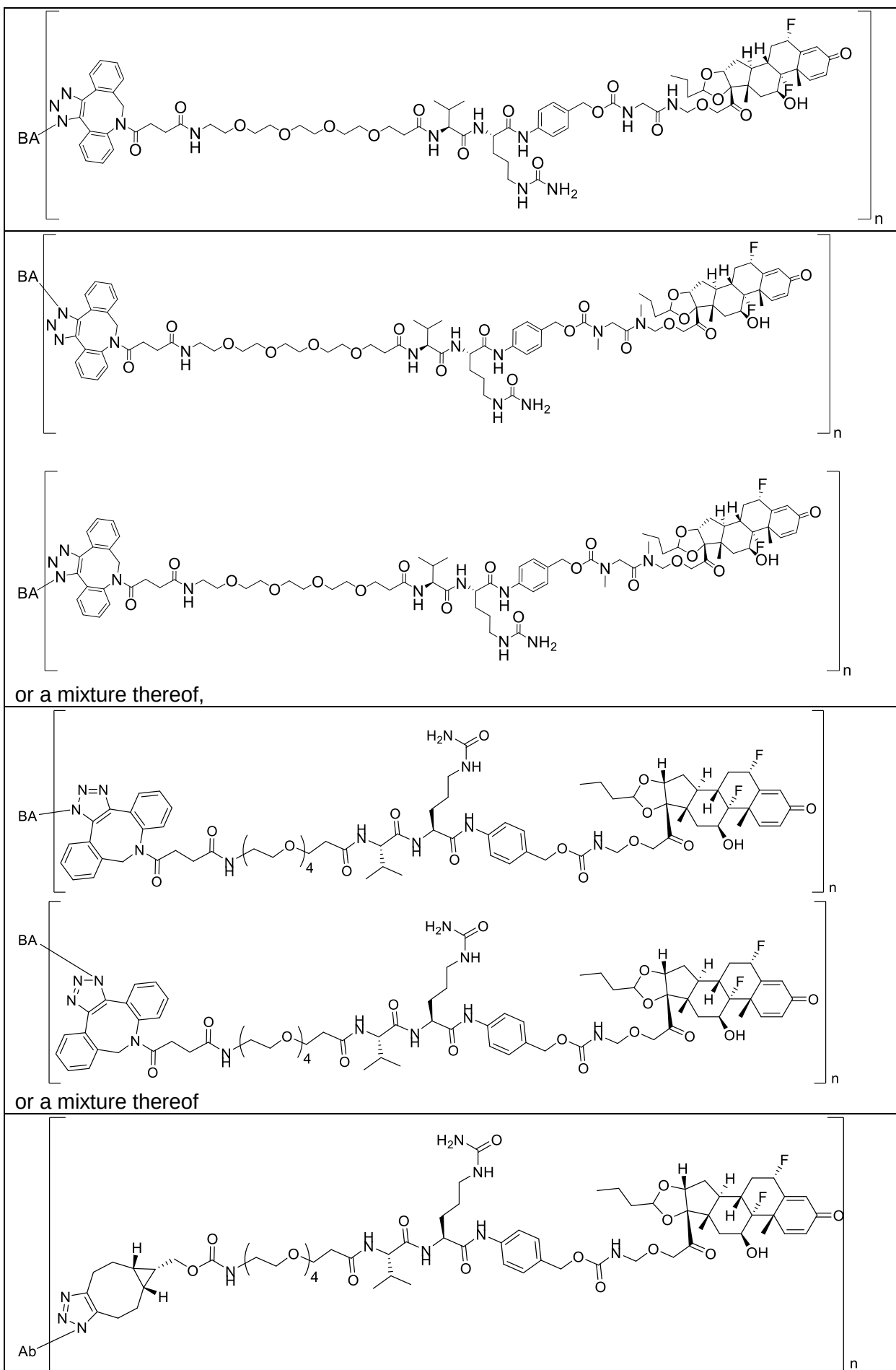
each Ab is an anti-MSR1 antibody, or an antigen binding fragment thereof; and

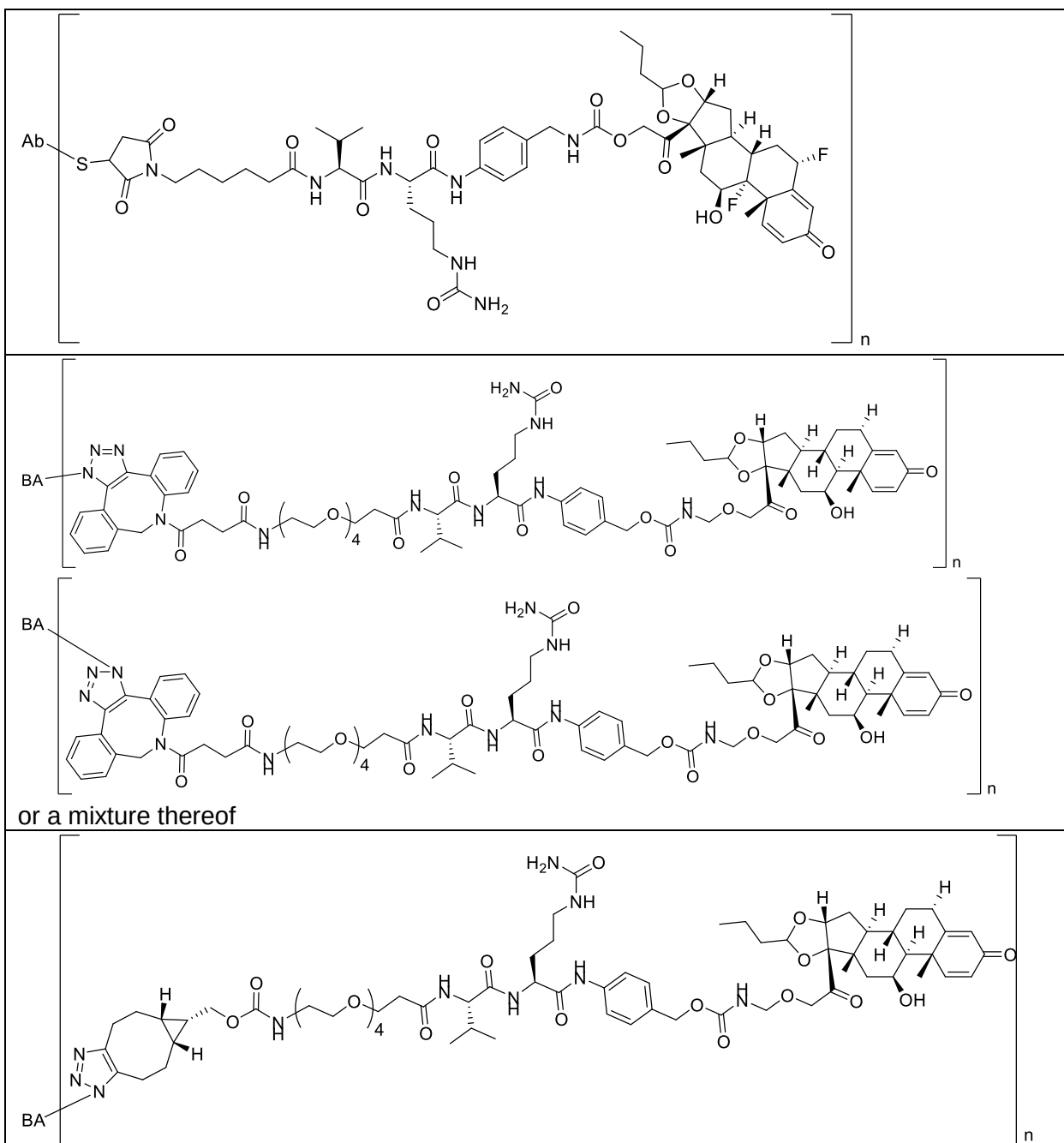
each n is an integer from 1 to 4.

