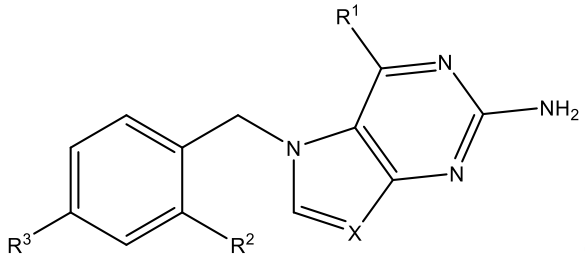
WHAT IS CLAIMED IS:

1. A compound, wherein the compound is of Formula I:



(I)

or is a pharmaceutically acceptable salt thereof,

wherein:

R^1 is H, halo, -NHR^4, -OR^4, -NH-OR^4 or -R^4;

R^2 is H, halo, or alkoxy;

R^3 is -CO_2R^{23}, -$CONHR^{23}$, -alkylene-Y, -alkylene-arylene-Y, -heteroalkylene-Y, -heteroalkylene-arylene-Y, -(hydroxy)heteroalkylene-Y, -(amino)heteroalkylene-Y, or -alkylene-PEG-Y;

R^4 is alkyl optionally substituted with alkoxy or heteroalkyl;

R^{23} is H, alkyl or aryl;

X is CH or N;

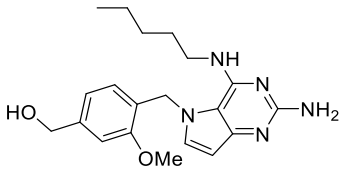
Y is -OH, -Gly, -NR^5R^6 or -COZ;

Z is -OH, alkoxy or -NR^7R^8;

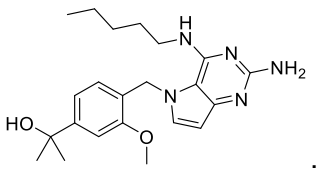
R^5 and R^6 are each independently H or alkyl, or, together with the N to which they are attached, form a heterocyclic ring; and

R^7 and R^8 are each independently H or alkyl, or, together with the N to which they are attached, form a heterocyclic ring;

with the proviso that the compound is not a compound of the formula:



or



.

2. The compound of claim 1, wherein:

R^1 is halo, -NHR^4, -OR^4, -NH-OR^4 or -R^4;

R^2 is halo or alkoxy;

R^3 is -CONHR^{23}, -alkylene-Y, -alkylene-arylene-Y, -heteroalkylene-Y, heteroalkylene-arylene-Y, -(hydroxy)heteroalkylene-Y, -(amino)heteroalkylene-Y, or -alkylene-PEG-Y;

R^{23} is H, alkyl or aryl;

R^4 is alkyl optionally substituted with alkoxy or heteroalkyl;

X is CH or N;

Y is -OH, Gly, -NR^5R^6 or -COZ;

Z is -OH or -NR^7R^8;

R^5 and R^6 are selected from (i), (ii), and (iii):

(i) R^5 and R^6 each H;

(ii) R^5 is H and R^6 is alkyl;

(iii) R^5 and R^6, together with the N to which they are attached, form a heterocyclic ring; and

R^7 and R^8, together with the N to which they are attached, form a heterocyclic ring.

3. The compound of claim 1 selected with the proviso that R^4 is not substituted with hydroxyl.

4. The compound of claim 1 selected with the proviso that the alkylene and heteroalkylene portions of R^3 are not substituted with oxo.

5. The compound of claim 1 selected with the proviso that the compound is not 5-(2-methoxy-4-(piperazin-1-ylmethyl)benzyl)-N4-pentyl-5H-pyrrolo[3,2-d]pyrimidine-2,4-diamine or (4-((2-amino-4-(pentylamino)-5H-pyrrolo[3,2-d]pyrimidin-5-yl)methyl)-3-methoxyphenyl)methanol.

6. The compound of claim 1, wherein R^1 is halo, -NHR^4, -OR^4, -NH-OR^4 or -R^4, and is a straight chain of 6 atoms in length.

7. The compound of claim 1, wherein R^1 is -NH-n-pentyl, -NH-O-n-butyl, -O-n-pentyl, -n-hexyl or -NH-CH_2CH_2-OEt.

8. The compound of claim 1, wherein R^2 is methoxy.

9. The compound of claim 1, wherein R^2 is H.

10. The compound of claim 1, wherein R^3 is -CONHR^{23}, -alkylene-Y, -heteroalkylene-Y, heteroalkylene-arylene-Y, -(hydroxy)heteroalkylene-Y, -(amino)heteroalkylene-Y, or -alkylene-PEG-Y.

11. The compound of claim 1, wherein R^3 is $-CONH_2$, $-CO_2H$, $-CH_2$-Y, $-CH_2$-O-heteroalkylene-Y, or $-CH_2$-O-alkylene-Y.

12. The compound of claim 1, wherein R^3 is $-CH_2$-Y, $-CH_2$-O-heteroalkylene-Y, or $-CH_2$-O-alkylene-Y.

13. The compound of claim 1, wherein R^3 is $-C(Me)_2OH$, $-CO_2H$ $-CH_2OCH_2CH_2NH_2$, $-CH_2OCH_2CH_2CH_2CH_2NH_2$, $-CH_2OCH_2CH_2OH$, $-CH_2OCH_2CH_2OCH_2CH_2OH$, $-CH_2OCH_2CH_2OCH_2CH_2NH_2$, $-CH_2OCH_2CH_2OCH_2CH_2OCH_2CH_2OCH_2CH_2OH$, $-CH_2OCH_2CH_2OCH_2CH_2OCH_2CH_2OCH_2CH_2NH_2$, $-CH_2OCH_2CH_2OCH_2CH_2OCH_2CH_2$-1-piperazinyl, $-CH_2OCH_2NHC(O)CH_2NH_2$, $-CH_2OCH_2$-(4-NH_2-1-phenyl), $-CH_2OCH_2COOH$, $-CH_2OCH_2CH_2OCH_2COOH$, $-CH_2OCH_2CH_2OCH_2CH_2OCH_2COOH$, $-CH_2OCH_2CH_2OCH_2CH_2OCH_2CH_2OCH_2COOH$ $-CH_2OCH_2COOEt$, $-CH_2OCH_2CON(n\text{-}Pr)_2$, $-CH_2OCH_2CO$-1-piperazinyl, -(*R*)-$CH_2OCH(OH)CH_2OH$, -(*S*)-$CH_2OCH(OH)CH_2OH$, $-CH_2OCH(NH_2)CH_2OH$, $-CH_2OH$, $-CH_2NH_2$, $-CONH_2$, or $-CH_2$-1-piperazinyl.

14. The compound of claim 1, wherein R^4 is n-butyl, n-pentyl, n-hexyl or ethoxyethyl.

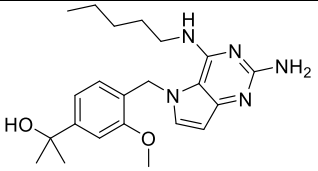
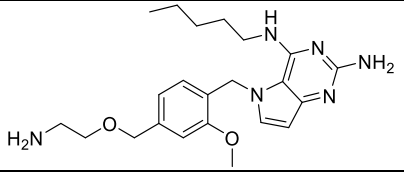
15. The compound of claim 1, wherein R^5 and R^6 are each independently H or alkyl, or, together with the N to which they are attached, form a piperazinyl ring.

