

## CLAIMS

What is claimed is:

1. An antibody that specifically binds to tenofovir comprising:  
an immunoglobulin heavy chain and an immunoglobulin light chain,  
wherein the variable region of said light chain comprises:
  - (i) a CDR1 region comprising an amino acid sequence selected from the group consisting of SEQ ID NOs: 17, 19, 21, and 23;
  - (ii) a CDR2 region comprising an amino acid sequence selected from the group consisting of SEQ ID NOs: 25, 27, 29, and 31; and/or
  - (iii) a CDR3 region comprising an amino acid sequence selected from the group consisting of SEQ ID NOs: 33, 35, 37, and 39.
2. An antibody that specifically binds to tenofovir comprising:  
an immunoglobulin heavy chain and an immunoglobulin light chain,  
wherein the variable region of said heavy chain comprises:
  - (i) a CDR1 region comprising an amino acid sequence selected from the group consisting of SEQ ID NOs: 18, 20, 22, and 24;
  - (ii) a CDR2 region comprising an amino acid sequence selected from the group consisting of SEQ ID NOs: 26, 28, 30, and 32; and/or
  - (iii) a CDR3 region comprising an amino acid sequence selected from the group consisting of SEQ ID NOs: 34, 36, 38, and 40.
3. The antibody of claim 1 or claim 2, wherein the antibody comprises a variable heavy chain amino acid sequence as set forth in SEQ ID NOs: 12, 14, 16, or 42.
4. The antibody of any of claims 1-3, wherein the antibody comprises a variable light chain amino acid sequence as set forth in SEQ ID NOs: 11, 13, 15, or 41.
5. An antibody preparation comprising an antibody of any one of claims 1- 4.
6. The antibody preparation of claim 5 wherein said preparation is a monoclonal antibody preparation.

7. An isolated nucleic acid molecule encoding a heavy chain or light chain of any one of claims 1- 4.
8. The isolated nucleic acid of claim 7, wherein said nucleic acid is selected from the group consisting of a cloning vector, an expression vector, a heterologous recombination vector and a viral integration vector.
9. A cell transformed with a nucleic acid of any one of claims 7- 8.
10. The cell of claim 9, wherein said cell is a mammalian cell.
11. The cell of claim 10, wherein said cell is a cell selected from the group consisting of rabbit, hamster, mouse, rat, chicken, goat, monkey, sheep, pig, horse, cow, and human.
12. A method of detecting tenofovir in a biological fluid sample of a subject, comprising contacting the antibody of any of claims 1- 4 with a biological fluid sample from the subject.
13. The method of claim 12, wherein the subject is prescribed or administered an NRTI.
14. The method of claim 12, wherein the biological fluid sample is urine.
15. A method for performing an assay to detect a metabolite in a fluid sample of a patient, wherein the patient is prescribed or administered an NRTI, comprising:
  - (a) apply a fluid sample to a sample pad;
  - (b) allowing said sample to flow laterally along the sample pad to a conjugated label pad; wherein said conjugated label pad comprises a first reagent conjugated to a detectable label, and wherein a portion of the conjugated label pad and a portion of the sample pad forms a first interface;
  - (c) allowing said sample to flow laterally along the conjugated label pad to a

membrane; wherein a portion of the membrane and a portion of the conjugated label pad forms a second interface; and wherein said membrane comprises at least one second reagent bound to the membrane to form a test line;

(d) binding the first reagent to the second reagent to form a second reagent-first reagent complex at the test line, and causing the detectable label to form a detectable signal at the test line,

(e) diagnosing the patient as non-adherent to a treatment or prophylactic regimen in the presence of a detectable signal; or adherent to a treatment or prophylactic regimen in the absence of a detectable signal.

16. A device for performing an assay to detect a metabolite in a fluid sample of a patient, wherein the patient is prescribed or administered an NRTI, comprising:

(a) a sample pad for contacting the fluid sample;

(b) a conjugated label pad, the conjugated label pad having a first reagent conjugated to a detectable label, a portion of the conjugated label pad and a portion of the sample pad forming a first interface;

(c) an assay comprising a membrane, a portion of the membrane and a portion of the conjugated label pad forming a second interface; and

(d) at least one second reagent bound to the membrane to form a test line, the first interface allowing fluid to flow from the sample pad to the conjugated label pad and contact the detectable label, the second interface allowing fluid to flow from the conjugated label pad to the membrane and to contact the at least one membrane-bound second reagent to form to a second reagent-first reagent complex, and cause the detectable label to form a detectable signal at the test line,

wherein the presence of a detectable signal indicates non-adherence to a treatment or prophylactic regimen in the patient, and wherein the absence of a detectable signal indicates adherence to a treatment or prophylactic regimen in the patient.

17. The method of claim 15 or the device of claim 16, wherein the detectable signal is modulated to provide that the presence of a detectable signal indicates adherence to a treatment or prophylactic regimen in the patient.

18. The method of claim 15 or the device of claim 16, which is a lateral flow assay.
19. The method of claim 15 or the device of claim 16, which is a lateral flow immunoassay.
20. The method of claim 15 or the device of claim 16, wherein the first reagent is the compound of any one of claims 70-93, or a conjugated derivative of same.
21. The method of claim 15 or the device of claim 16, wherein the first reagent is a conjugated derivative of the compound of claim 88.
22. The method of claim 15 or the device of claim 16, wherein the first reagent is a conjugated derivative of the compound of claim 92.
23. The method of claim 15 or the device of claim 16, wherein the first reagent is a conjugated derivative of the compound of claim 90.
24. The method of claim 15 or the device of claim 16, wherein the first reagent is a conjugated derivative of the compound of claim 93.
25. The method of claim 15 or the device of claim 16, wherein the first reagent is a conjugated derivative of the compound of claim 89.
26. The method of claim 15 or the device of claim 16, wherein the first reagent is a conjugated derivative of the compound of claim 91.
27. The method or the device of any one of claims 15-26, wherein the conjugated derivative is an HRP-conjugated derivative.
28. The method of claim 15 or the device of claim 16, wherein the second reagent

is the antibody of any one of claims 1-4 or 99-103.

29. The method or the device of claim 28, wherein the antibody is conjugated to a detectable label.

30. The method of claim 15 or the device of claim 16, wherein the first reagent is the antibody of any one of claims 1-4 or 99-103.

31. The method or the device of claim 30, wherein the antibody is conjugated to a detectable label.

32. The method of claim 15 or the device of claim 16, wherein the second reagent is the compound of any one of claims 70-93, or a conjugated derivative of same

33. The method of claim 15 or the device of claim 16, wherein the second reagent is a conjugated derivative of the compound of claim 88.

34. The method of claim 15 or the device of claim 16, wherein the second reagent is a conjugated derivative of the compound of claim 92.

35. The method of claim 15 or the device of claim 16, wherein the second reagent is a conjugated derivative of the compound of claim 90.

36. The method of claim 15 or the device of claim 16, wherein the second reagent is a conjugated derivative of the compound of claim 93.

37. The method of claim 15 or the device of claim 16, wherein the second reagent is a conjugated derivative of the compound of claim 89.

38. The method of claim 15 or the device of claim 16, wherein the second reagent is a conjugated derivative of the compound of claim 91.

39. The method or the device of any one of claims 32-38, wherein the conjugated derivative is an HRP-conjugated derivative.
40. The method of claim 15 or the device of claim 16, further comprising an absorbent pad downstream of the membrane.
41. The method of claim 15 or the device of claim 16, wherein the membrane is nitrocellulose.
42. The device of claim 16, which is provided in a housing.
43. The device of claim 42, wherein the housing further comprises an opening for reading the detectable signal.
44. The method of claim 15 or the device of claim 16, wherein the antibody is a polyclonal antibody.
45. The method of claim 15 or the device of claim 16, wherein antibody is a monoclonal antibody.
46. The method of claim 15 or the device of claim 16, wherein the antibody is the antibody of any one of claims 1-4.
47. The method of claim 15 or the device of claim 16, wherein the metabolite is TFV.
48. The method of claim 15 or the device of claim 16, wherein the membrane further comprises a third reagent bound to the membrane downstream or upstream of the test line to form a control line.
49. The method or the device of claim 48, wherein the third reagent binds to the first reagent to cause a detectable signal at the control line, wherein the presence of

the detectable signal at the control line indicates proper performance of the lateral-flow assay.