51. An antibody-drug conjugate according to one of the following formulas:



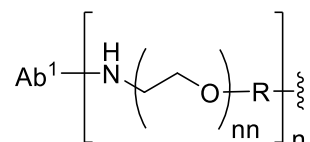






or a stereoisomeric form thereof, or a regioisomer thereof, or a mixture of regioisomers thereof, wherein

each **Ab** is an anti-MSR1 antibody, or an antigen binding fragment thereof;

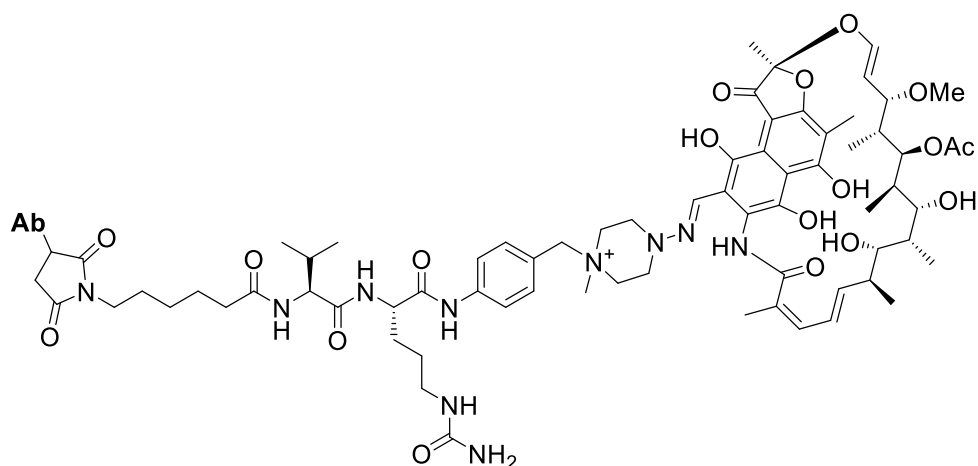


each **BA** is where **Ab**¹ is an anti-MSR1 antibody, or an antigen-binding fragment thereof; **R** is C₂₋₄-alkylene; and **nn** is an integer selected from 2 to 4, inclusive.

and

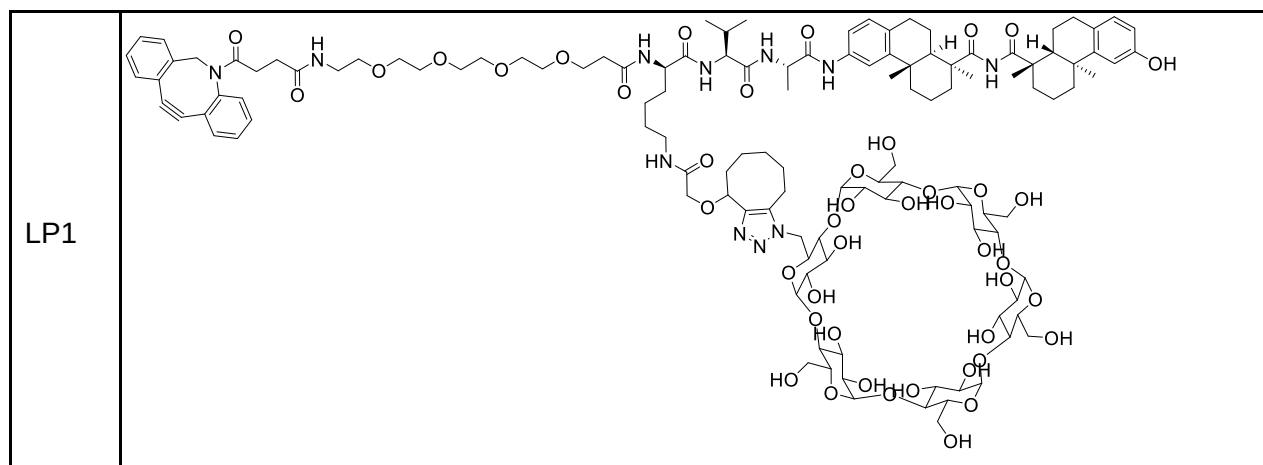
each **n** is an integer from 1 to 4.

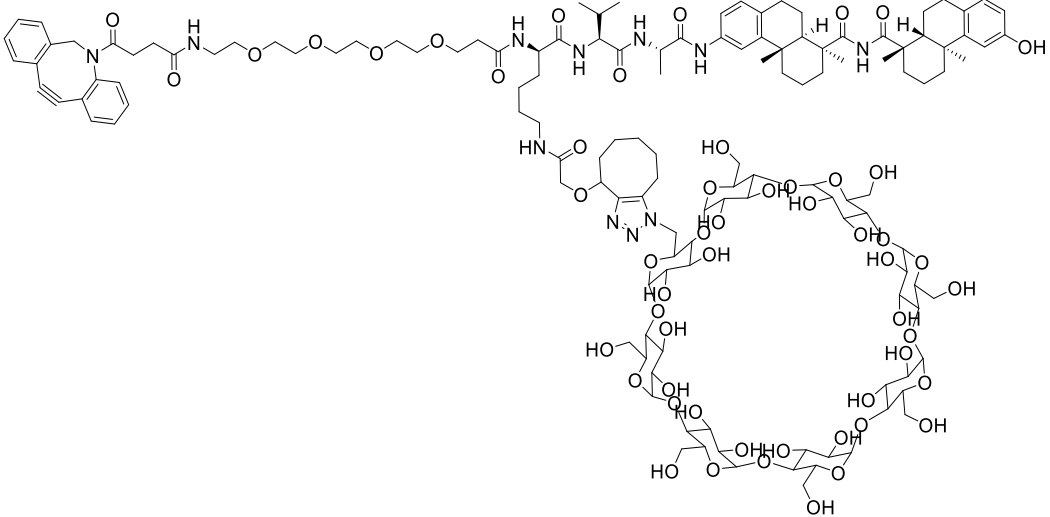
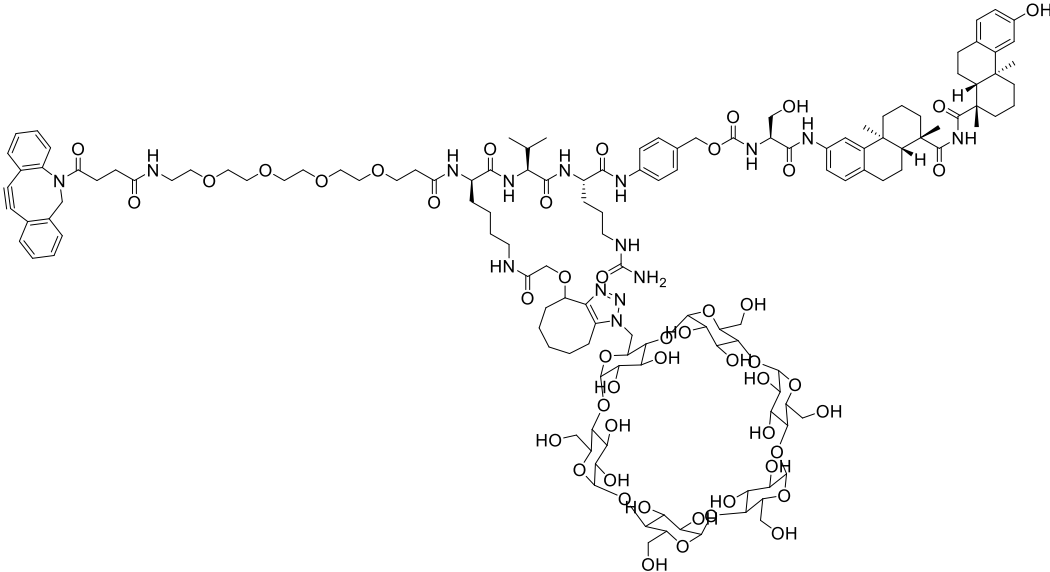
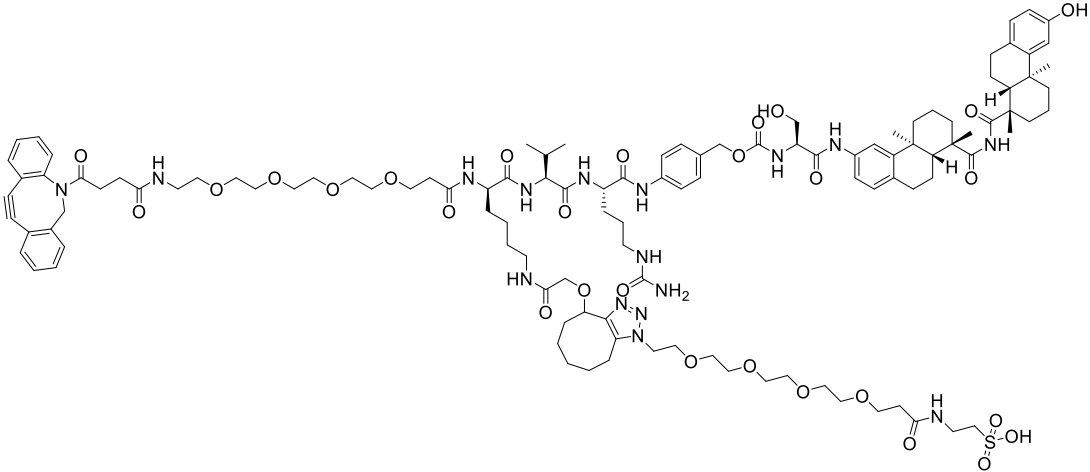
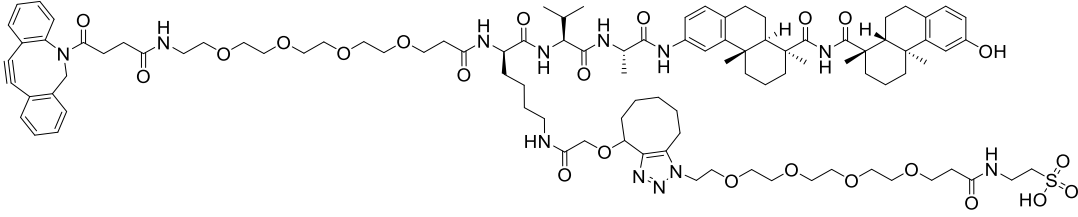
52. An antibody-drug conjugate of any one of claims 7-8 and 22, according to Formula (7004):