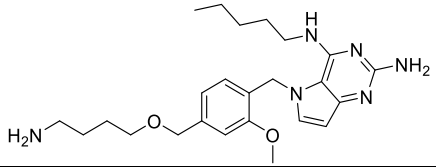
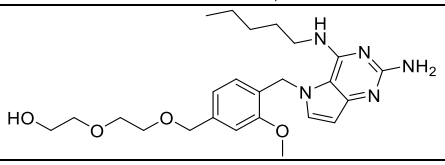
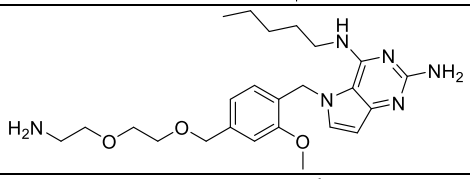
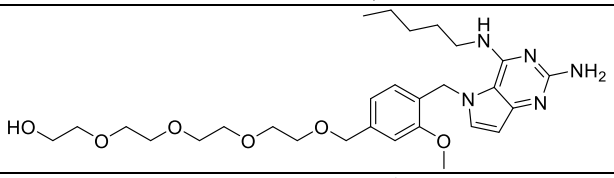
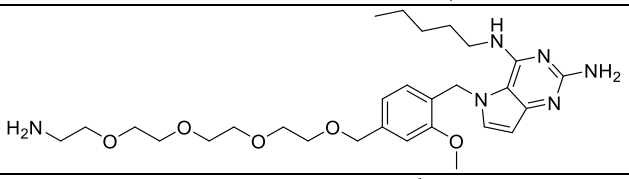
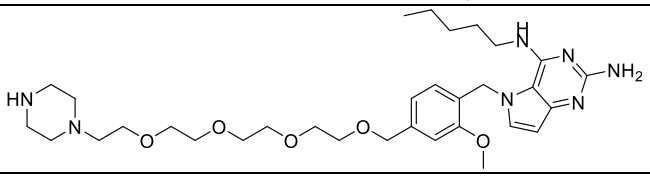
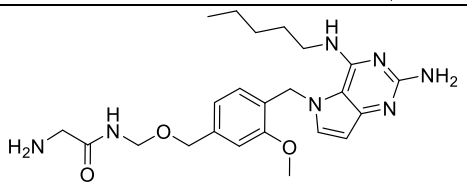
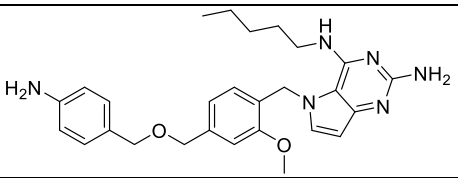
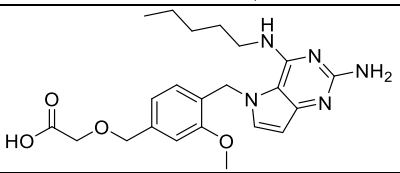
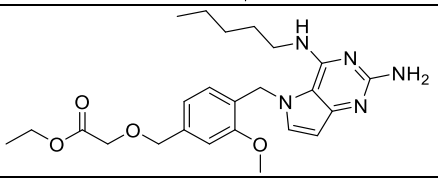
16. The compound of claim 1, wherein Y is $-OH$, $-NH_2$, 1-piperazinyl, $-COOH$, $-COOEt$, $-CONPr_2$ or $-CO$-1-piperazinyl.

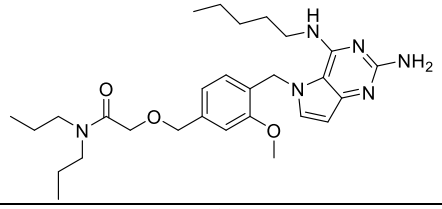
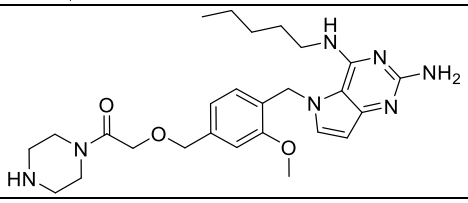
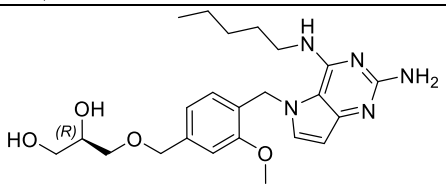
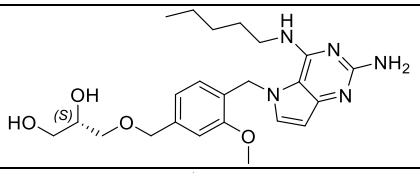
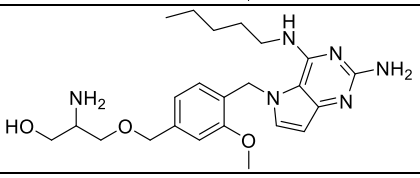
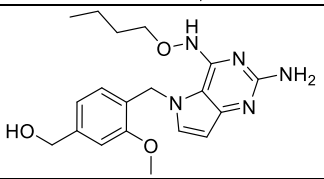
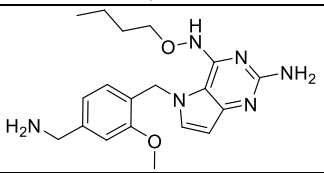
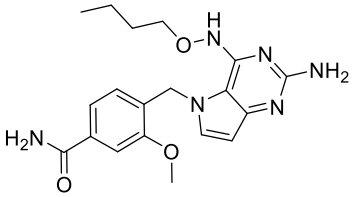
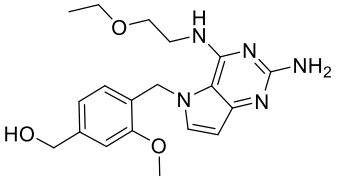
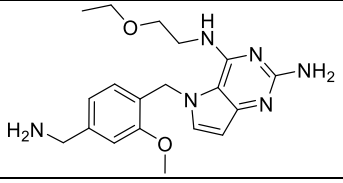
17. The compound of claim 1, wherein Z is $-OH$, ethoxy, $-N\text{-}n\text{-}Pr_2$ or 1-piperazinyl.

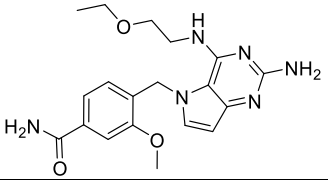
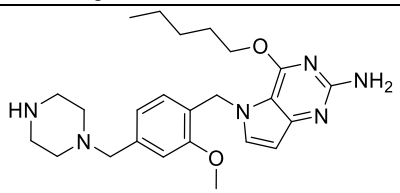
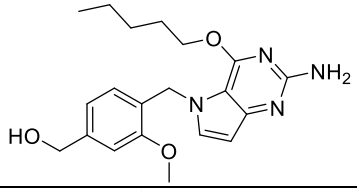
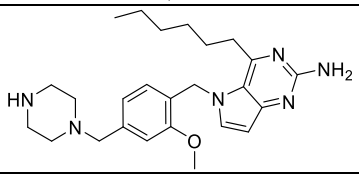
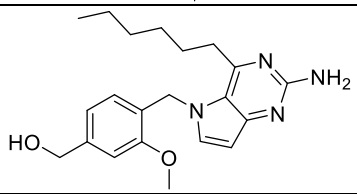
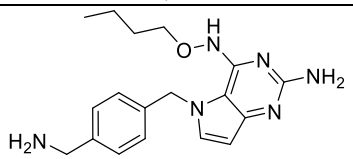
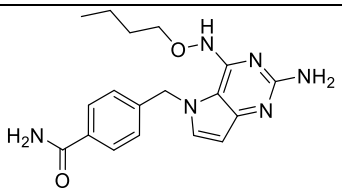
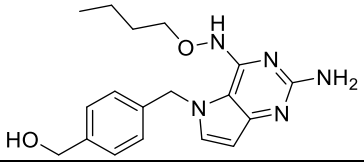
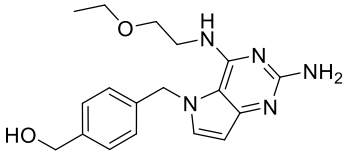
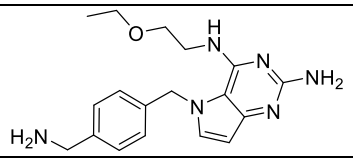
18. The compound of claim 1, wherein R^7 and R^8 are each independently H or n-propyl, or, together with the N to which they are attached, form 1-piperazinyl.