50. The method or the device of any one of claims 48-49, wherein the third reagent is an anti-HRP antibody.

51. The method or the device of any one of claims 48-50, wherein the third reagent is an anti-rabbit IgG antibody.

52. The method or the device of any one of claims 48-50, wherein the third reagent is an anti-mouse IgG antibody.

53. The method of claim 15 or the device of claim 16, which is a point of care test.

54. The device of claim 16, which is a cartridge.

55. The method of claim 15 or the device of claim 16, wherein the fluid sample is urine.

56. The method of claim 15 or the device of claim 16, wherein the prophylactic regimen is a PrEP to NRTI.

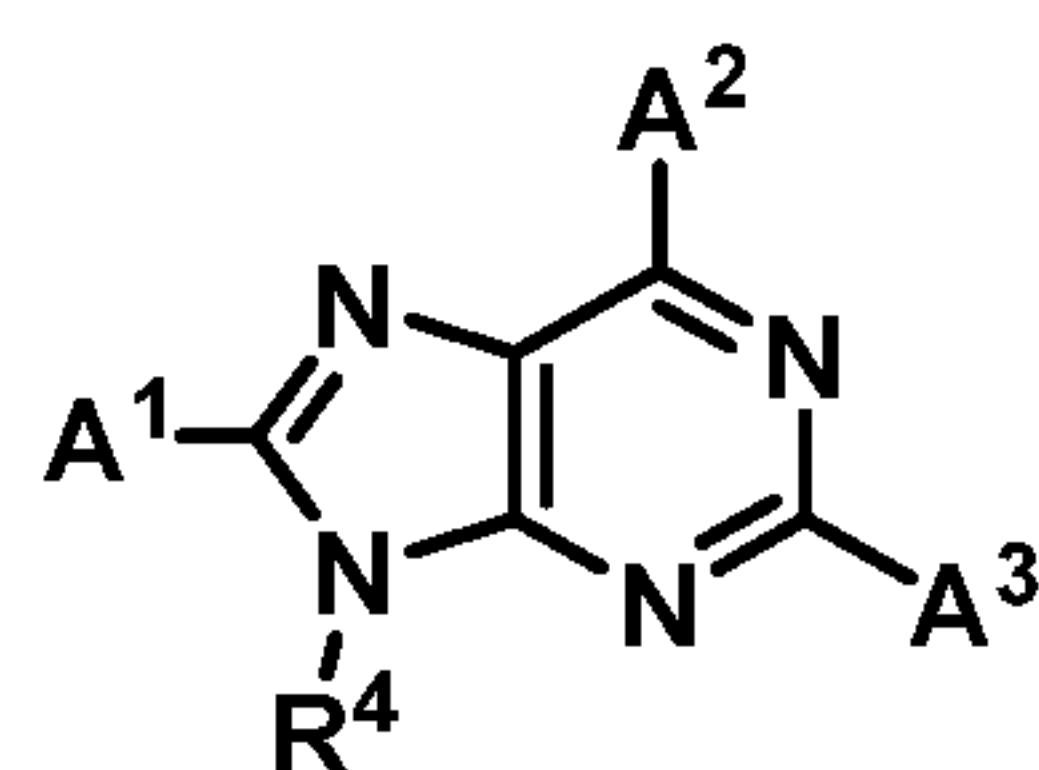
57. The method of claim 15 or the device of claim 16, wherein the NRTI is selected from the group consisting of TDF, FTC, and TAF, or derivatives thereof or combinations thereof.

58. The method or the device of claim 57, wherein the NRTI is TAF.

59. The method or the device of claim 57, wherein the NRTI is TDF.

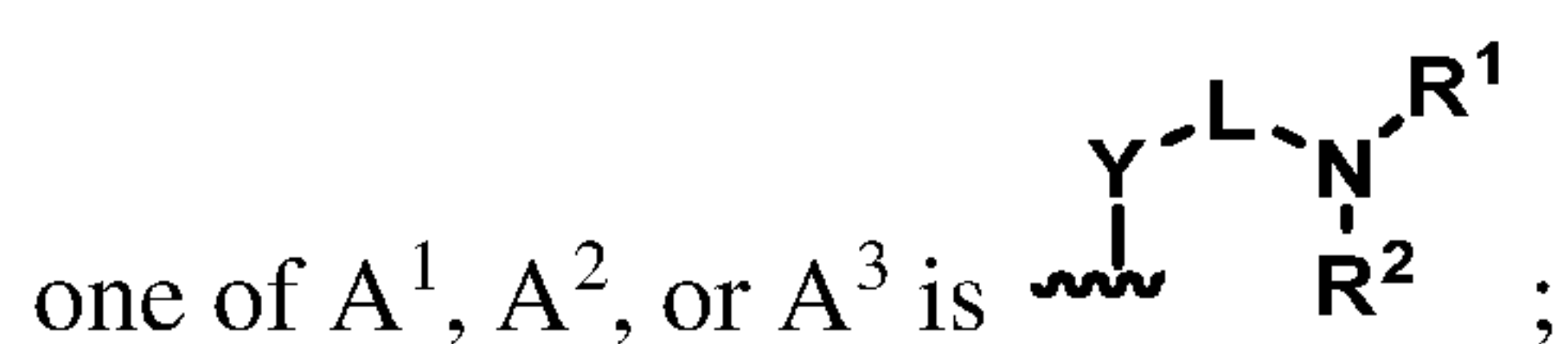
60. The method or the device of claim 57, wherein the NRTI is FTC.

61. The method or the device of claim 57, wherein the NRTI is a combination of TDF/FTC.
62. The method or the device of claim 57, wherein the NRTI is a combination of TAF/FTC.
63. A kit, comprising:  
 (a) a sample collection receptacle for receiving a biological sample; and  
 (b) the device of claim 16 for assaying the biological sample;
64. The kit of claim 63 further comprising instructions for use.
65. The kit of claim 63 further comprising a hand held device.
66. The kit of claim 65, wherein the hand held device is a reader.
67. The kit of claim 66, wherein the reader is adapted to receive the device of claim 35.
68. The kit of claim 67, wherein the reader is a reflectance reader.
69. The kit of claim 69, wherein the biological sample is urine.
70. A compound having a structure according to Formula (I):



(I)

or a pharmaceutically acceptable salt thereof, wherein:



two of  $A^1$ ,  $A^2$ , and  $A^3$  are hydrogen or  $NH_2$ ;

Y is a bond,  $NR^3$ , O, or S;

L is  $C_1$ – $C_{12}$ -alkylene,  $C_3$ – $C_7$ -cycloalkylene,  $C_3$ – $C_7$ -heterocyclene, arylene, or heteroarylene, each of which can be optionally substituted by one or more substituents selected from  $=O$ ,  $-OH$ ,  $-SH$ ,  $-NO_2$ ,  $-CN$ ,  $-C_1$ – $C_4$ -alkyl,  $-C_1$ – $C_4$ -haloalkyl,  $C_3$ – $C_7$ -cycloalkyl,  $C_3$ – $C_7$ -heterocyclyl, aryl, heteroaryl,  $-OR^5$ ,  $-NR^6R^7$ , or  $-C(O)X^1$ ;

$R^1$ ,  $R^2$ ,  $R^3$ , and  $R^4$  are each independently hydrogen,  $C_1$ – $C_6$ -alkyl,  $C_1$ – $C_6$ -haloalkyl,  $C_3$ – $C_7$ -cycloalkyl,  $C_3$ – $C_7$ -heterocyclyl, aryl, aralkyl, heteroaryl, heteroaralkyl, wherein each of  $C_1$ – $C_6$ -alkyl,  $C_1$ – $C_6$ -haloalkyl,  $C_3$ – $C_7$ -cycloalkyl,  $C_3$ – $C_7$ -heterocyclyl, aryl, aralkyl, heteroaryl, heteroaralkyl can be optionally substituted with one or more substituents selected from halogen  $=O$ ,  $-OH$ ,  $-SH$ ,  $-NO_2$ ,  $-CN$ ,  $-C_1$ – $C_4$ -alkyl,  $-C_1$ – $C_4$ -haloalkyl,  $C_3$ – $C_7$ -cycloalkyl,  $C_3$ – $C_7$ -heterocyclyl, aryl, heteroaryl,  $-OR^5$ ,  $-NR^6R^7$ , or  $-C(O)X^2$ ;

$R^5$ ,  $R^8$ , and  $R^{11}$  are each independently  $C_1$ – $C_6$ -alkyl, aryl, aralkyl, heteroaryl,  $C_0$ – $C_4$ -alkyl- $P(O)(OH)_2$ , or  $-C(O)X^4$ ;

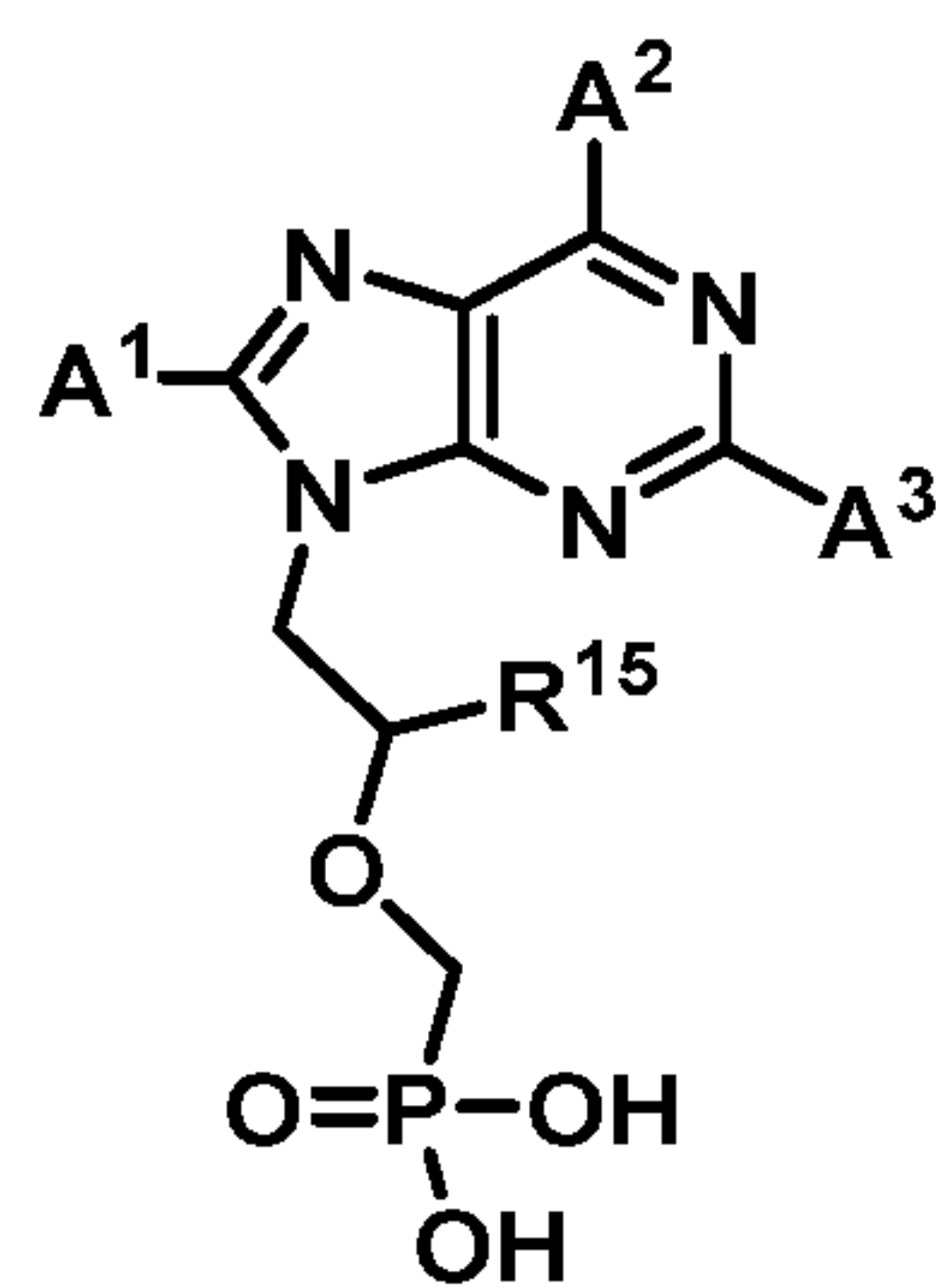
$R^6$ ,  $R^7$ ,  $R^9$ ,  $R^{10}$ ,  $R^{12}$ , and  $R^{13}$  are each independently hydrogen,  $C_1$ – $C_6$ -alkyl, aryl, aralkyl, heteroaryl, or  $-C(O)X^5$ ; or