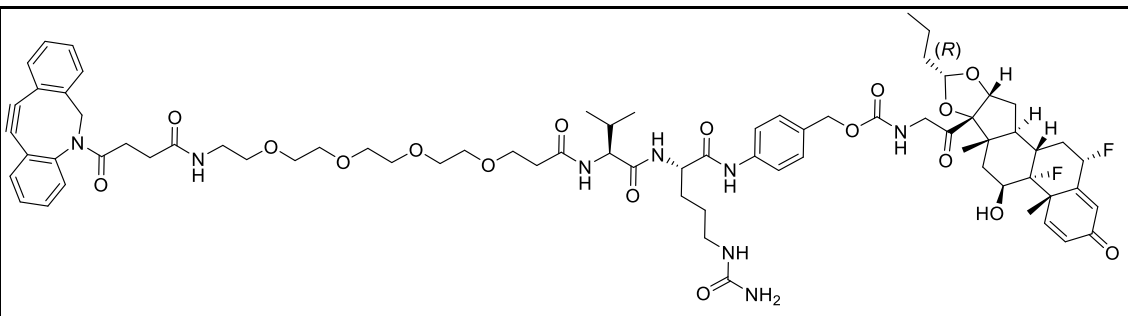
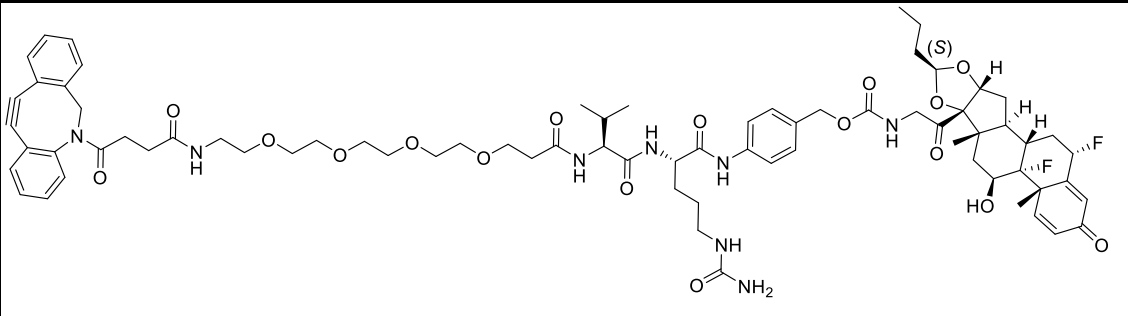
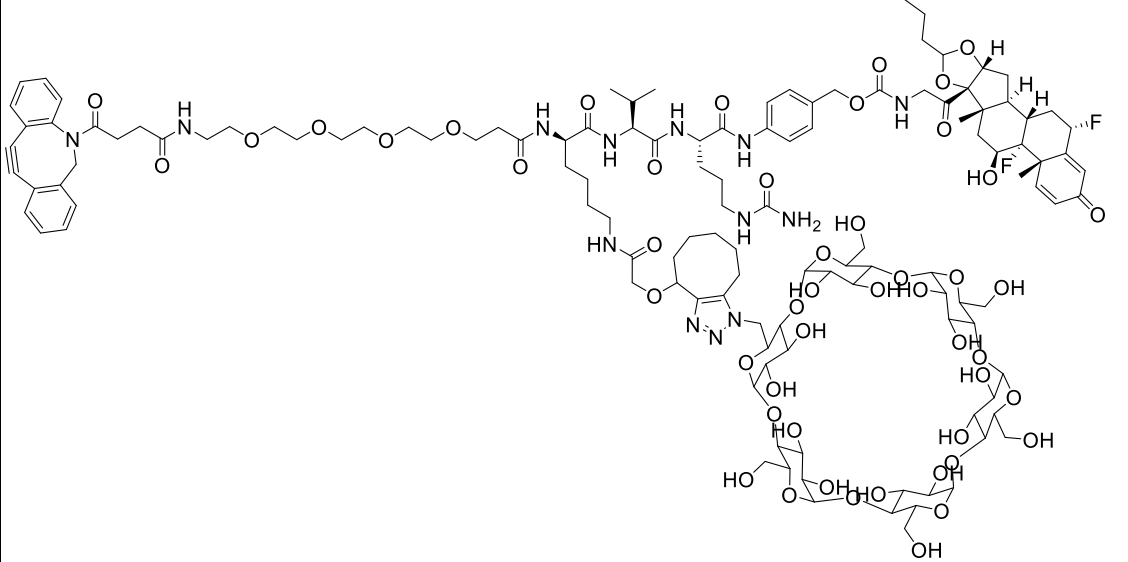
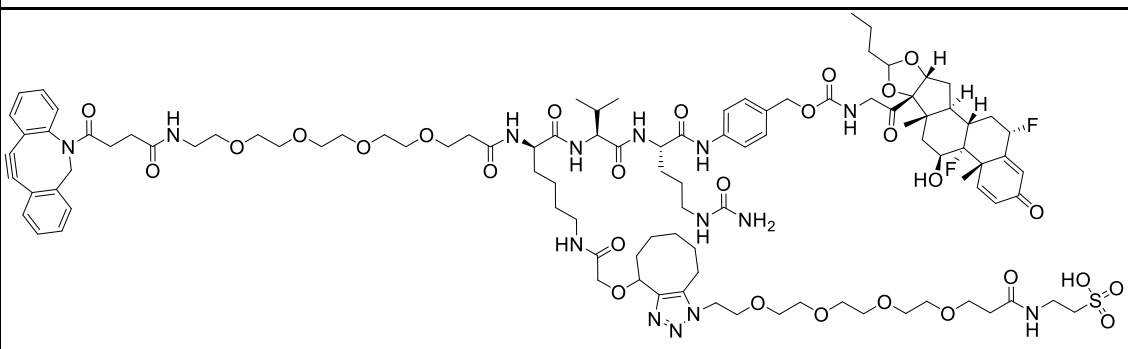
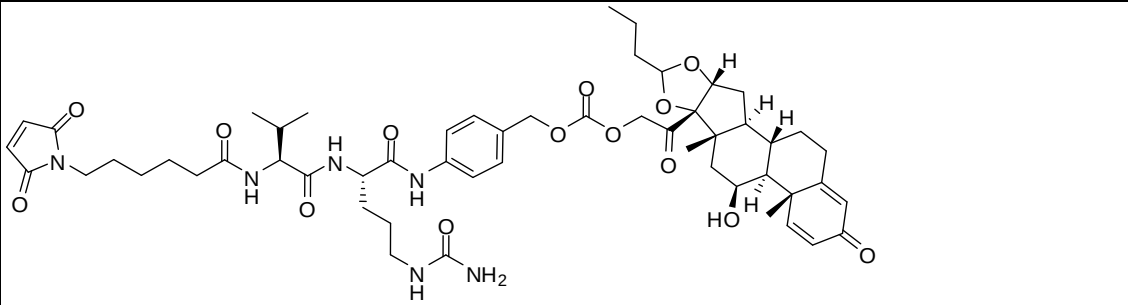
Formula (7004).