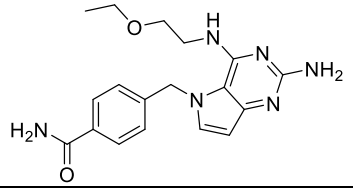
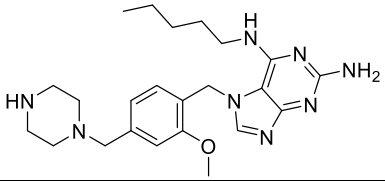
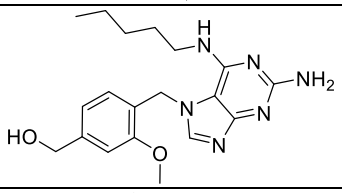
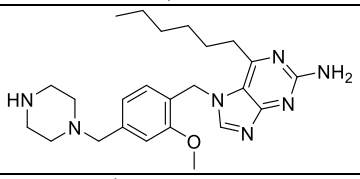
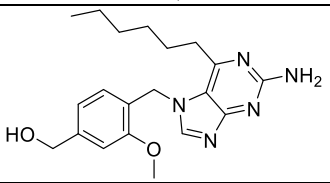
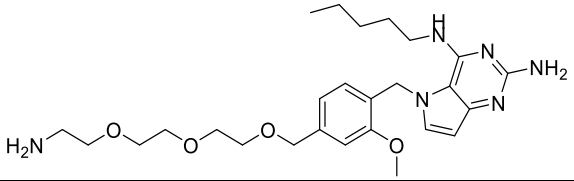
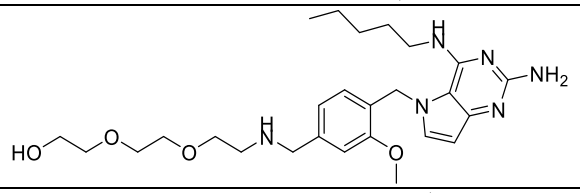
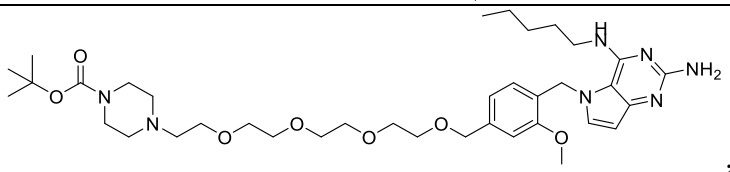
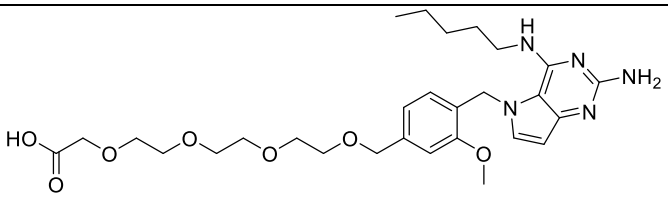
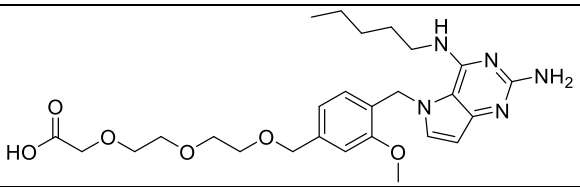
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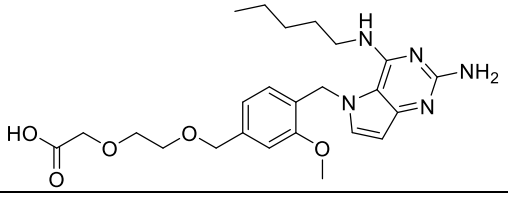
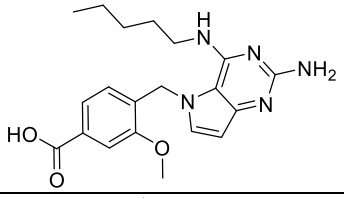
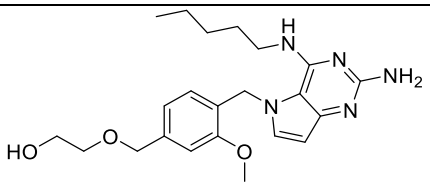
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P2	
P4	

Compound	Structure
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P6	
P7	
P8	
P9	
P10	
P11	
P12	
P13	
P14	

Compound	Structure
P15	
P16	
P17	
P18	
P19	
P20	
P21	
P22	
P23	
P24	

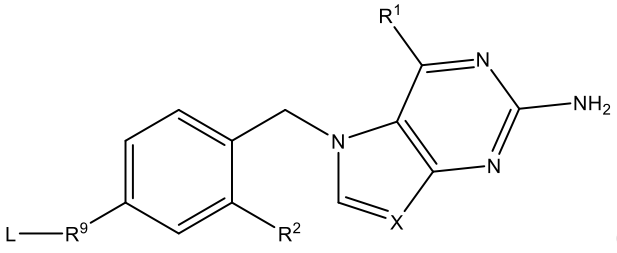
Compound	Structure
P25	
P26	
P27	
P28	
P29	
P30	
P31	
P32	
P33	
P34	

Compound	Structure
P35	
P36	
P37	
P38	
P39	
P41	
P42	
P43	 ,
P44	
P45	

Compound	Structure
P46	
P47	
P48	

and pharmaceutically acceptable salts thereof.

20. A compound, wherein the compound is of Formula II:



(II)

or is a pharmaceutically acceptable salt thereof,

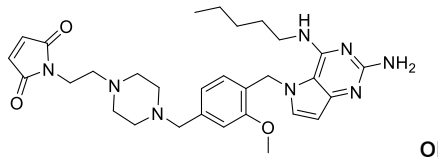
wherein:

R^1, R^2 and X are as defined for Formula I in claim 1;

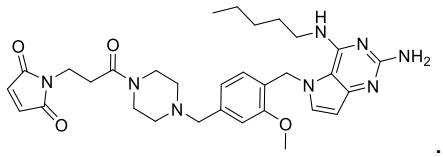
R^9 is a divalent group formed by removal of a terminal hydrogen (i.e., a hydrogen distal from the phenyl group to which R^9 is attached) from an R^3 group, as defined in claim 1; and

L is any group or moiety that links, connects, or bonds to an antigen-binding domain ABD;

with the proviso that the compound is not a compound of the formula:



or


.

21. The compound of claim 20, wherein R^9 is - alkylene-Y^1-, -heteroalkylene-Y^1-, -heteroalkylene-arylene-Y^1-, -(hydroxy)heteroalkylene-Y^1, -(amino)heteroalkylene-Y^1, or -alkylene-PEG-Y^1, wherein Y^1 is -O-, Gly, -NR^5- or -COZ^1, wherein Z^1 is -O- or -NR^7-.

22. The compound of claim 20, wherein R^9 is -CH_2-Y^1-, -CH_2-O-heteroalkylene-Y^1-, or -CH_2-O-alkylene-Y^1-.

23. The compound of claim 20, wherein R^9 is -$C(Me)_2O$-, C(O)-, -$CH_2OCH_2CH_2NH$-, -$CH_2OCH_2CH_2CH_2CH_2NH$-, -$CH_2OCH_2CH_2OCH_2CH_2O$-, -$CH_2OCH_2CH_2OCH_2CH_2NH$-, -$CH_2OCH_2CH_2OCH_2CH_2OCH_2CH_2OCH_2CH_2O$-, -$CH_2OCH_2CH_2OCH_2CH_2OCH_2CH_2OCH_2CH_2NH$-, -$CH_2OCH_2CH_2OCH_2CH_2OCH_2CH_2OCH_2CH_2$-1-piperazin-4-yl-, -$CH_2OCH_2NHC(O)CH_2NH$-, -$CH_2OCH_2$-((4-NH-)-1-phenyl), -$CH_2OCH_2COO$-, -$CH_2OCH_2CH_2OCH_2CO$-, -$CH_2OCH_2CH_2OCH_2CH_2OCH_2CO$-, -$CH_2OCH_2CH_2OCH_2CH_2OCH_2CH_2OCH_2CH_2OCH_2CO$-, -$CH_2OCH_2CO$-1-piperazin-4-yl, -(*R*)-$CH_2OCH(OH)CH_2O$-, -(*S*)-$CH_2OCH(OH)CH_2O$-, -$CH_2OCH(NH_2)CH_2O$-, -CH_2O-, -CH_2NH-, or -CH_2-1-piperazin-4-yl.

24. The compound of claim 20, wherein Y^1 is -O-, -NH-, 1-piperazin-4-yl, -COO-, or -CO-1-piperazin-4-yl.

25. The compound of claim 21, wherein Z^1 is -O- or 1-piperazin-4-yl.

26. The compound of claim 21, wherein R^5 is H.

27. The compound of claim 21, wherein R^5 is alkyl.

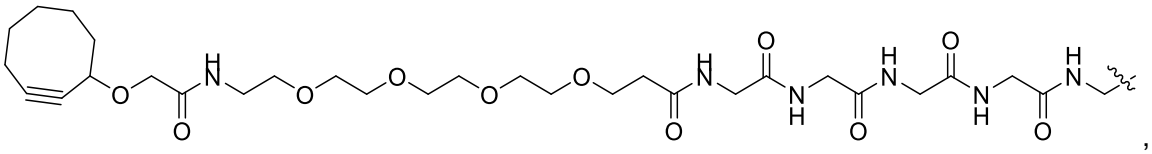
28. The compound of claim 20, wherein L is non-cleavable under physiological conditions.

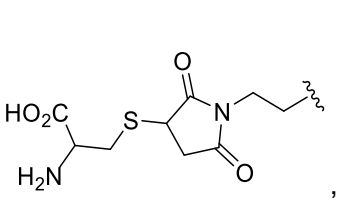
29. The compound of claim 20, wherein L is cleavable under physiological conditions.

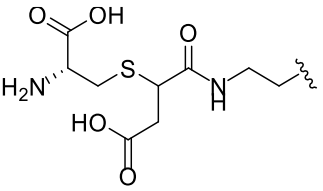
30. The compound of claim 20, wherein L is or comprises a peptide, a carbohydrate, a glucuronide, a polyethylene glycol (PEG) unit, a hydrazone, a mal-caproyl unit, a dipeptide unit, a valine-citruline unit, or a para-aminobenzyl (PAB) unit.

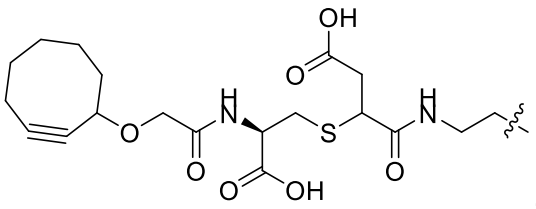
31. The compound of claim 20, wherein L comprises a maleimido, an N-hydroxysuccinimido ester or cyclooctynyl group.