$R^6$  and  $R^7$ ,  $R^9$  and  $R^{10}$ , and  $R^{12}$  and  $R^{13}$ , together with the atoms to which they are attached, independently form a 3- to 7-membered ring, which can be optionally substituted by one or more substituents selected from halogen  $=O$ ,  $-OH$ ,  $-SH$ ,  $-NO_2$ ,  $-CN$ ,  $-C_1$ – $C_4$ -alkyl,  $-C_1$ – $C_4$ -haloalkyl,  $C_3$ – $C_7$ -cycloalkyl,  $C_3$ – $C_7$ -heterocyclyl, aryl, heteroaryl,  $-OR^{11}$ ,  $-NR^{12}R^{13}$ , or  $-C(O)X^6$ ; and

$X^1$ ,  $X^2$ ,  $X^3$ ,  $X^4$ ,  $X^5$ , and  $X^6$  are each, independently hydrogen,  $C_1$ – $C_6$ -alkyl,  $C_1$ – $C_6$ -haloalkyl,  $C_2$ – $C_6$ -alkenyl,  $C_2$ – $C_6$ -alkynyl, aryl, aralkyl, or heteroaryl;

wherein each of the optional substituents independently may be further substituted by one or more substituents selected from  $=O$ ,  $-OH$ ,  $-SH$ ,  $-NO_2$ ,  $-CN$ ,  $-C_1$ – $C_4$ -alkyl,  $-C_1$ – $C_4$ -haloalkyl,  $C_3$ – $C_7$ -cycloalkyl,  $C_3$ – $C_7$ -heterocyclyl, aryl, heteroaryl,  $-OR^8$ ,  $-NR^9R^{10}$ , and  $-C(O)X^3$ .

71. The compound of claim 1, having a structure according to Formula (II):

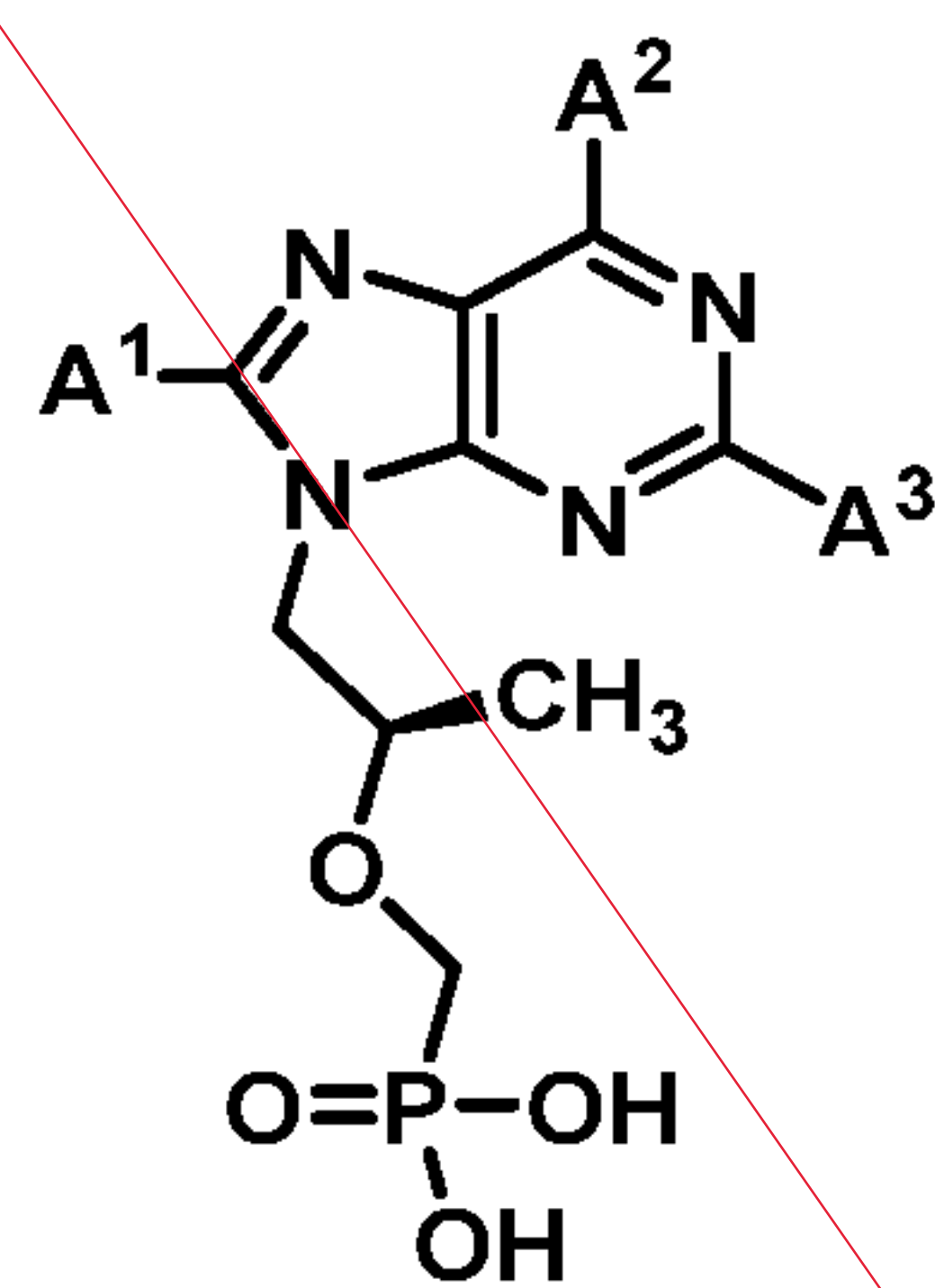


(II)

or a pharmaceutically acceptable salt thereof, wherein R<sup>15</sup> is C<sub>1</sub>–C<sub>4</sub>-alkyl.

72. The compound of claim 71, wherein R<sup>15</sup> is methyl.

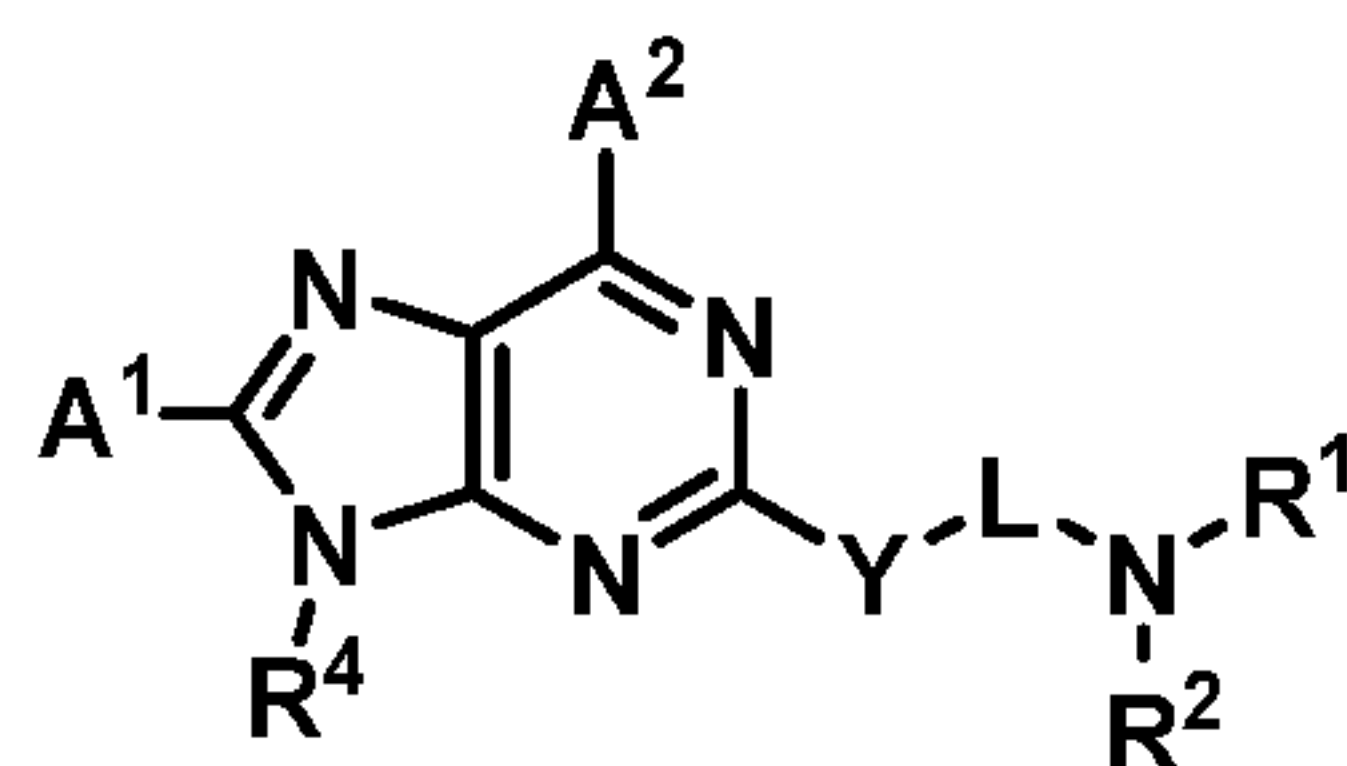
73. The compound of any one of claims 70-72, having a structure according to Formula (IIa):



(IIa)

or a pharmaceutically acceptable salt thereof.