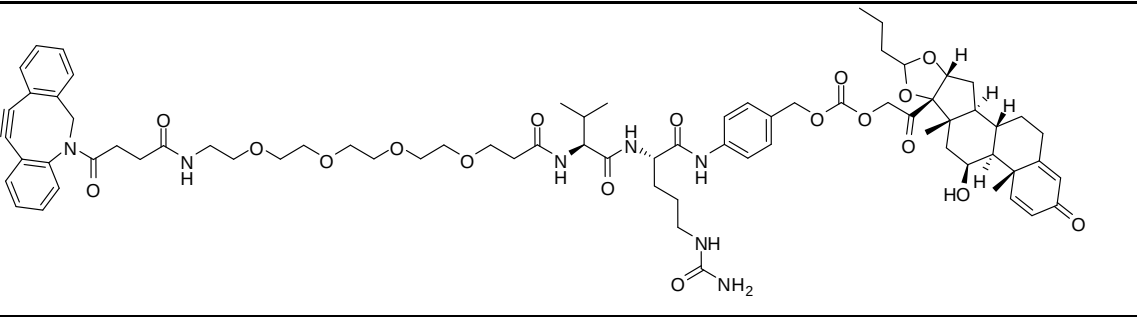
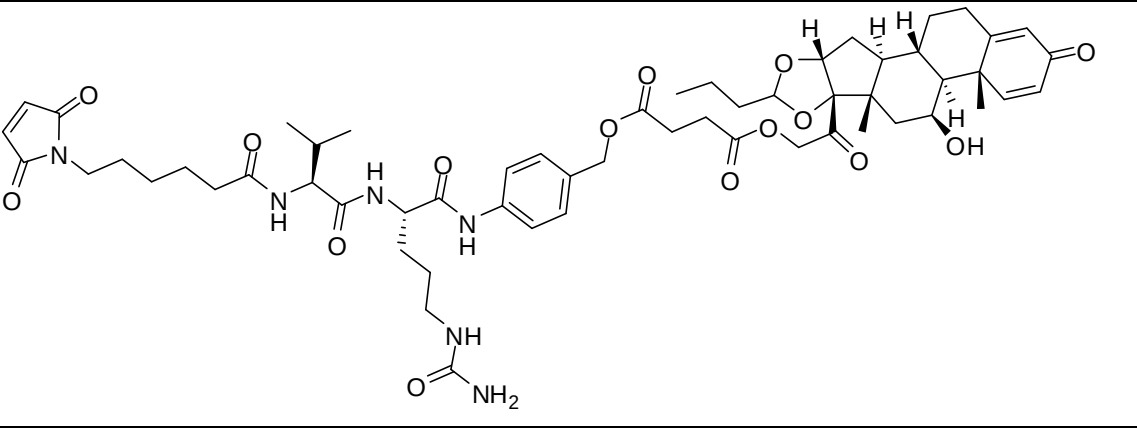
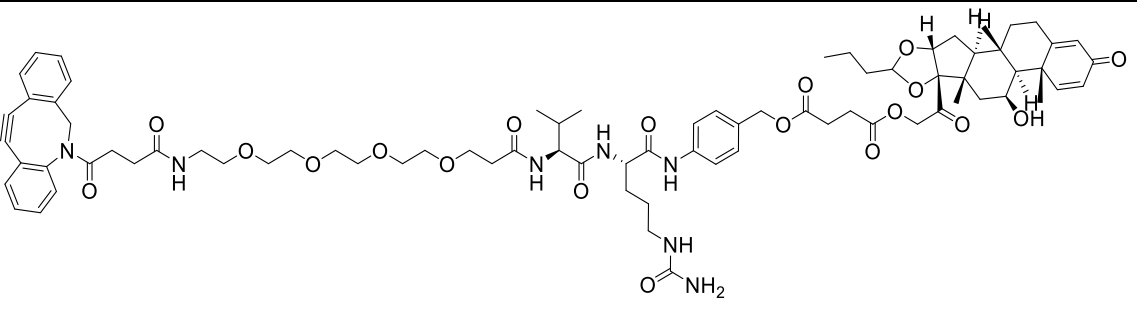
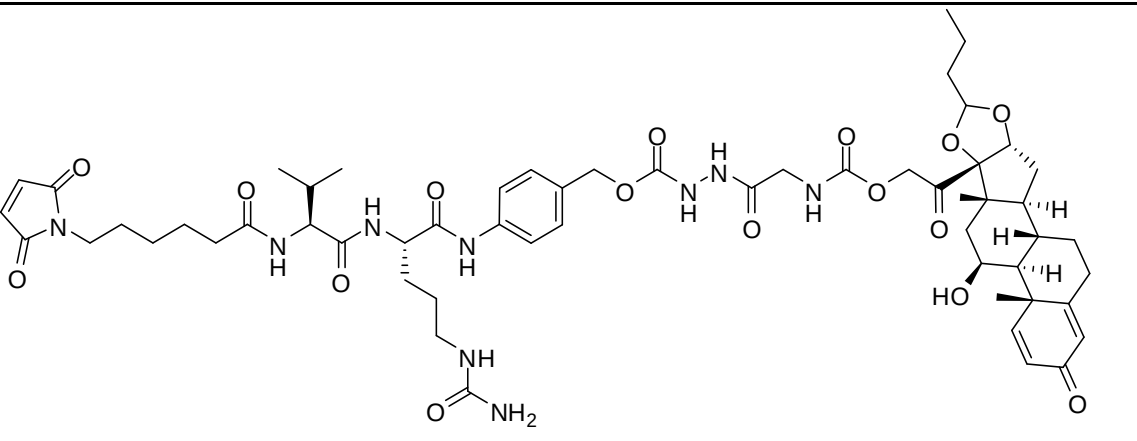
53. An antibody drug conjugate prepared by conjugating an anti-MSR1 antibody or a PEG-modified anti-MSR1 antibody, or an antigen binding fragment thereof, with a linker payload, or a stereoisomeric form thereof, or a regioisomer thereof, or a mixture of regioisomers thereof, selected from the group consisting of:

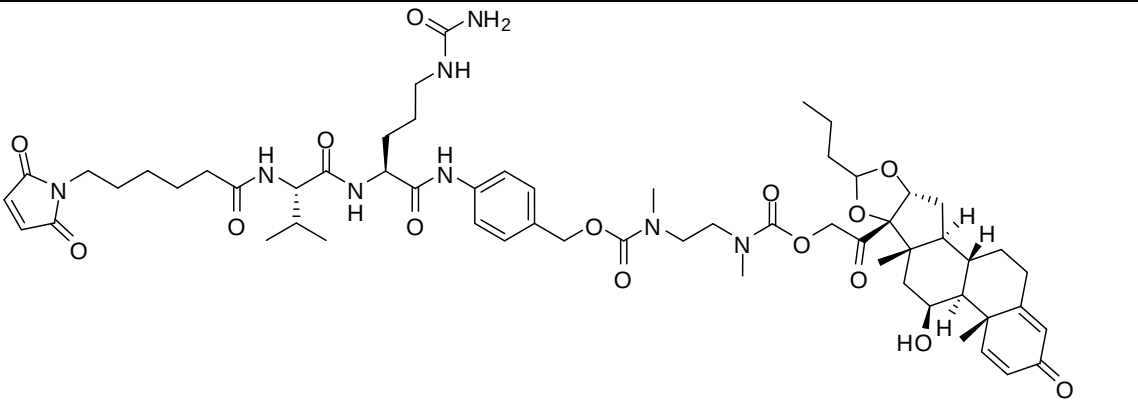
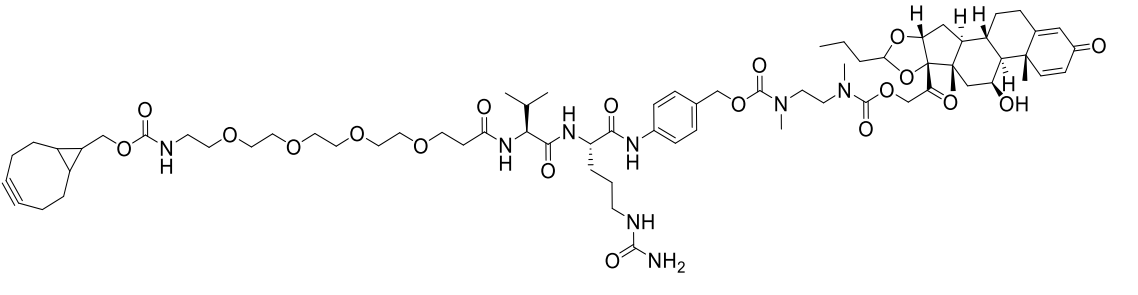
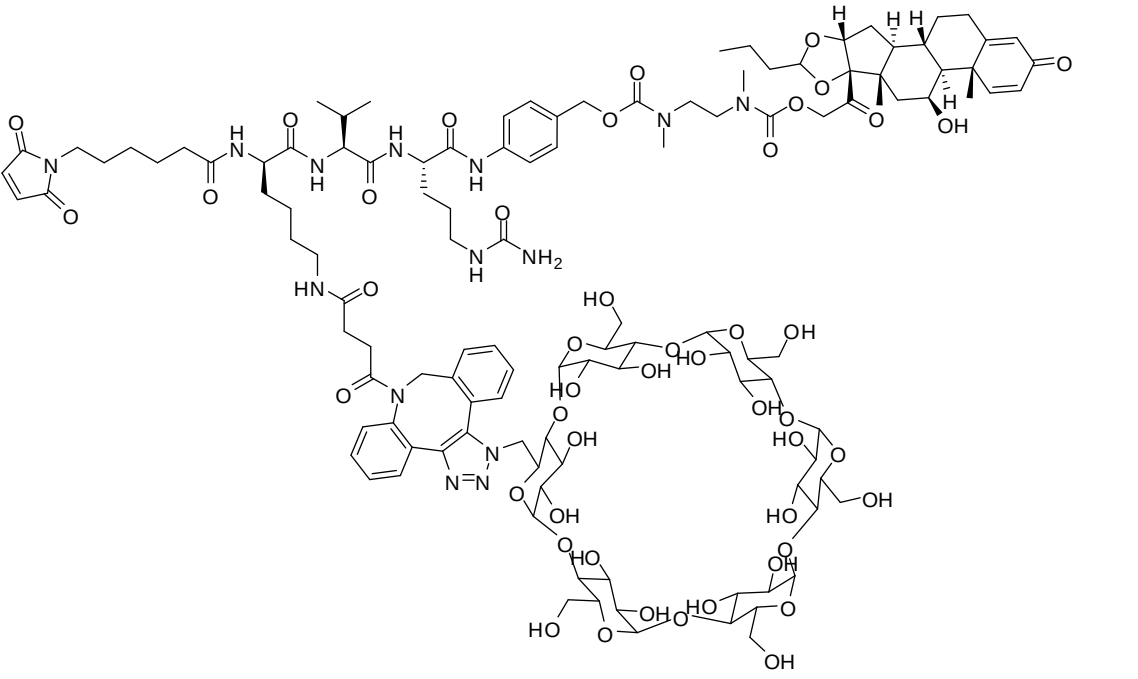
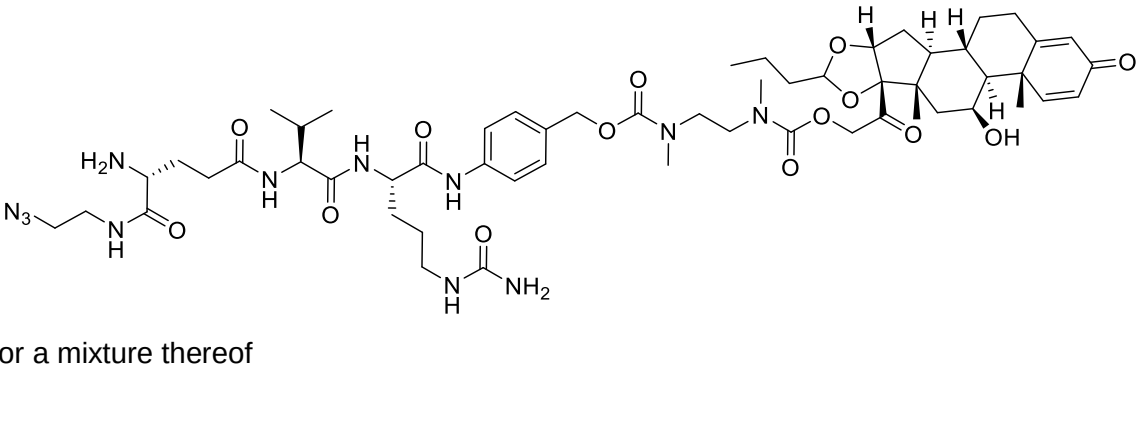