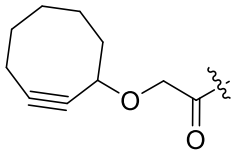
32. The compound of claim 20, wherein L is a group selected from 2-maleimido-1-ethyl, 2-maleimidoacetyl, 3-maleimidopropanoyl,

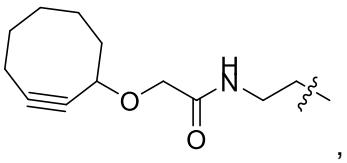

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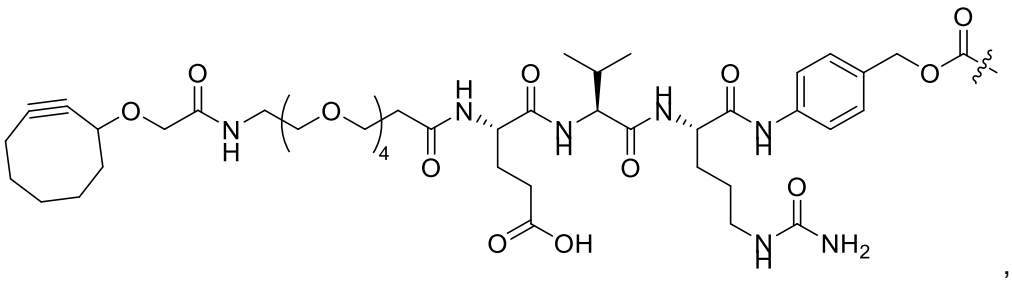

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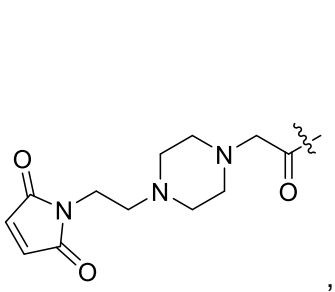

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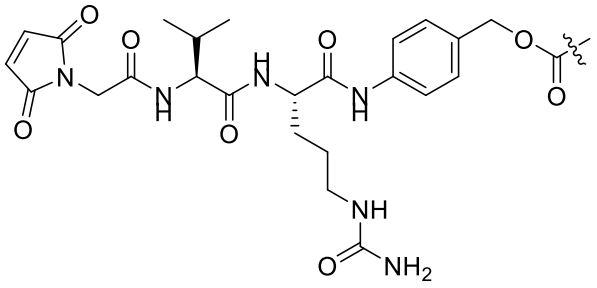

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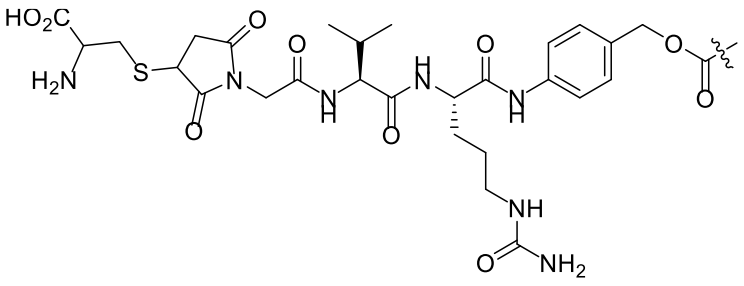

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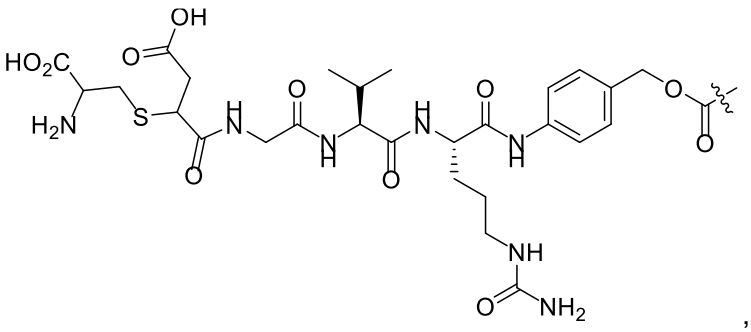

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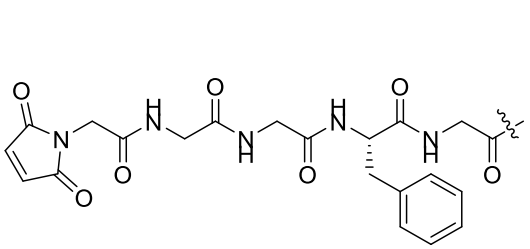

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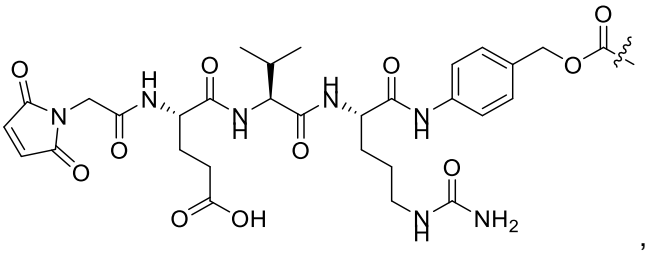