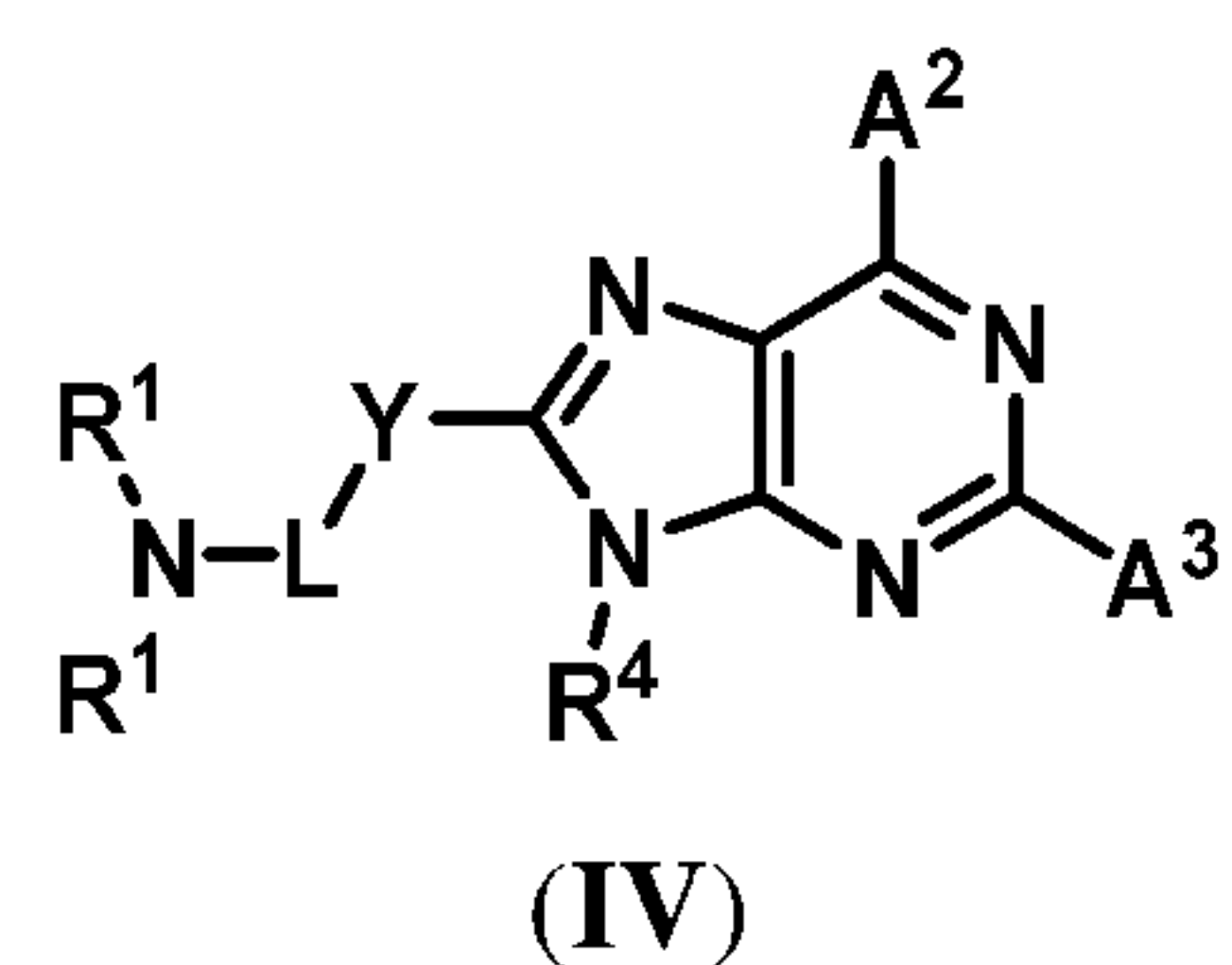
74. The compound of any one of claims 70-73, having a structure according to Formula (III):



(III)

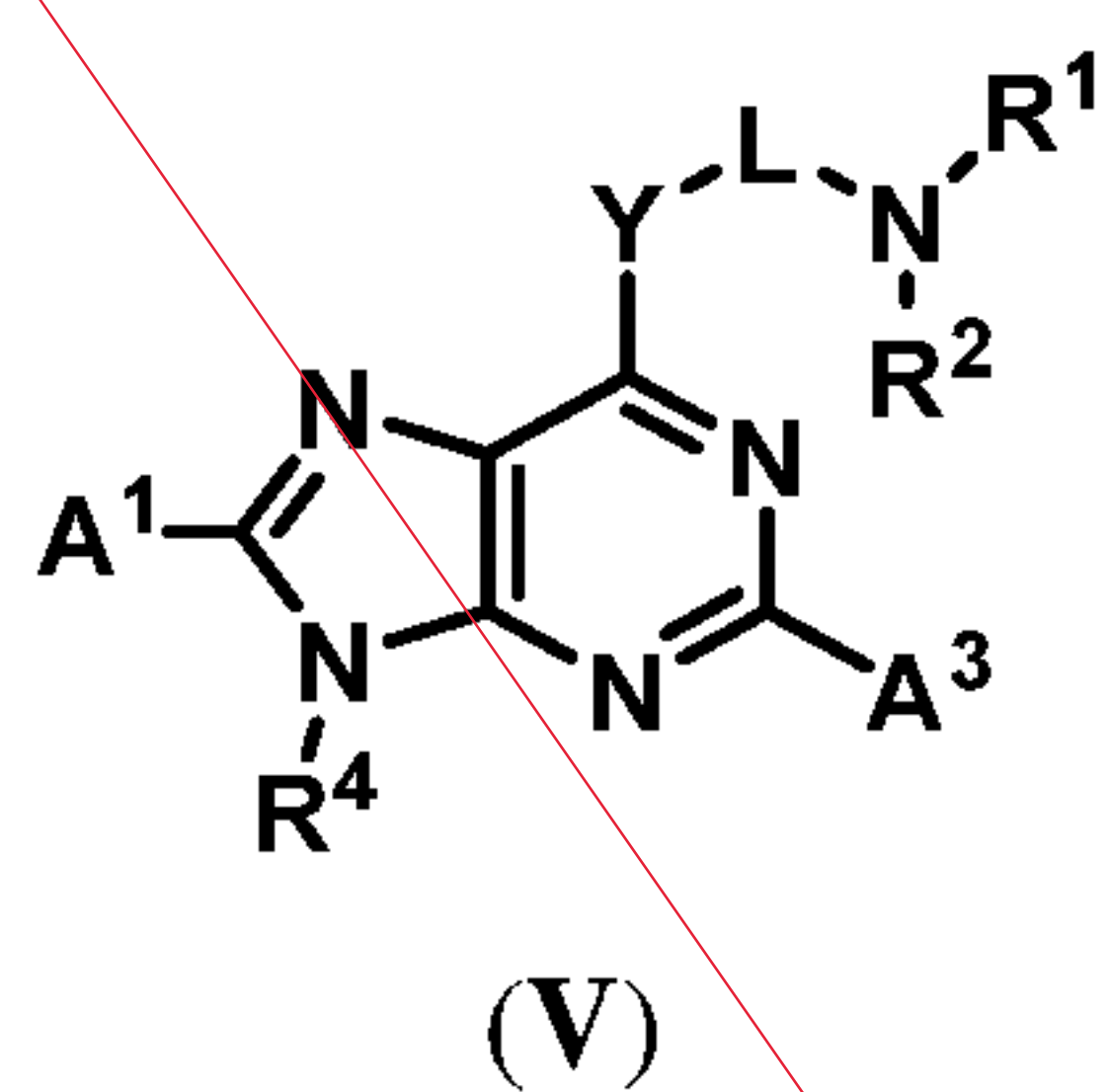
or a pharmaceutically acceptable salt thereof.

75. The compound of any one of claims 70-73, having a structure according to Formula (IV):



or a pharmaceutically acceptable salt thereof.

76. The compound of any one of claims 70-73, having a structure according to Formula (V):



or a pharmaceutically acceptable salt thereof.

77. The compound of any one of claims 70-76, or a pharmaceutically acceptable salt thereof, wherein Y is NR³.

78. The compound of claim 77, or a pharmaceutically acceptable salt thereof, wherein R³ is hydrogen.

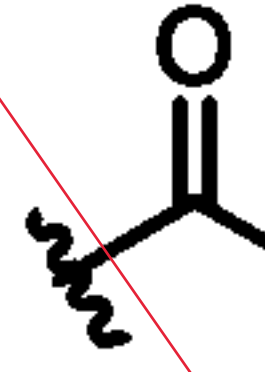
79. The compound of any one of claims 70-78, or a pharmaceutically acceptable salt thereof, wherein L is (CH₂)<sub>n</sub>, wherein n is 1 to 6.