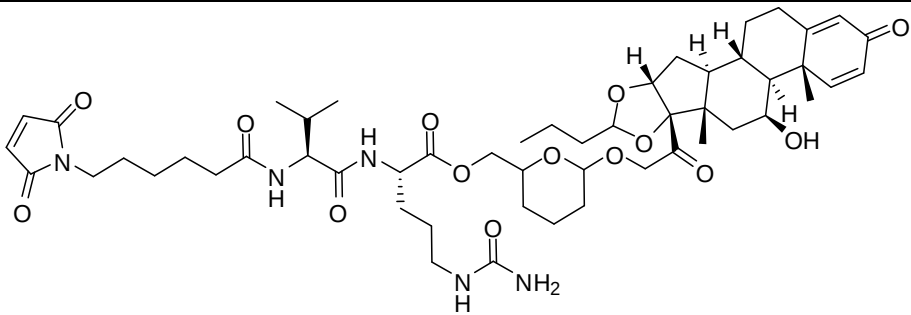
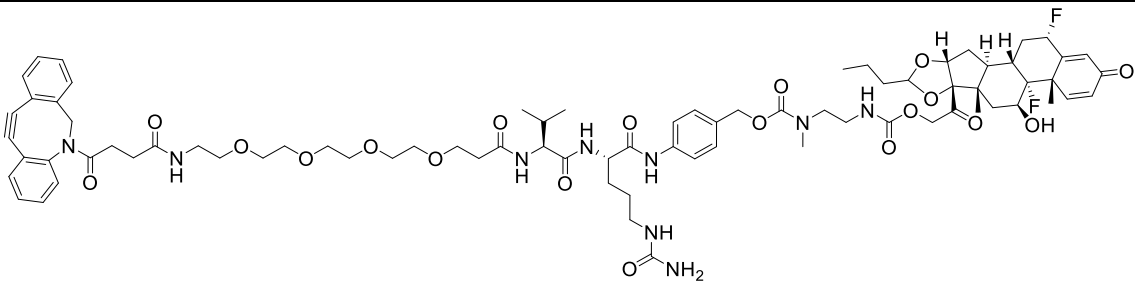
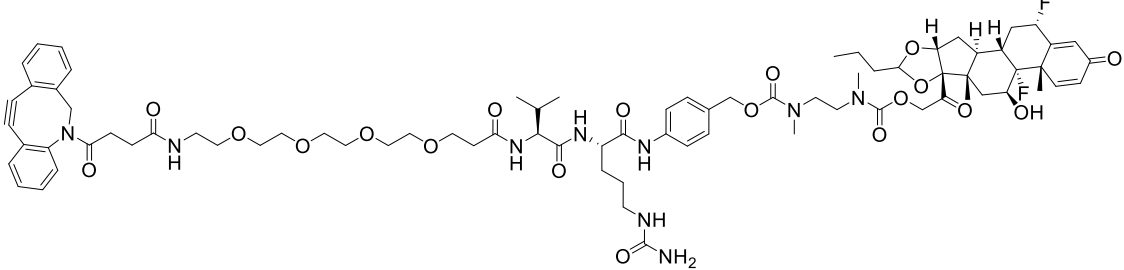
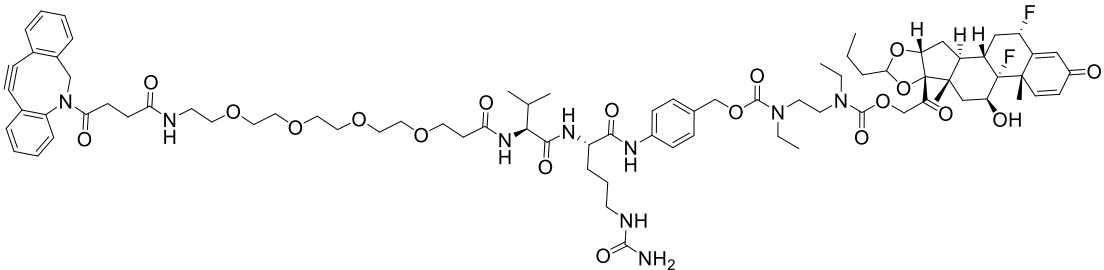
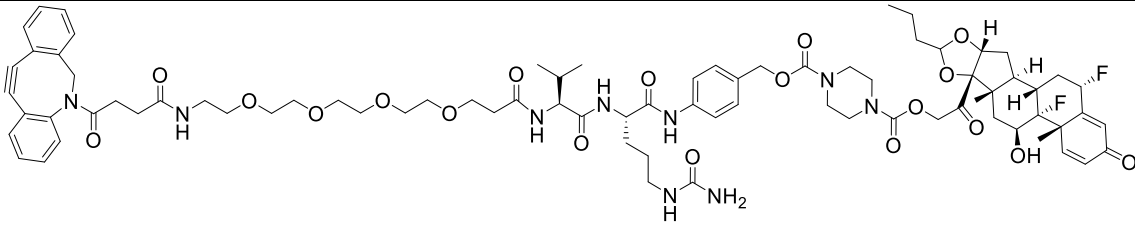
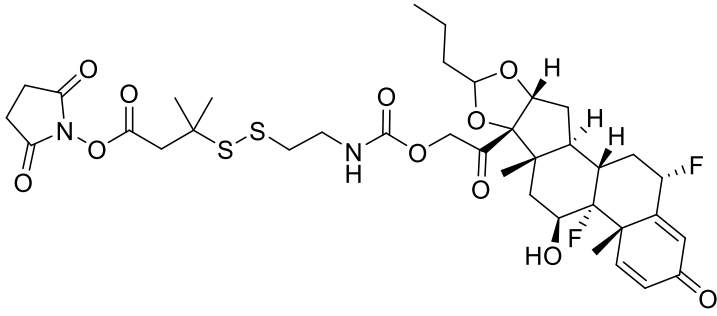
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LP5	
LP6	
LP18	