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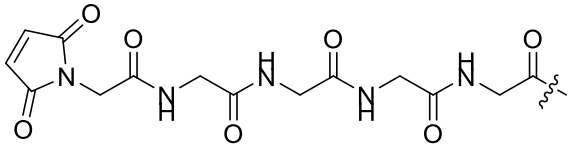
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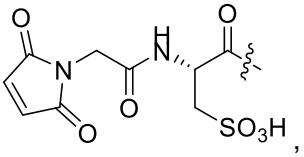
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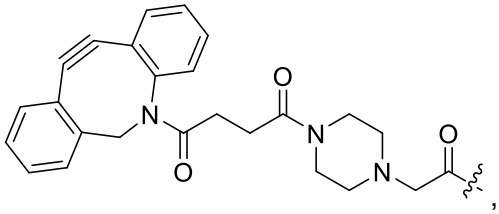
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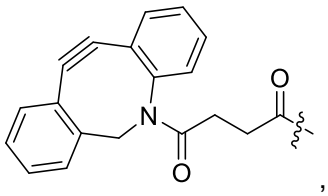
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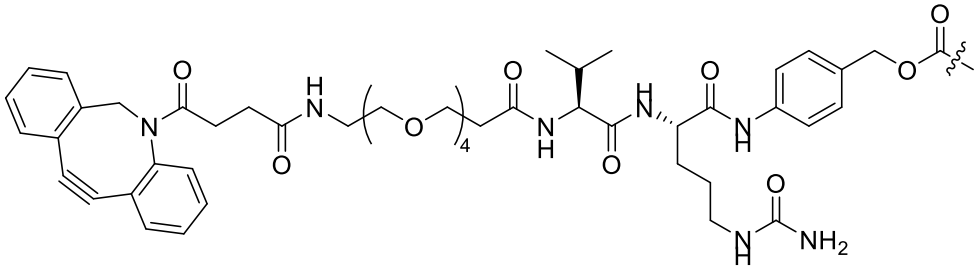
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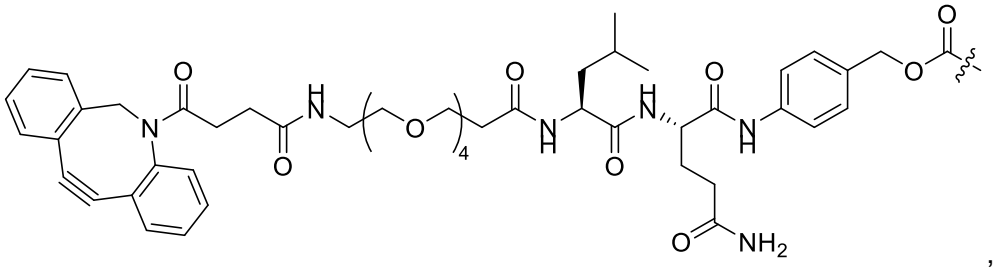
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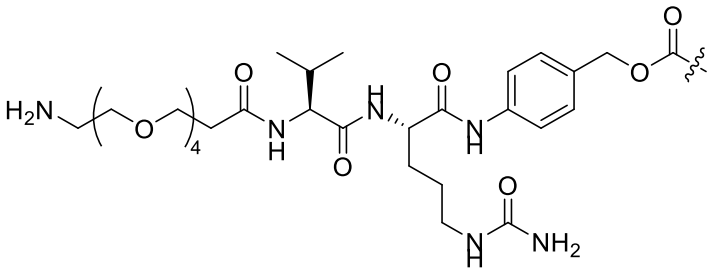
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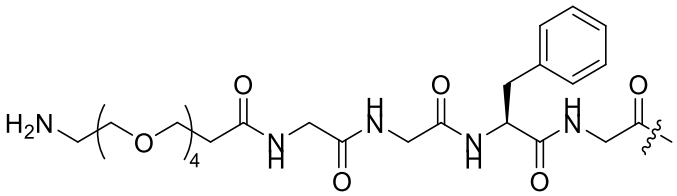
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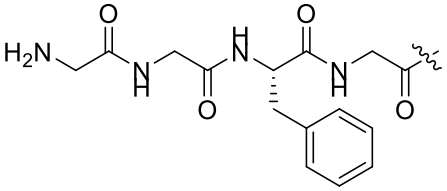
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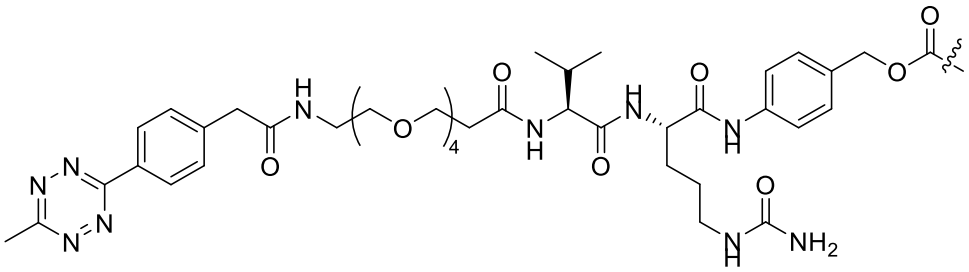
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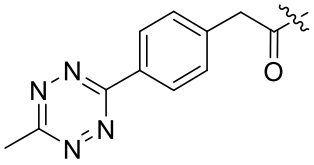
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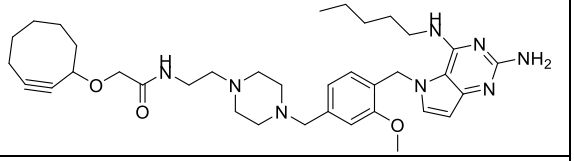
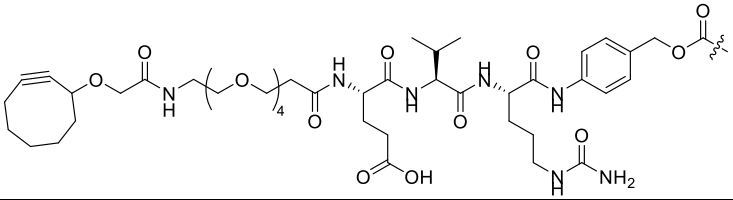
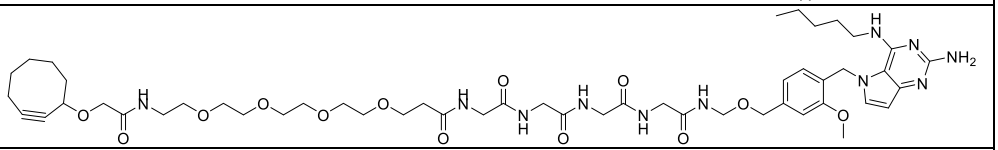
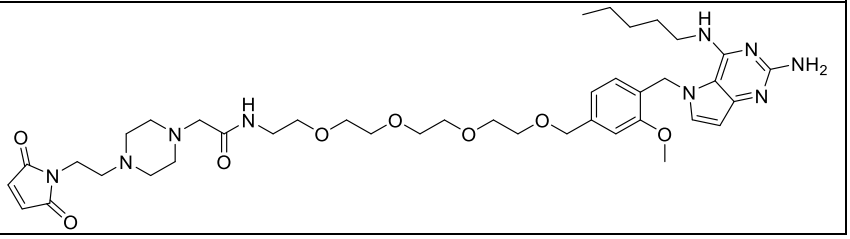