80. The compound of claim 79, wherein n is 2.

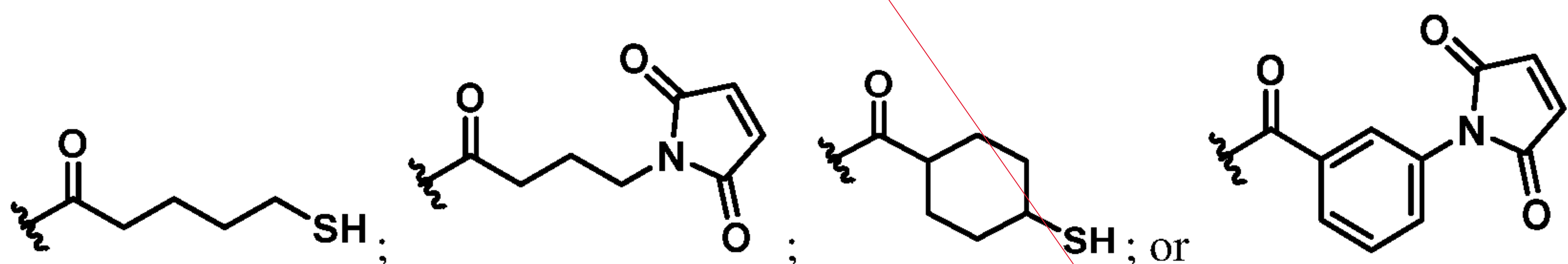
81. The compound of any one of claims 70-80, or a pharmaceutically acceptable salt thereof, wherein  $R^1$  is  $C_1$ – $C_6$ -alkyl optionally substituted with one or more substituents selected from halogen =O, -OH, -SH,  $C_3$ – $C_7$ -cycloalkyl,  $C_3$ – $C_7$ -heterocyclyl, aryl, and heteroaryl.

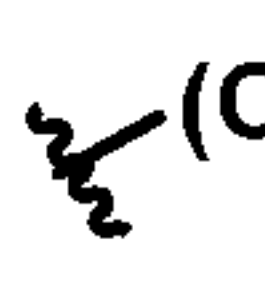
82. The compound of claim 81, or a pharmaceutically acceptable salt thereof, wherein each of the optional substituents independently may be further substituted by one or more substituents selected from -OH, -SH,  $C_1$ – $C_4$ -alkyl,  $C_3$ – $C_7$ -cycloalkyl,  $C_3$ – $C_7$ -heterocyclyl, aryl, and heteroaryl.

83. The compound of any one of claims 70-82, or a pharmaceutically acceptable

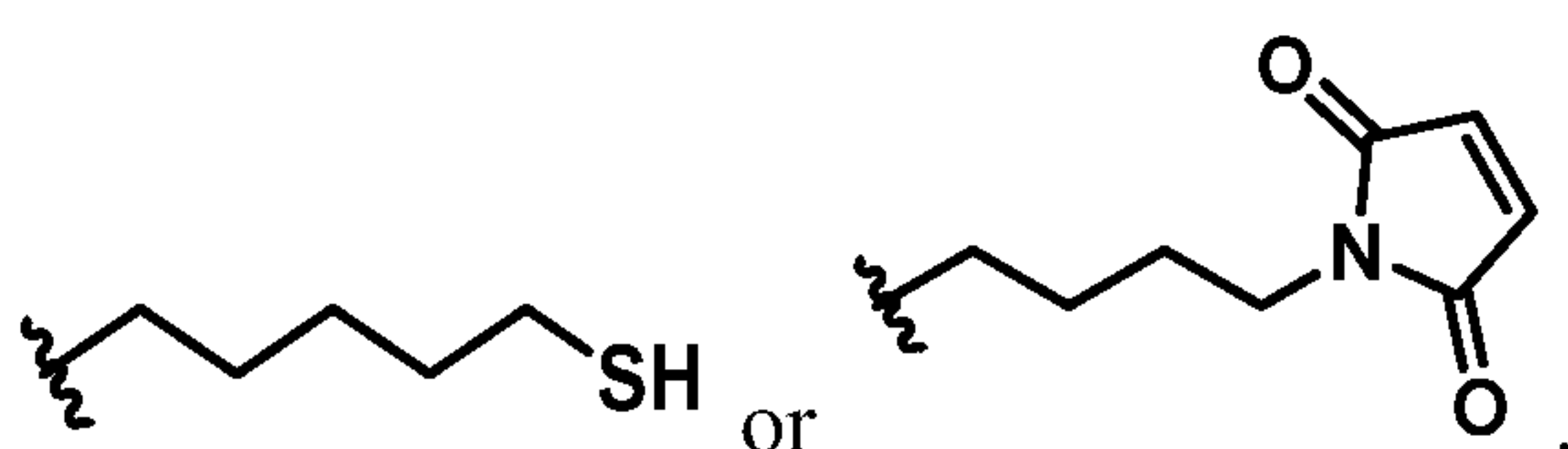
salt thereof, wherein  $R^1$  is   $R^{16}$ , wherein  $R^{16}$  is  $C_1$ – $C_6$ -alkyl,  $C_3$ – $C_7$ -cycloalkyl, or aryl, each of which may be optionally substituted by -SH,  $C_3$ – $C_7$ -cycloalkyl,  $C_3$ – $C_7$ -heterocyclyl, aryl, or heteroaryl.

84. The compound of any one of claims 70-83, or a pharmaceutically acceptable salt thereof, wherein  $R^1$  is

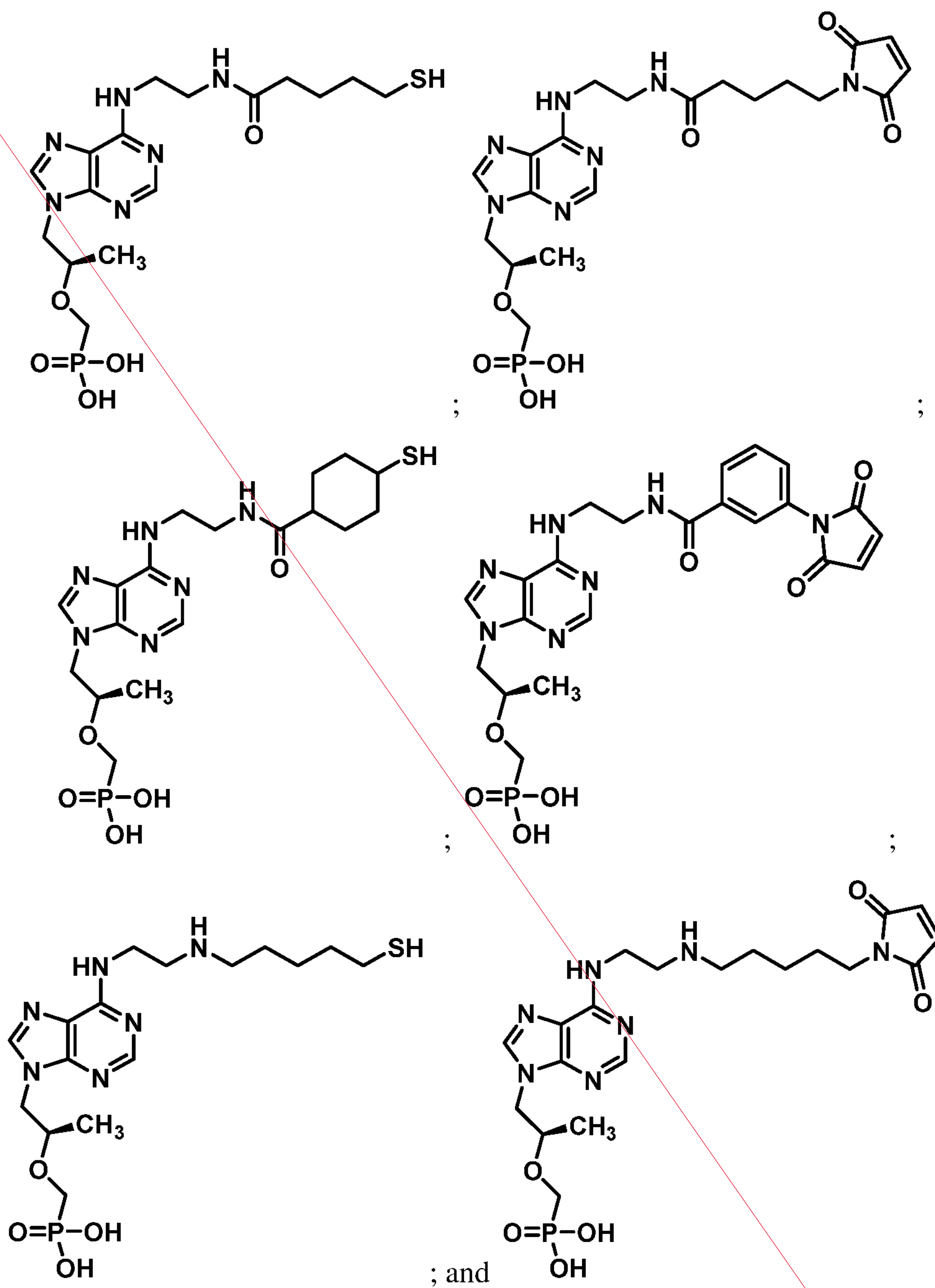


85. The compound of any one of claims 70-82, or a pharmaceutically acceptable salt thereof, wherein  $R^1$  is   $(CH_2)_m-R^{17}$ , wherein m is 1 to 6; and  $R^{17}$  is  $C_3$ – $C_7$ -cycloalkyl,  $C_3$ – $C_7$ -heterocyclyl, aryl, or heteroaryl.