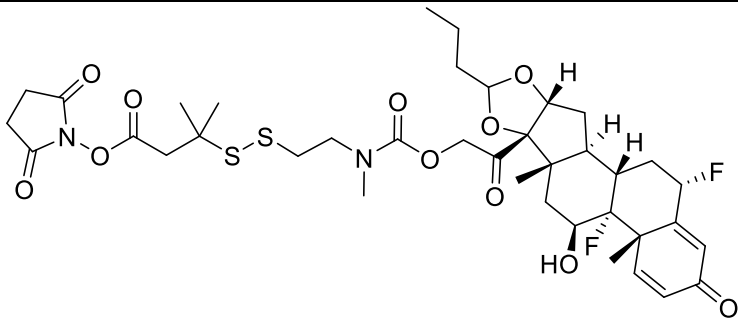
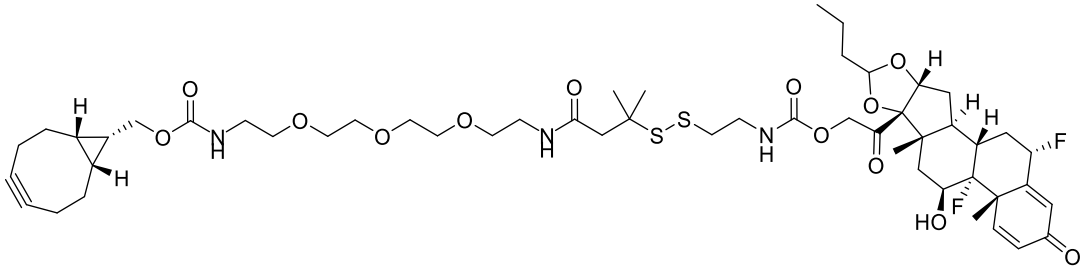
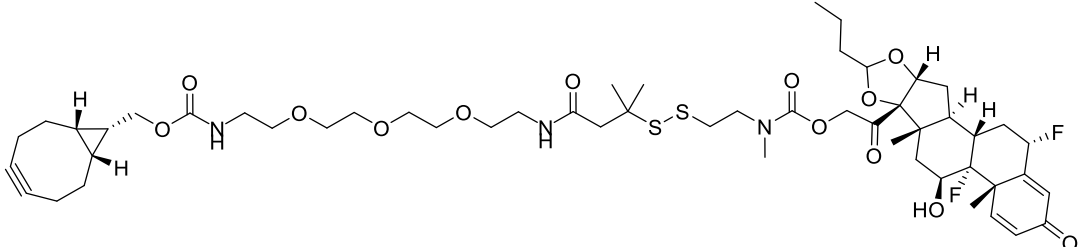
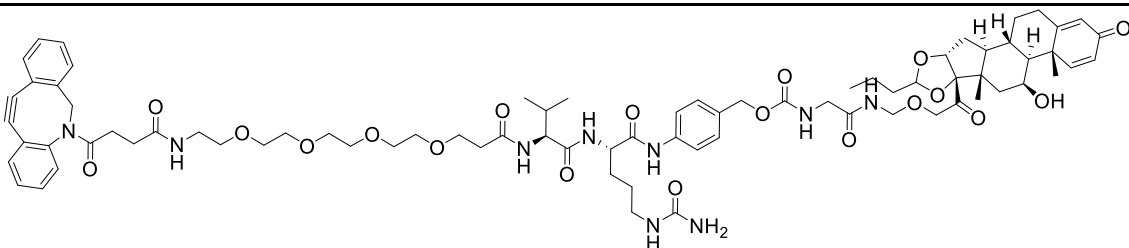
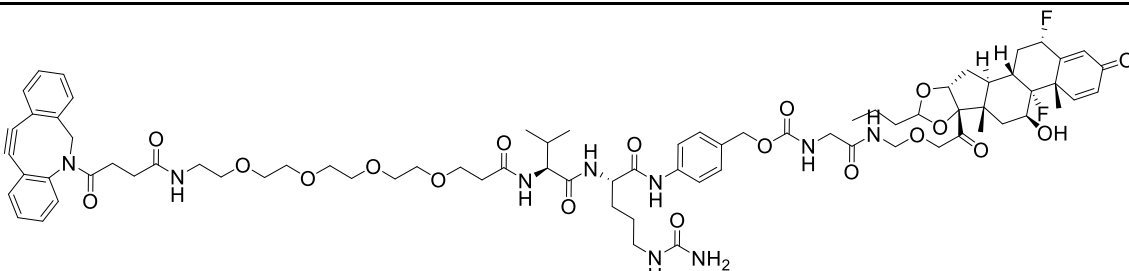
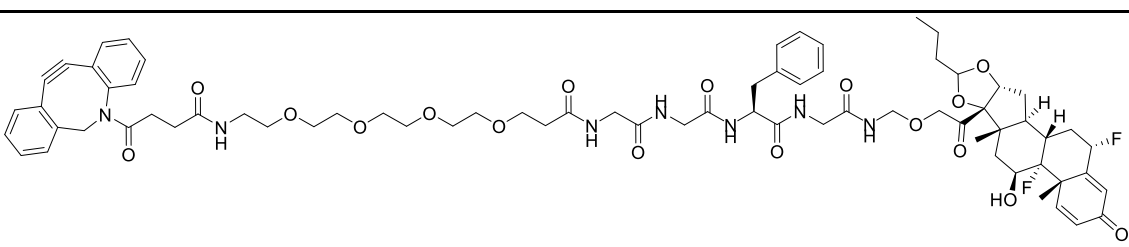
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LP13	

	
	
LP14	
LP15	
2a	

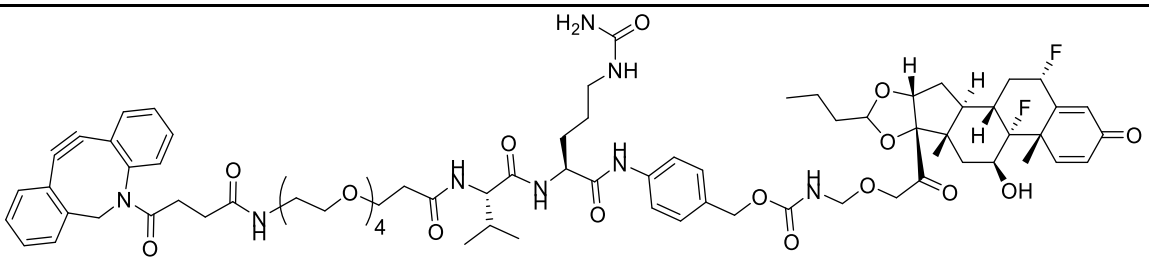
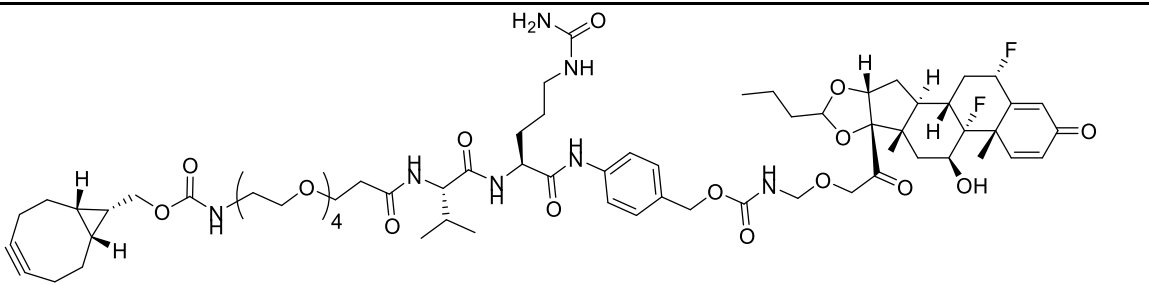
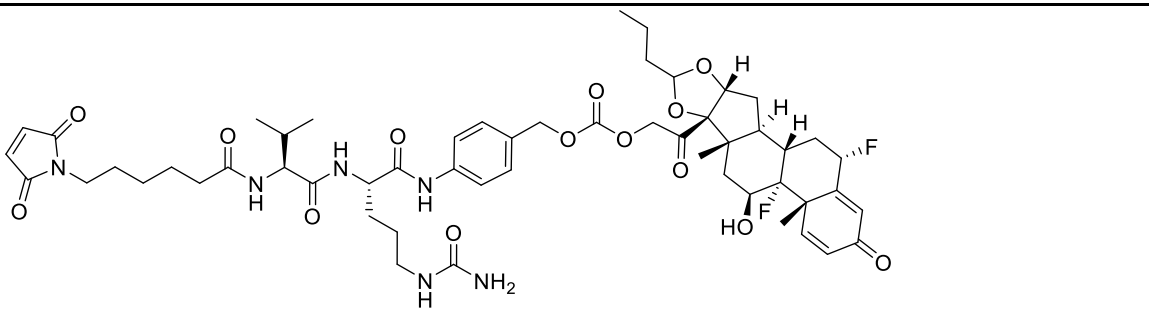
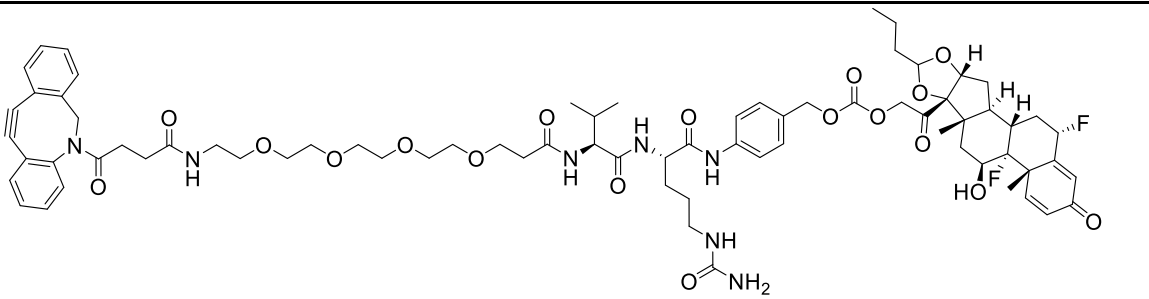
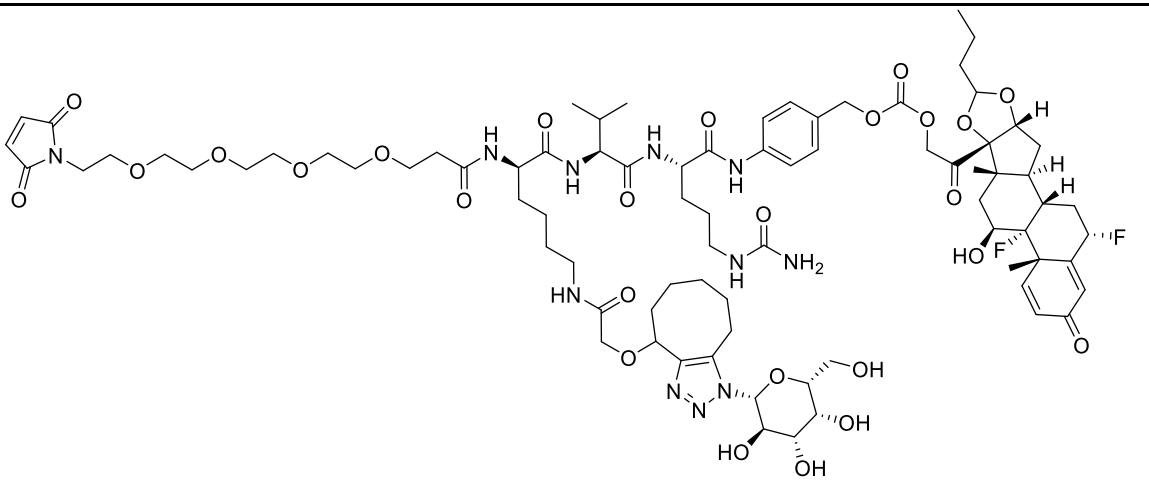
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2f	
2g	
2j	