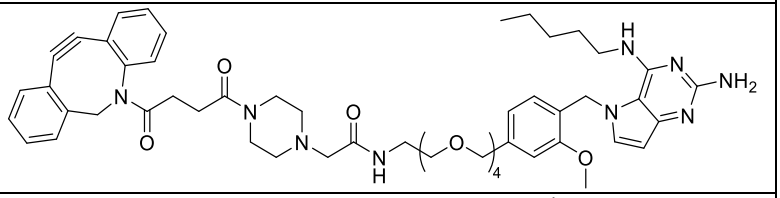
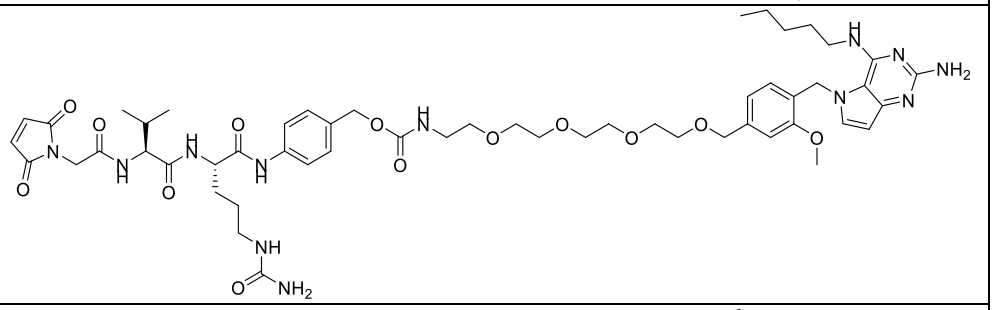
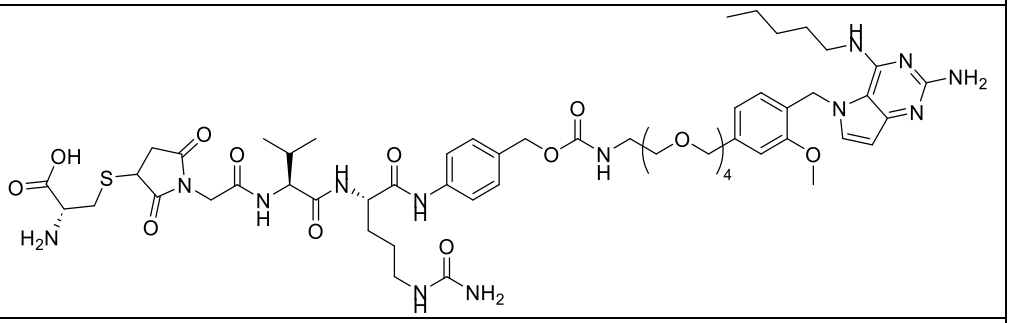
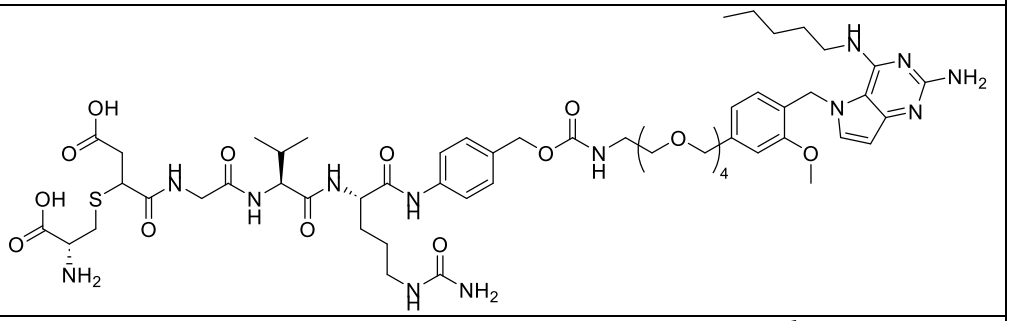
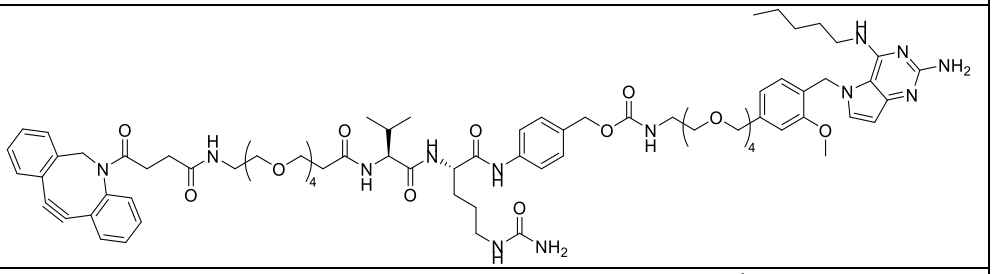
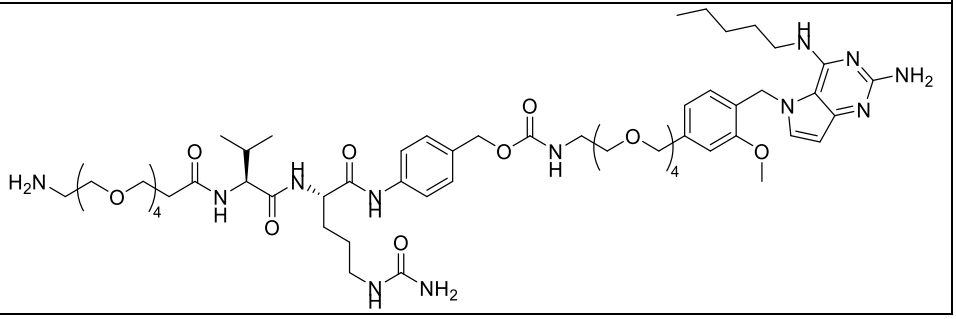
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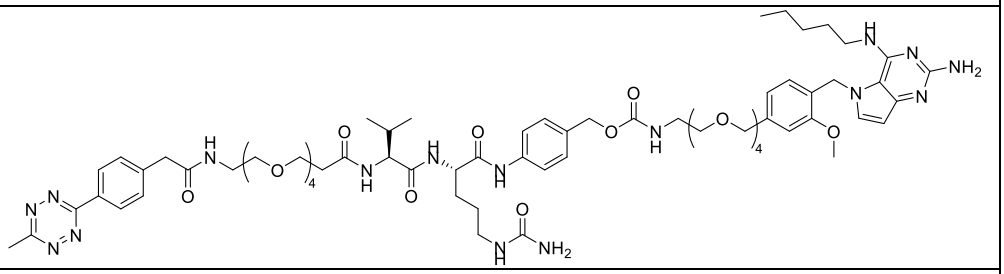
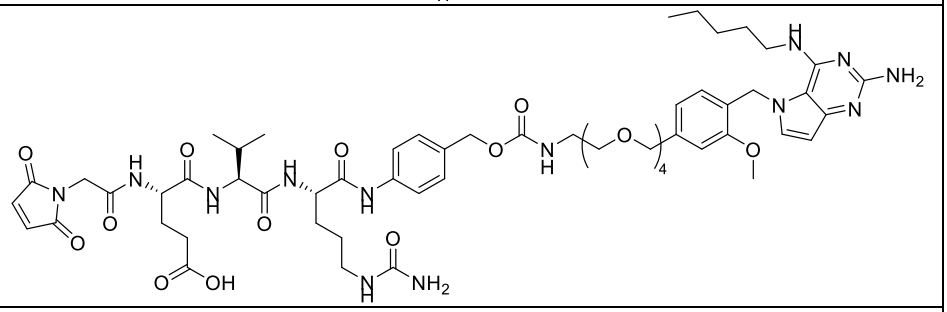
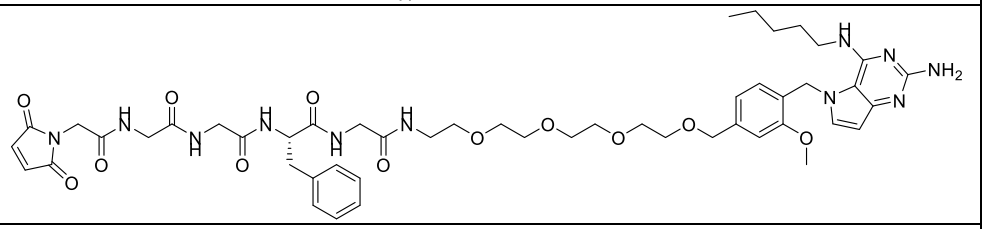
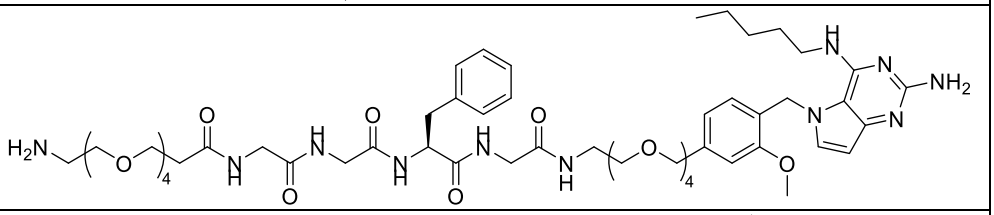
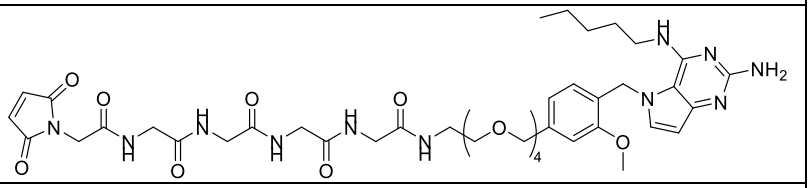
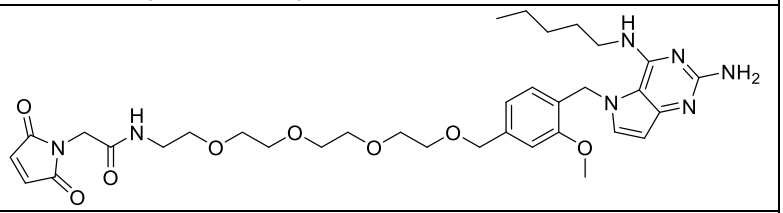
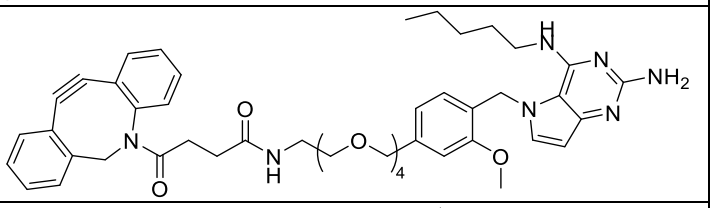
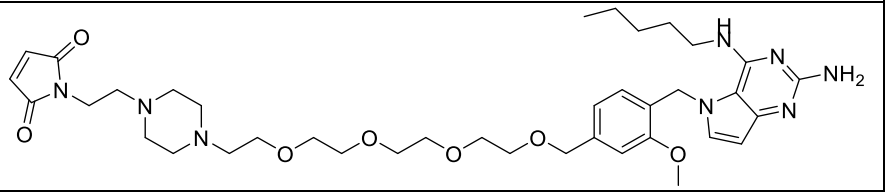