86. The compound of any one of claims of any one of claims 70-82 and 85, or a pharmaceutically acceptable salt thereof, wherein  $R^1$  is

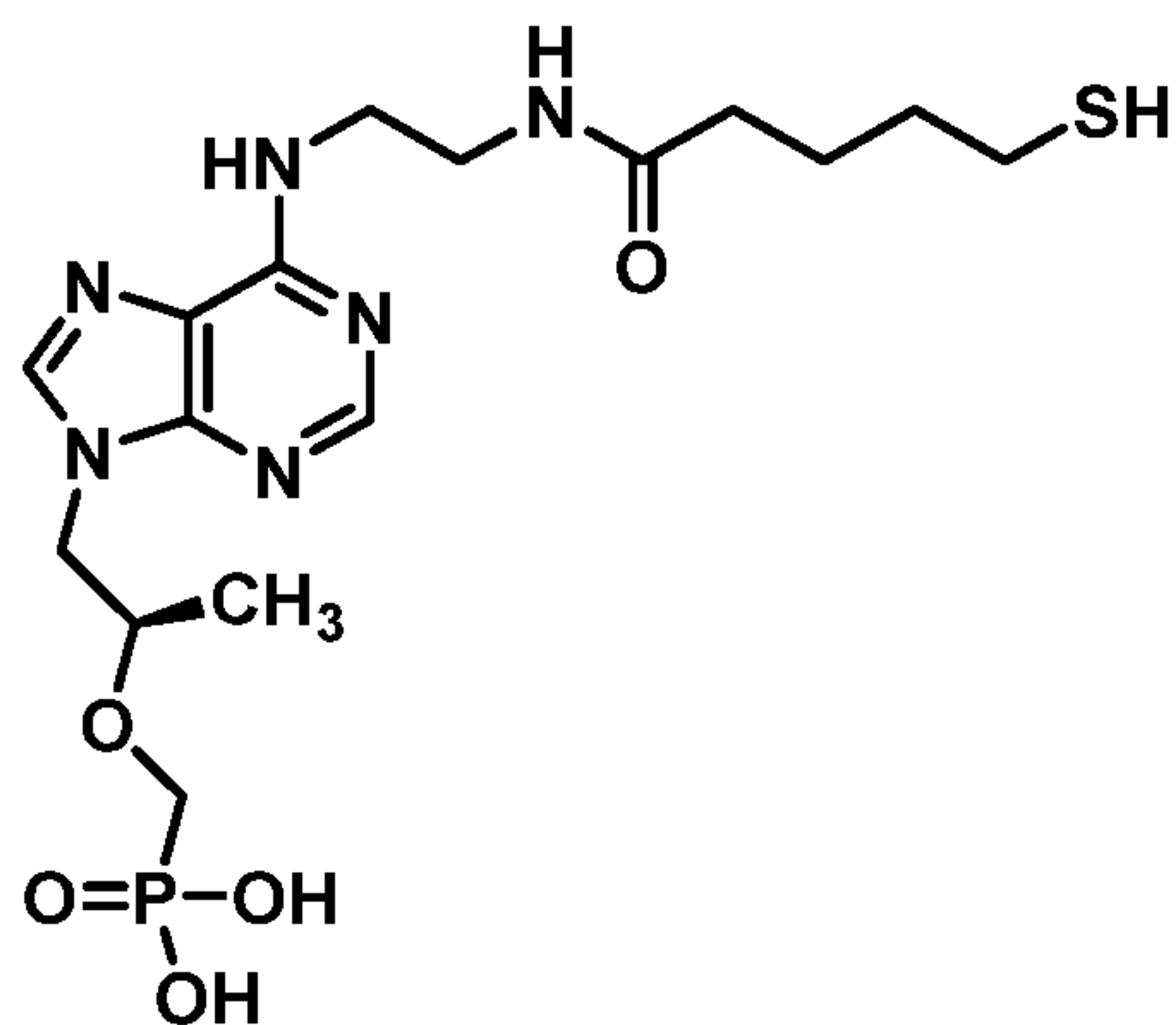


87. A compound selected from:



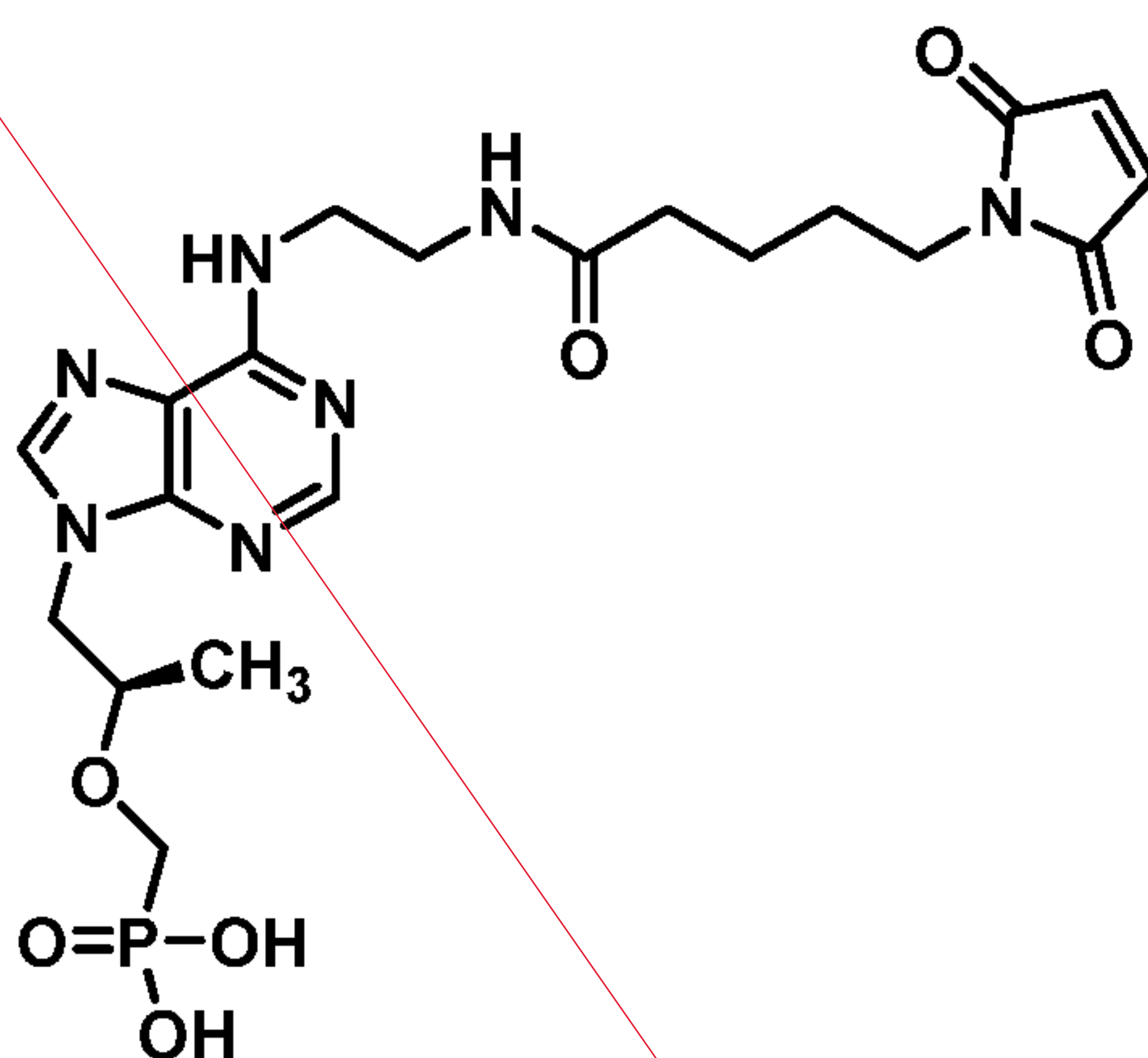
or a pharmaceutically acceptable salt thereof.