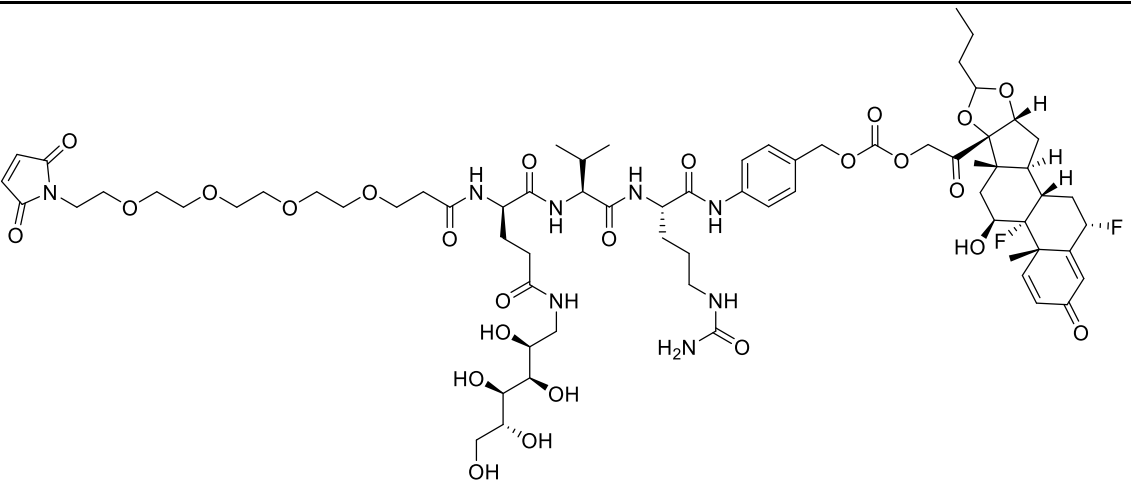
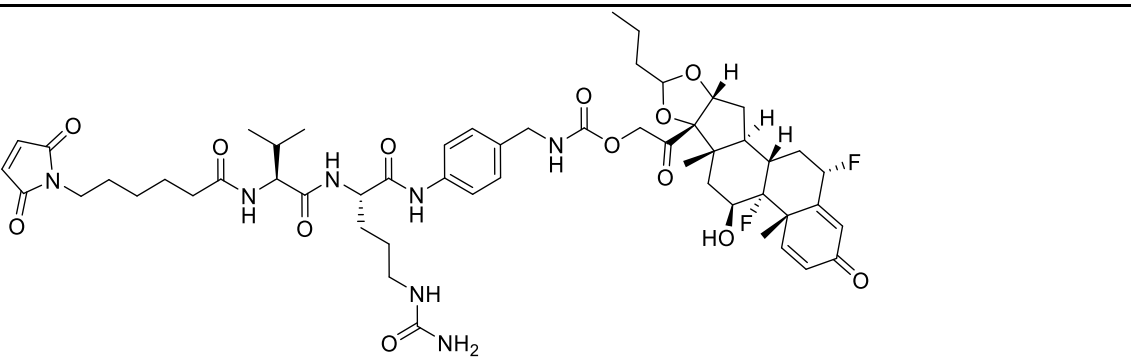
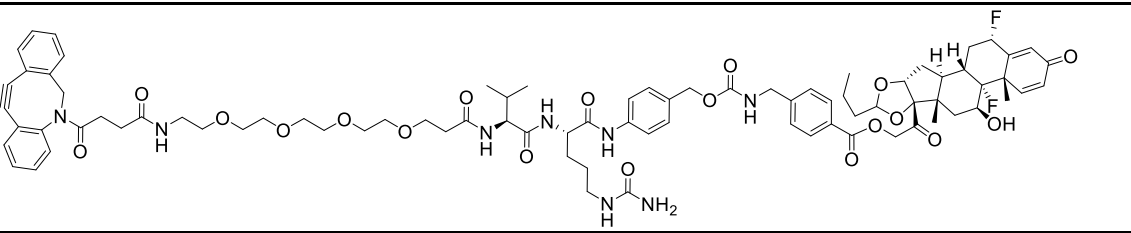
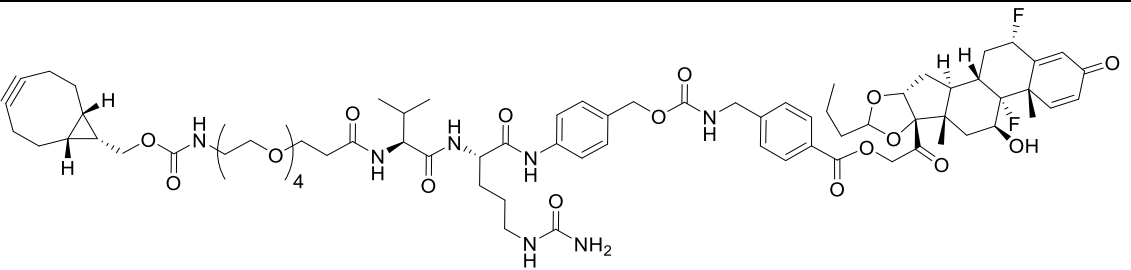
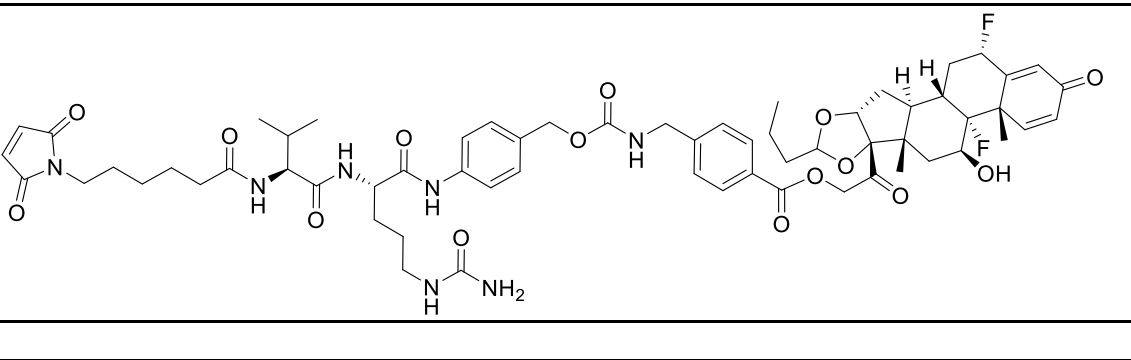
2k	
2l	
2m	
2n	 or a mixture thereof