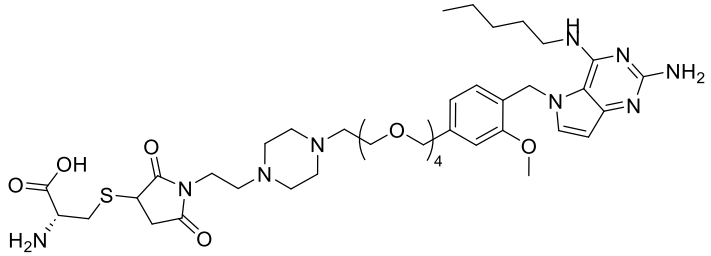
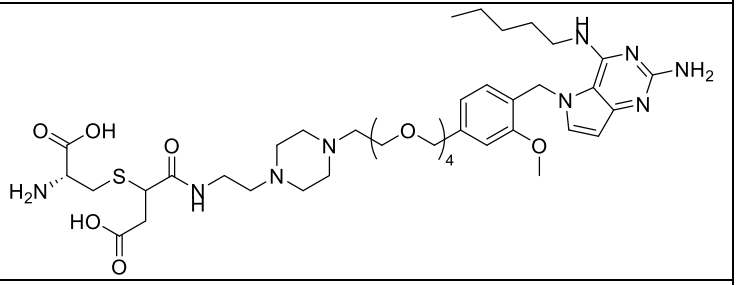
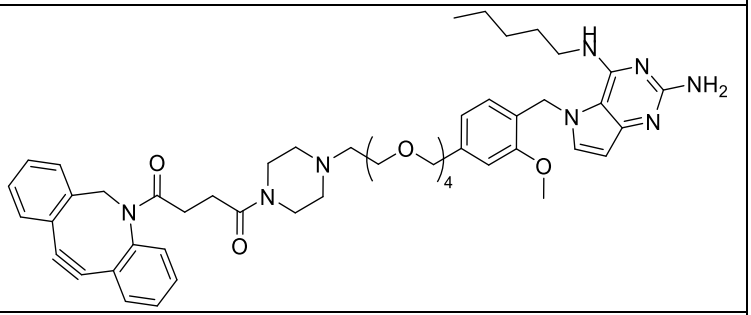
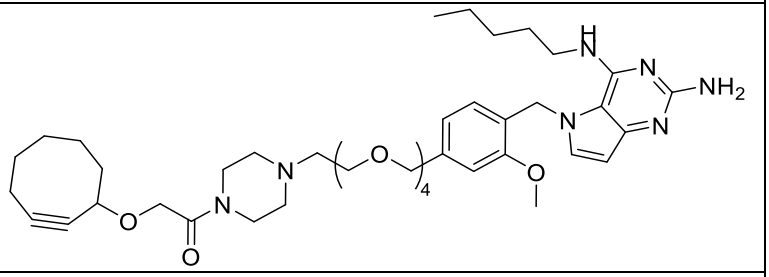
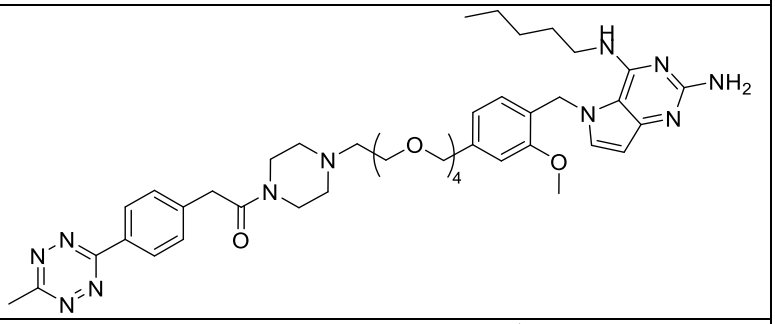
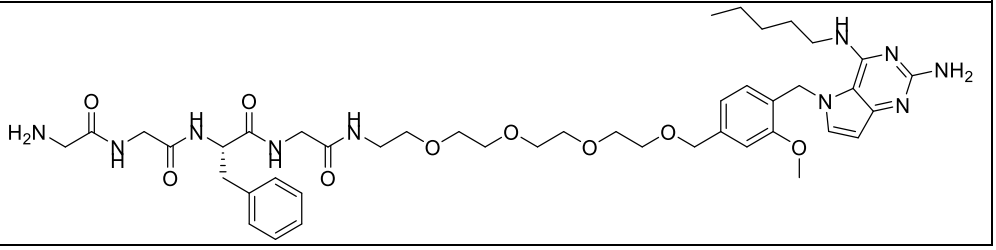
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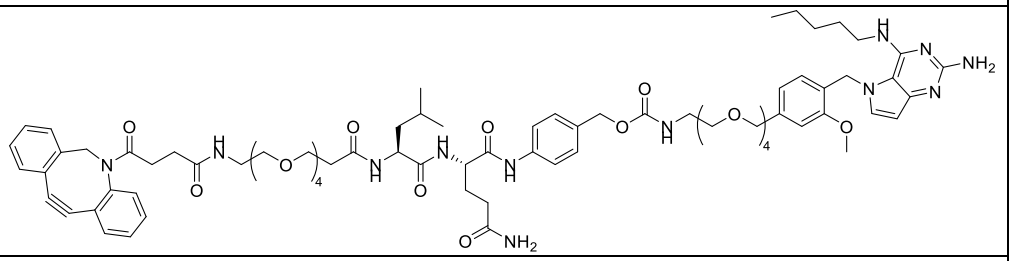
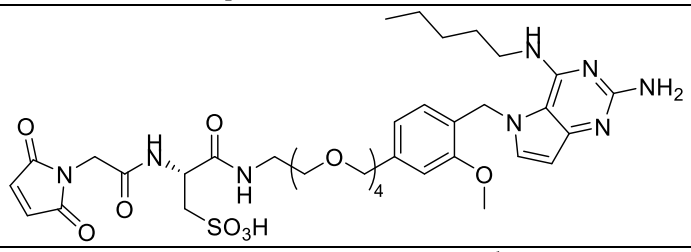
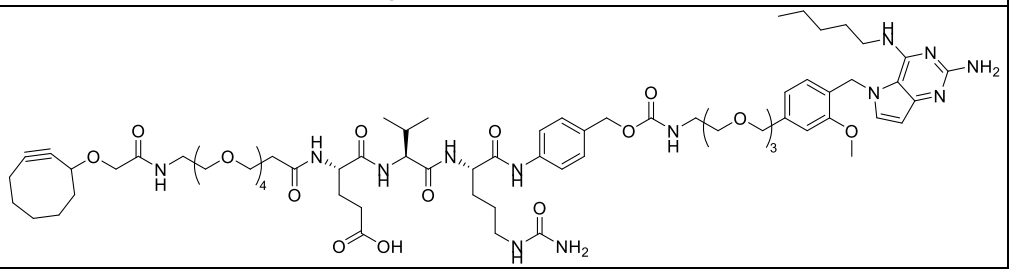
33. A compound selected from:

Compound	Structure
LP3	
LP4	
LP5	
LP6A	

Compound	Structure
LP6B	
LP7A	
Q_c-LP7A	
Q_o-LP7A	
LP7B	
LP7C	

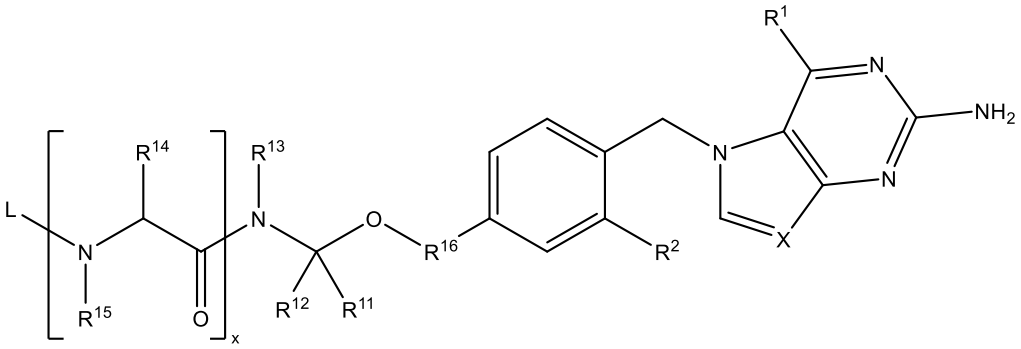
Compound	Structure
LP7D	
LP7E	
LP8A	
LP8B	
LP9	
LP10A	
LP10B	
LP11A	

Compound	Structure
Q_c-LP11A	
Q_o-LP11A	
LP11B	
LP11C	
LP11D	
LP12	

Compound	Structure
LP13	
LP14	
LP15	

and pharmaceutically acceptable salts thereof.

34. A compound, wherein the compound is of Formula III:



(III)

or is a pharmaceutically acceptable salt thereof,

wherein:

R^1, R^2 and X are as defined in claim 1;

L is any group or moiety that links, connects, or bonds to an antigen-binding domain ABD;

R^{11} and R^{12} are, independently, hydrogen, alkyl, alkoxy, alkenyl, alkynyl, aryl, arylalkyl, heteroaryl, alkylene, or heteroalkylene, wherein when R^{11} is alkylene or heteroalkylene, the alkylene or heteroalkylene is further bonded to R^{13} to form a 3-, 4-, 5-, 6-, 7-, or 8-membered heterocyclyl;

R^{14} is hydrogen, alkylene, heteroalkylene, or an amino acid side chain, wherein when R^{14} is alkylene or heteroalkylene, the alkylene or heteroalkylene is further bonded to R^{13} to form a 4-, 5-, or 6-membered heterocyclyl;

R^{13} is hydrogen, alkyl, alkylene, or heteroalkylene, wherein when R^{13} is alkylene or heteroalkylene, the alkylene or heteroalkylene is further bonded to R^{11} or R^{14} to form the 3-, 4-, 5-, 6-, 7-, or 8-membered heterocyclyl;

R^{15} is hydrogen or alkyl;

R^{16} is alkylene alkylene-arylene, heteroalkylene or heteroalkylene-arylene, -(hydroxy)heteroalkylene-, -(amino)heteroalkylene-, or -alkylene-PEG-; and

x is zero, one, two, three, four, five, or six.