88. The compound of claim 87, wherein the compound is:



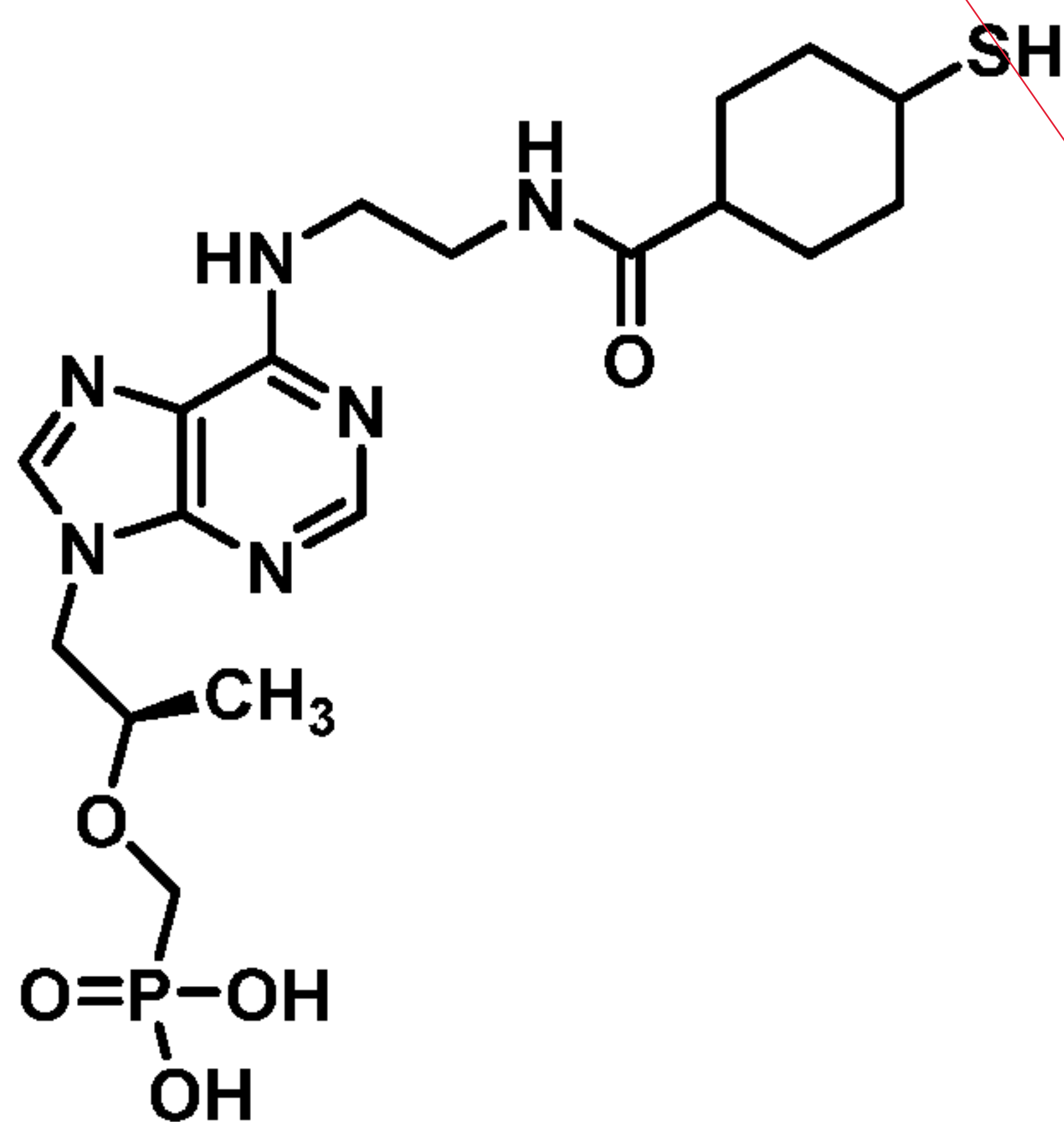
or a pharmaceutically acceptable salt thereof.

89. The compound of claim 87, wherein the compound is:



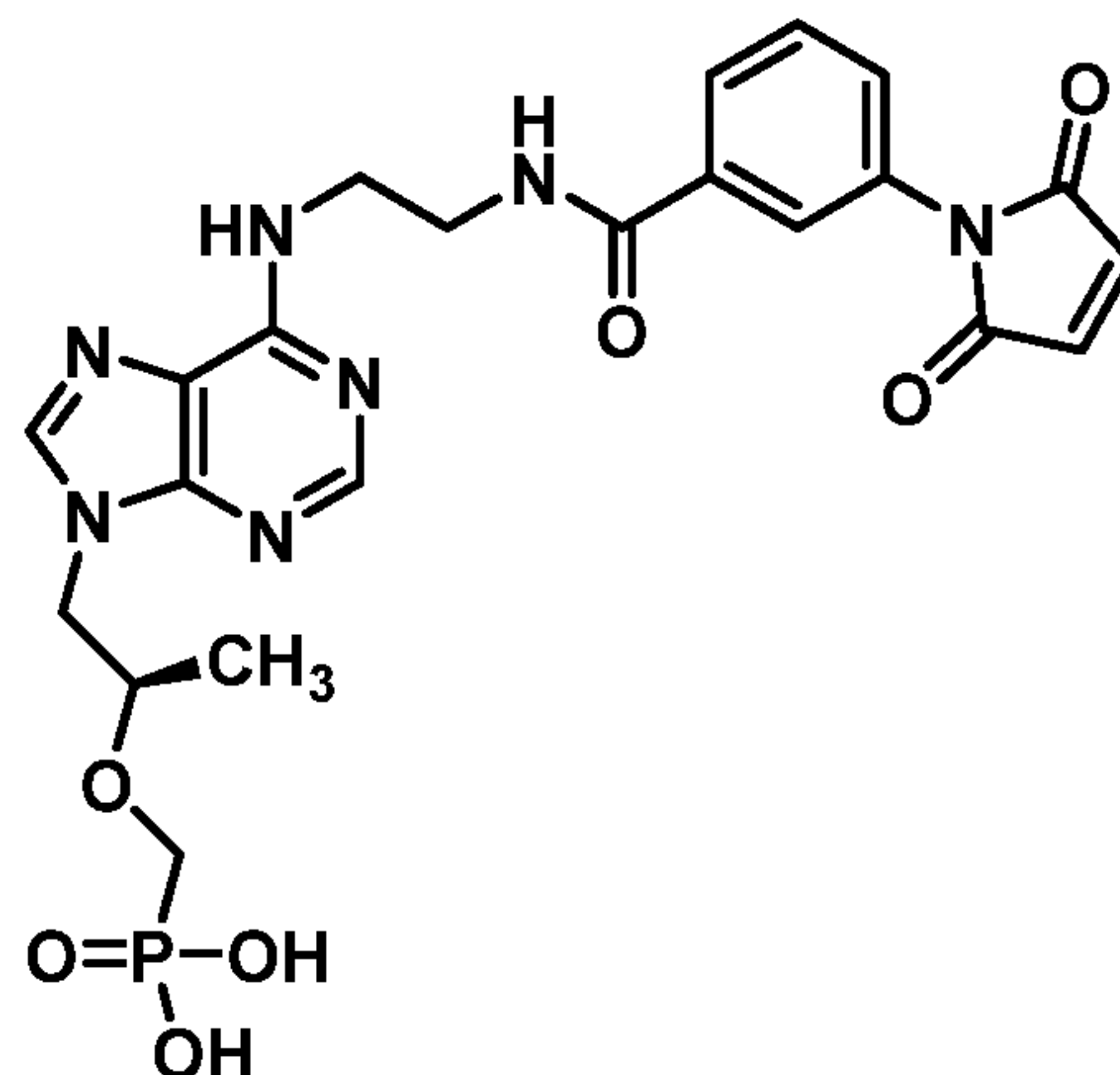
or a pharmaceutically acceptable salt thereof.

90. The compound of claim 87, wherein the compound is:



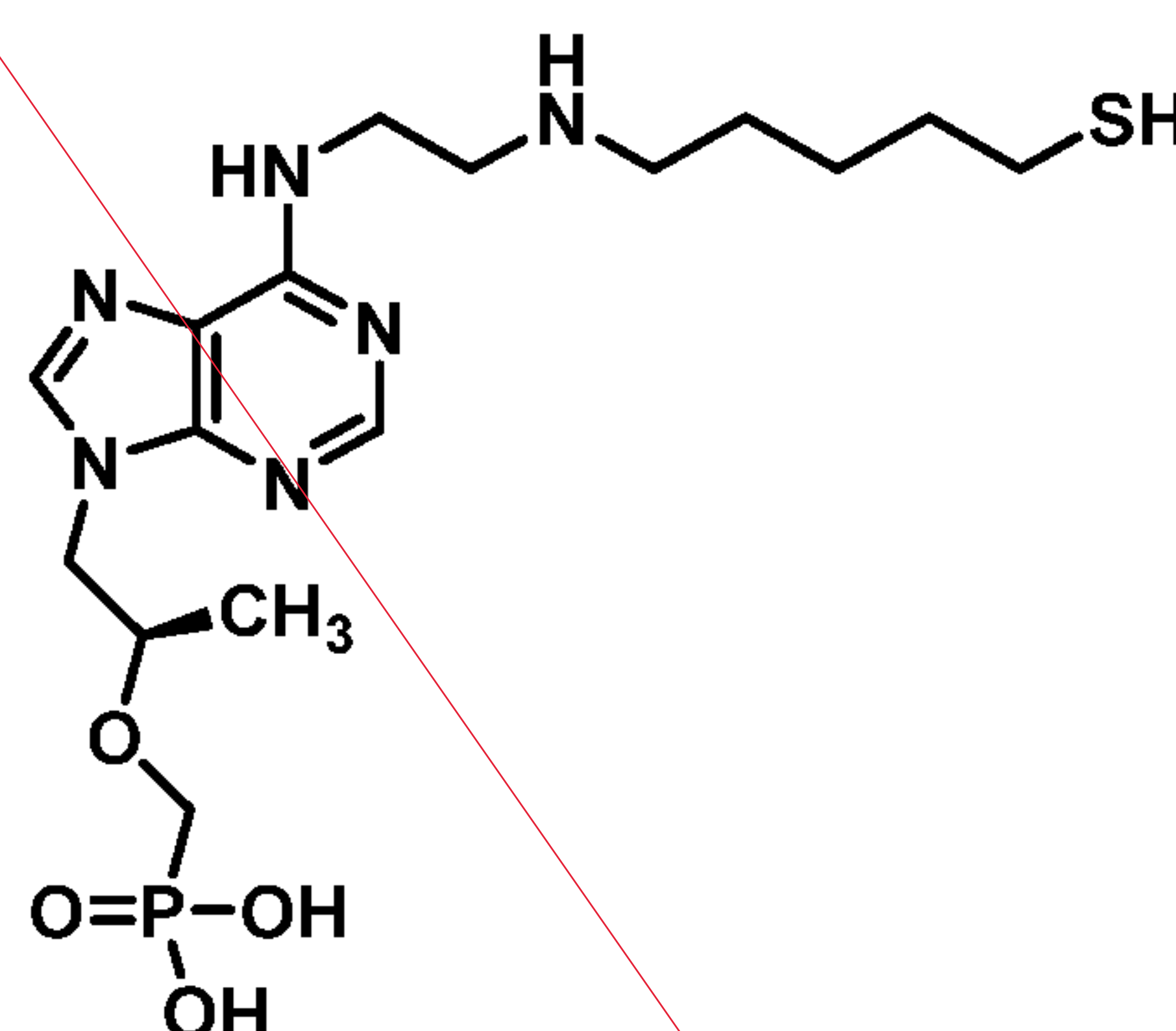
or a pharmaceutically acceptable salt thereof.