2q	
LP1A	
LP2A	
LP3A	
LP4A	
LP5A	

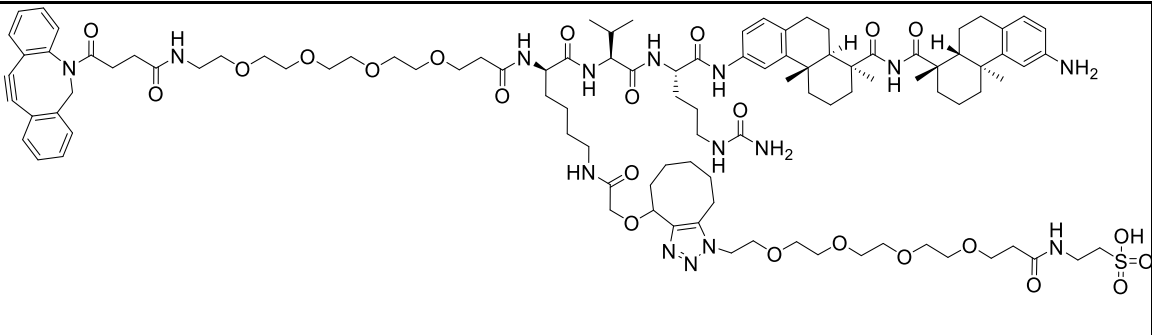
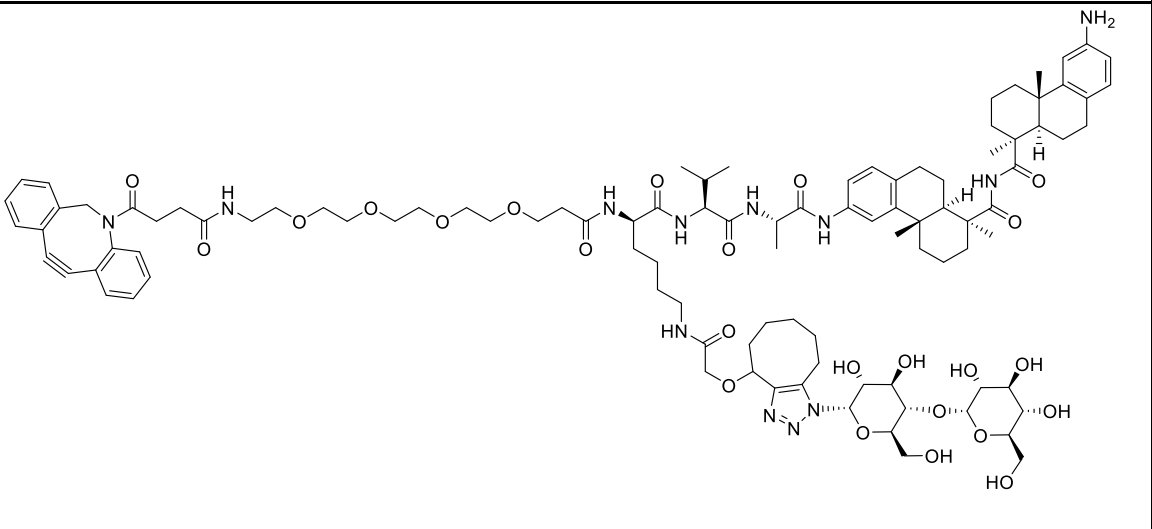
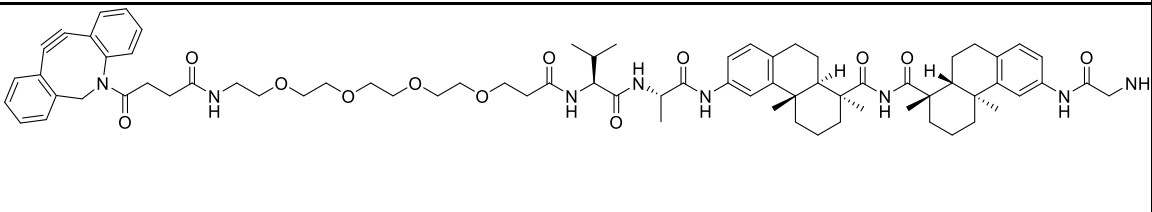
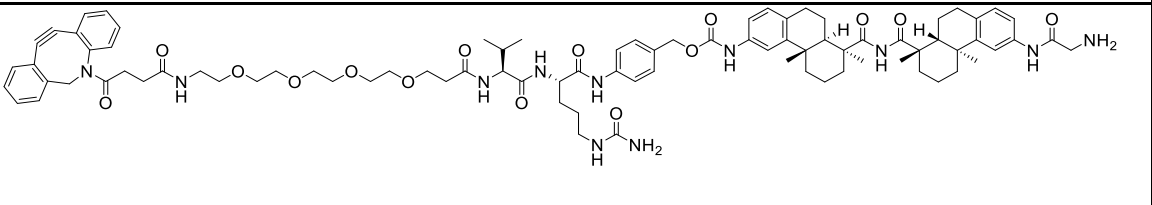
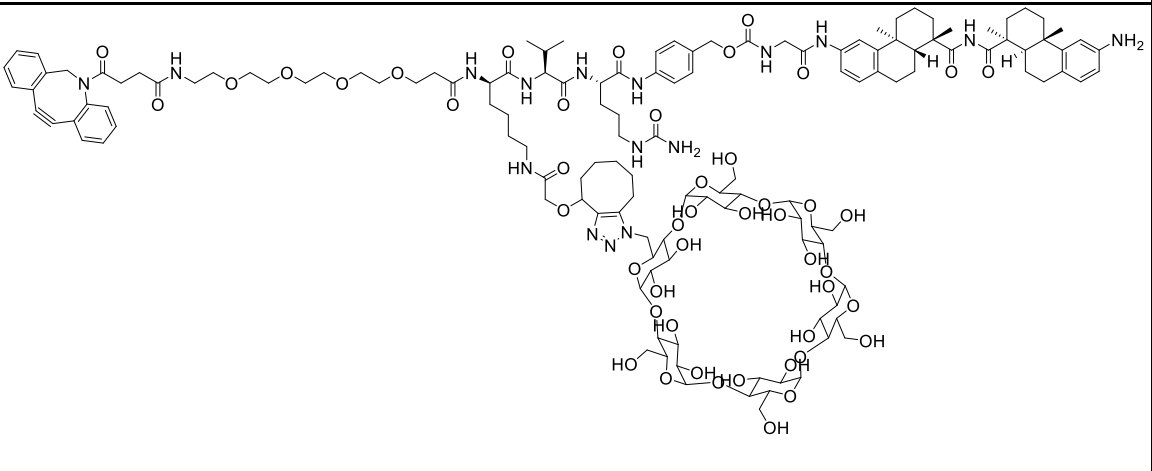
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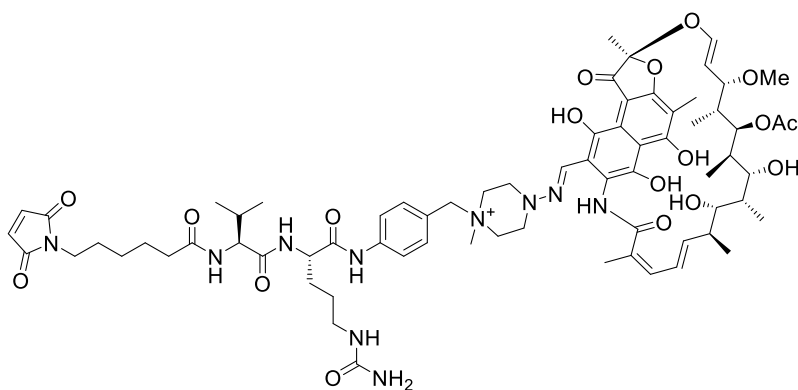
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LP31 A	

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LP4B	
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LP6B	
LP7B	
LP8B	

LP9B	
LP10 B	
LP11 B	
LP12 B	
R20	
R25	

54. An antibody-drug conjugate of claim 7, prepared by contacting an anti-MSR1 antibody or a PEG-modified anti-MSR1 antibody, or antigen-binding fragment thereof, with a linker payload, or a stereoisomeric form thereof, or a regioisomer thereof, according to Formula (D):



Formula (D).

under conditions suitable for forming a bond between anti-MSR1 antibody, or antigen-binding fragment thereof.

55. A pharmaceutical composition comprising the antibody or antigen-binding fragment thereof of any one of claims 1 to 6, and a pharmaceutically acceptable carrier.
56. A pharmaceutical composition comprising the antibody-drug conjugate of any one of claims 7 to 52, and a pharmaceutically acceptable carrier.
57. The antibody-drug conjugate of any one of claims 7-52, or the pharmaceutical composition of any one of claims 55-56 for use in therapy.
58. Use of the antibody-drug conjugate of any one of claims 1-21, 23-32, 49-51, or the pharmaceutical composition of any one of claims 57-58 in the manufacture of a medicament for treating a proliferative disease, a metabolic disease, inflammation, or a neurodegenerative disease.
59. The use of claim 58, wherein the medicament is for treating atherosclerosis.
60. The use of claim 58, wherein the disease, disorder, or condition associated with glucocorticoid receptor signaling is an inflammatory disease, disorder, or condition.
61. The use of claim 58, wherein the medicament is for treating arthritis.
62. The use of claim 58, wherein side effects associated with administration of the unconjugated steroid payload of said compound are to be reduced.
63. The use of claim 58, wherein the metabolic disease is dyslipidemia.

64. Use of the antibody-drug conjugate of any one of claims 1-19, 22, 33-48, and 52, or the pharmaceutical composition of any one of claims 55-56 in the manufacture of a medicament for preventing or treating bacterial infection.
65. The use of claim 64, wherein the bacterium is a gram positive bacterium, penicillin-resistant bacterium *Staphylococcus aureus*, methicillin resistant *Staphylococcus aureus* (MRSA), methicillin susceptible *Staphylococcus aureus* (MSSA), or vancomycin-resistant *Staphylococcus aureus* (VRSA), or multi-drug resistant *Mycobacterium tuberculosis*.
66. The use of claim 64, wherein the antibody-drug conjugate of any one of claims 1-19, 22, 33-48, and 52, or the pharmaceutical composition of any one of claims 55-56, is to be administered in combination with vancomycin.
67. Use of the antibody-drug conjugate of any one of claims 9-19, 22, 33-48, and 52, or the pharmaceutical composition of any one of claims 55-56 in the manufacture of a medicament for preventing or treating cellulitis, bacteremia, dermonecrosis, eyelid infection, eye infection, neonatal conjunctivitis, osteomyelitis, impetigo, boils, scalded skin syndrome, food poisoning, pneumonia, surgical infection, urinary tract infection, burn infection, meningitis, endocarditis, septicemia, toxic shock syndrome, septic arthritis, mastitis, infection associated with a prosthetic joint, infection associated with a catheter, or infection associated with an implant.
68. Use of the antibody-drug conjugate of any one of claims 9-19, 22, 33-48, and 52, or the pharmaceutical composition of any one of claims 55-56 in the manufacture of a medicament for preventing or treating an intracellular bacterial infection.