35. The compound of claim 34, wherein

R^{11} and R^{12} are, independently, hydrogen, alkyl, alkoxy, alkenyl, alkynyl, aryl, arylalkyl, heteroaryl, alkylene, or heteroalkylene, wherein when R^{11} is alkylene or heteroalkylene, the alkylene or heteroalkylene is further bonded to R^{13} to form a 4-, 5-, or 6-membered heterocyclyl;

R^{14} is hydrogen, alkylene, heteroalkylene, or an amino acid side chain, wherein when R^{14} is alkylene or heteroalkylene, the alkylene or heteroalkylene is further bonded to R^{13} to form a 4-, 5-, or 6-membered heterocyclyl;

R^{13} is hydrogen, alkyl, alkylene, or heteroalkylene, wherein when R^{13} is alkylene or heteroalkylene, the alkylene or heteroalkylene is further bonded to R^{11} or R^{14} to form a 4-, 5-, or 6-membered heterocyclyl;

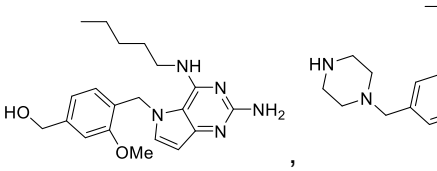
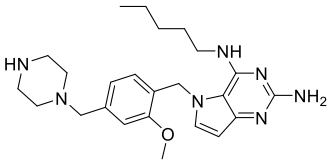
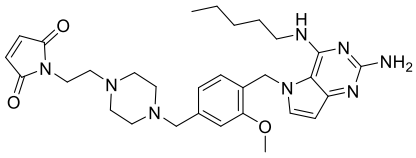
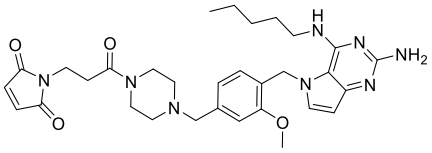
R^{15} is hydrogen or alkyl;

R^{16} is alkylene alkylene-arylene, heteroalkylene, heteroalkylene-arylene, -(hydroxy)heteroalkylene-, -(amino)heteroalkylene-, or -alkylene-PEG-; and

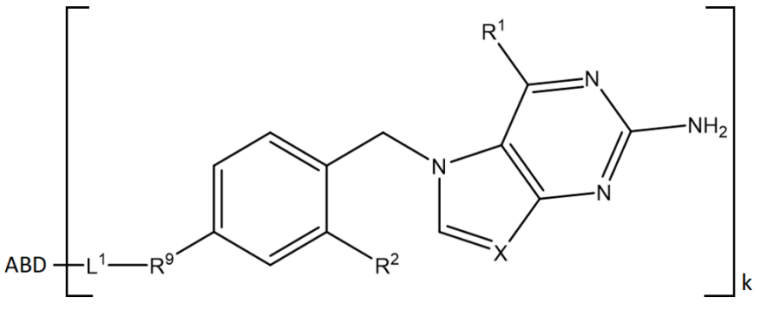
x is zero, one, two, three, four, five, or six.

36. The compound of claim 34, wherein the TLR7 agonist used in preparing the compound is P2, P6, P8, P17, P18, P19, P20, P23, P27, P29, P32, P33, P37, P39, P41, P42 or P43.

37. An antibody-drug-conjugate (ADC), comprising the compound of claim 1 or compounds of the formulae:


,

,

or

.

38. The ADC of claim 37, wherein the ADC is of Formula IV:


(IV)

or is a pharmaceutically acceptable salt thereof, wherein:

R^1, R^2, R^9 and X are as defined in claim 1 for Formula I and claim 56 for Formula II;

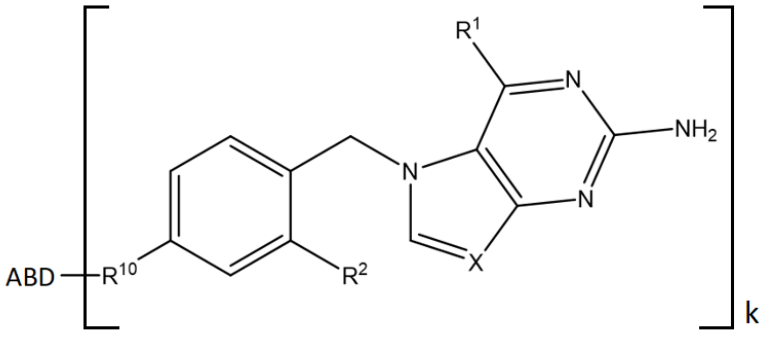
L^1 is a divalent linker;

ABD is an antigen-binding domain; and

k is an integer from one to thirty.

39. The ADC of claim 37 that is ABD-LP1, ABD-LP6A, ABD-LP7A, ABD-LP8A, ABD-LP10A or ABD-LP11A.

40. The ADC of claim 37, wherein the ADC is of Formula V:


(V)

or is a pharmaceutically acceptable salt thereof, wherein:

R^1, R^2 and X are as defined in claim 1 for Formula I;

R^{10} is -alkylene-NH-, -alkylene-arylene-NH-, -heteroalkylene-NH-, -heteroalkylene-arylene-NH-, -(hydroxy)heteroalkylene-NH-, -(amino)heteroalkylene-NH-, or -alkylene-PEG-NH-;

ABD is an antibody that contains a Q295 residue, an N297Q mutation, and/or one or more engineered LLQG (SEQ ID NO: 1), LLQGG (SEQ ID NO: 2), LLQLLQG (SEQ ID NO: 3), LLQYQG (SEQ ID NO: 4), LLQGA (SEQ ID NO: 5), LLQGSG (SEQ ID NO: 6), SLLQG (SEQ ID NO: 7), LQG, LLQLQ (SEQ ID NO: 9), LLQLLQ (SEQ ID NO: 10), LLQGR (SEQ ID NO: 11), LLQYQGA (SEQ ID NO: 12), LQGG (SEQ ID NO: 13), LGQG (SEQ ID NO: 14) or LLQLLQGA (SEQ ID NO: 15) sites; and

k is an integer from one to thirty.

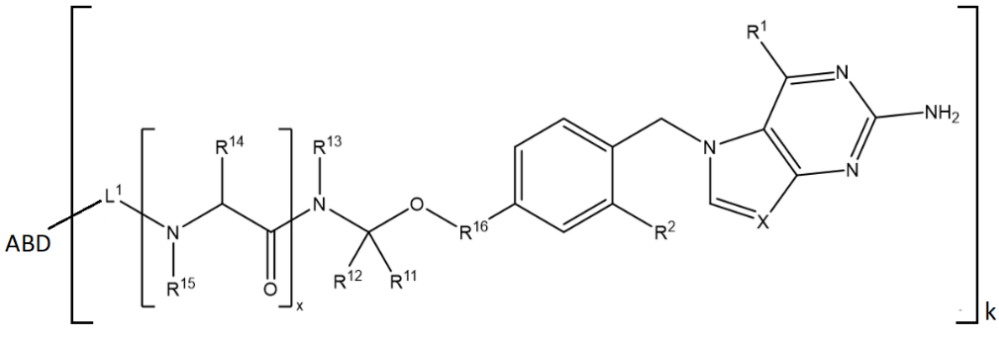
41. The ADC of claim 40, wherein R^{10} is -alkylene-NH-, -heteroalkylene-NH-, -heteroalkylene-arylene-NH-, -(hydroxy)heteroalkylene-NH-, -(amino)heteroalkylene-NH-, or -alkylene-PEG-NH-.

42. The ADC of claim 40, wherein R^{10} is -CH_2-NH-, -CH_2-O-heteroalkylene-NH-, or -CH_2-O-alkylene-NH-.

43. The ADC of claim 40, wherein R^{10} is -$CH_2OCH_2CH_2NH$-, -$CH_2OCH_2CH_2CH_2CH_2NH$-, -$CH_2OCH_2CH_2OCH_2CH_2NH$-, -$CH_2OCH_2CH_2OCH_2CH_2OCH_2CH_2OCH_2CH_2NH$-, -$CH_2OCH_2NHC(O)CH_2NH$-, -$CH_2OCH_2$-(4-NH-1-phenyl), -$CH_2OCH$(NH-)$CH_2OH$ or -CH_2NH-.

44. The ADC of claim 40, having the formula ABD-P4, ABD-P5, ABD-P7, ABD-P9, ABD-P10, ABD-P11, ABD-P12, ABD-P19, ABD-P21, ABD-P24, ABD-P30, ABD-P34 or ABD-P41, wherein ABD is attached to the payload (i.e., TLR7 agonist) on the amino group of R^3.

45. The ADC of claim 40, wherein the ADC is of Formula VI:



(VI)

or is a pharmaceutically acceptable salt thereof, wherein:

L^1 is a divalent linker;

R^1, R^2, R^{16}, R^{11}, R^{12}, R^{13}, R^{14}, R^{15}, X, and x are as defined for Formula III in claim 86; and

k is an integer from one to thirty.

46. A pharmaceutical composition, comprising a compound of claim 1 or an ADC of claim 40, and a pharmaceutically acceptable carrier.

47. Use of the compound of claim 1, an ADC of claim 40, or a pharmaceutical composition of claim 46 in the manufacture of a medicament for treating cancer in a subject, wherein the compound, ADC, or pharmaceutical composition is to be administered to the subject.

48. An antibody-drug-conjugate (ADC), comprising

a. an antigen-binding domain (ABD) having binding specificity to a hepatitis B virus surface antigen (HBV sAg); and

b. a Toll-like receptor 7 (TLR7) agonist that links the ABD with a divalent linker.

49. Use of the ADC of claim 48 in the manufacture of a medicament for treating chronic Hepatitis B in a subject, wherein an effective amount of the ADC is to be administered to the subject.