91. The compound of claim 87, wherein the compound is:



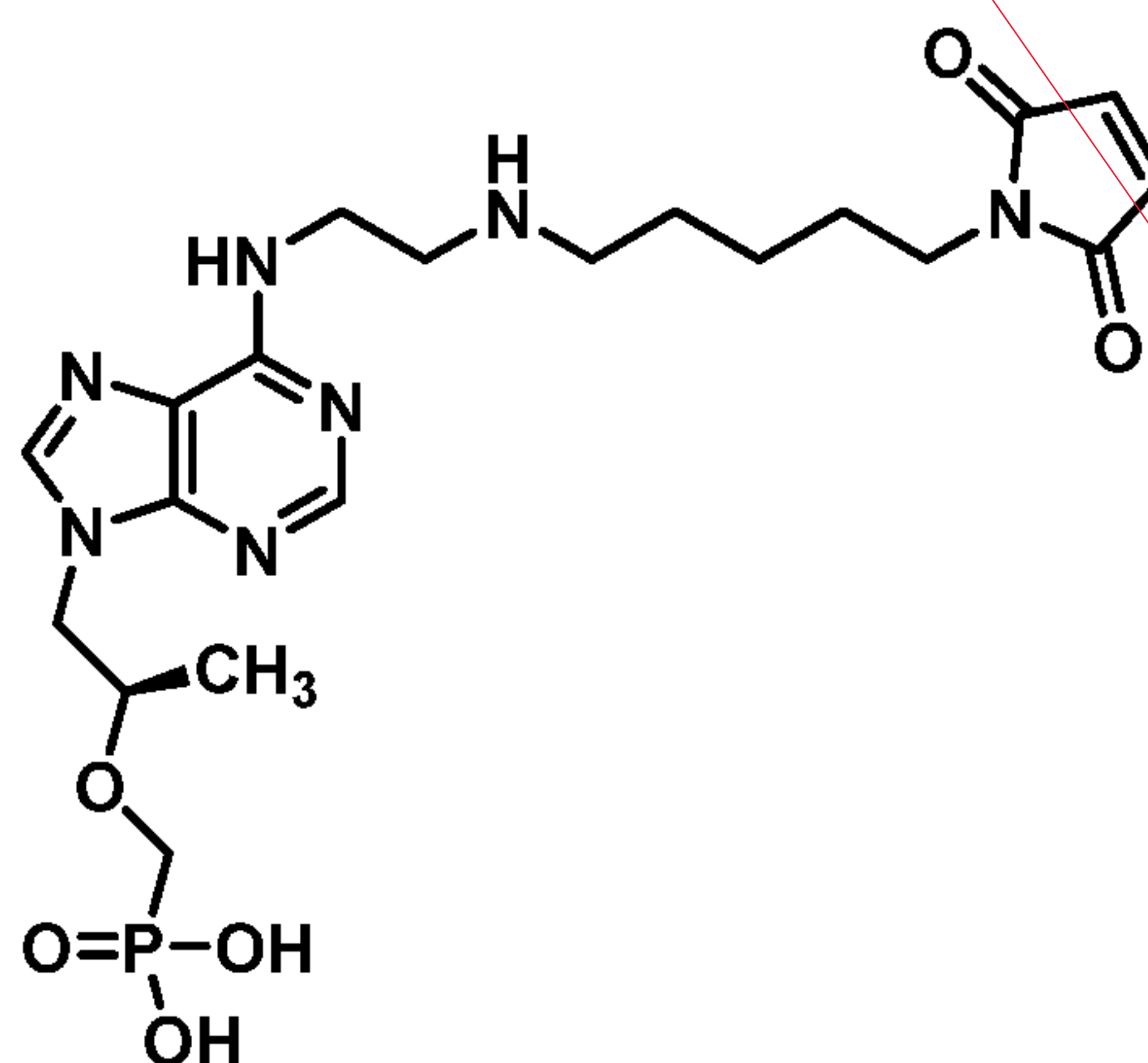
or a pharmaceutically acceptable salt thereof.

92. The compound of claim 87, wherein the compound is:



or a pharmaceutically acceptable salt thereof.

93. The compound of claim 87, wherein the compound is:



or a pharmaceutically acceptable salt thereof.

94. An immunogenic composition comprising : (a) a compound of any one of

claims 70-93 conjugated to (b) a carrier protein through a linker.

95. The immunogenic composition of claim 94, wherein the linker covalently binds an active residue on the carrier protein (*e.g.*, a cysteine or lysine) with the compound.

96. The immunogenic composition of claim 94, wherein the carrier protein is selected from the group consisting of tetanus toxoid (TT), diphtheria toxoid (DT), diphtheria toxin cross-reacting material 197 (CRM197), fragment C of TT, Keyhole limpet hemocyanin (KLH), bovine serum albumin (BSA), protein D, outer-membrane protein (OMP), and pneumolysin.

97. The immunogenic composition of claim 96, wherein the carrier protein is KLH.

98. The immunogenic composition of claim 96, wherein the carrier protein is BSA.

99. A polyclonal antibody raised against the immunogenic composition of any one of claims 94-98.

100. A monoclonal antibody raised against the immunogenic composition of any one of claims 94-98.

101. The monoclonal antibody of claim 100, wherein the antibody is the antibody of any one of claims 1-4.

102. A polyclonal antibody that selectively binds to the compounds of any one of claims 70-93, or the immunogenic composition of any one of claims 94-98.

103. A monoclonal antibody that selectively binds to the compounds of any one of

claims 70-93, or the immunogenic composition of any one of claims 94-98.

104. The monoclonal antibody of claim 103, wherein the antibody is the antibody of any one of claims 1-4.

## CLAIMS

### What is claimed is:

1. An isolated antibody that specifically binds to tenofovir, wherein the antibody comprises:
  - (1) immunoglobulin variable light chain CDRs according to SEQ ID NOs: 17, 25, and 33, respectively, and immunoglobulin variable heavy chain CDRs according to SEQ ID NOs: 18, 26, and 34, respectively;
  - (2) immunoglobulin variable light chain CDRs according to SEQ ID NOs: 19, 27, and 35, respectively, and immunoglobulin variable heavy chain CDRs according to SEQ ID NOs: 20, 28, 36, respectively;
  - (3) immunoglobulin variable light chain CDRs according to SEQ ID NOs: 21, 29, and 37, respectively, and immunoglobulin variable heavy chain CDRs according to SEQ ID NOs: 22, 30, 38, respectively; or
  - (4) immunoglobulin variable light chain CDRs according to SEQ ID NOs: 23, 31, and 39, respectively, and immunoglobulin variable heavy chain CDRs according to SEQ ID NOs: 24, 32, and 40, respectively.
2. The isolated antibody of claim 1, wherein the antibody comprises an immunoglobulin variable light chain region comprising an amino acid sequence of SEQ ID NO: 41 and an immunoglobulin variable heavy chain region comprising an amino acid sequence of SEQ ID NO: 42.
3. An isolated nucleic acid molecule encoding the antibody of claim 1, wherein the isolated nucleic acid is selected from the group consisting of a cloning vector, an expression vector, a heterologous recombination vector and a viral integration vector.
4. A cell transformed with the isolated nucleic acid of claim 3, wherein the cell is selected from the group consisting of rabbit, hamster, mouse, rat, chicken, goat, monkey, sheep, pig, horse, cow, and human.
5. A method of detecting tenofovir in a biological fluid sample of a subject, comprising contacting the antibody of claim 1 with a biological fluid sample from the subject.

6. A method for performing a lateral flow assay to detect tenofovir in a fluid sample, the method comprising the steps of:
- (a) applying the fluid sample to a sample pad;
  - (b) allowing the sample to flow laterally along the sample pad to a conjugated label pad that is in fluid communication with the sample pad and comprises a labeled first reagent specific for tenofovir, wherein a portion of the conjugated label pad and a portion of the sample pad forms a first interface;
  - (c) allowing the labeled first reagent to bind tenofovir, if present in the fluid sample, to form a labeled first reagent-tenofovir complex;
  - (d) allowing the sample to flow laterally along the conjugated label pad to a membrane that is in fluid communication with the conjugated label pad, wherein a portion of the conjugated label pad and a portion of the membrane forms a second interface, wherein the membrane comprises a second reagent bound to the membrane to form a test line, and wherein the second reagent can bind the labeled first reagent;
  - (e) allowing the labeled first reagent to bind to the second reagent to form a labeled first reagent-second reagent complex at the test line; and
  - (f) detecting the label at the test line,
- wherein the first reagent is an antibody comprising:
- (1) immunoglobulin variable light chain CDRs according to SEQ ID NOs: 17, 25, and 33, respectively, and immunoglobulin variable heavy chain CDRs according to SEQ ID NOs: 18, 26, and 34, respectively;
  - (2) immunoglobulin variable light chain CDRs according to SEQ ID NOs: 19, 27, and 35, respectively, and immunoglobulin variable heavy chain CDRs according to SEQ ID NOs: 20, 28, 36, respectively;
  - (3) immunoglobulin variable light chain CDRs according to SEQ ID NOs: 21, 29, and 37, respectively, and immunoglobulin variable heavy chain CDRs according to SEQ ID NOs: 22, 30, 38, respectively; or
  - (4) immunoglobulin variable light chain CDRs according to SEQ ID NOs: 23, 31, and 39, respectively, and immunoglobulin variable heavy chain CDRs according to SEQ ID NOs: 24, 32, and 40, respectively.

7. The method of claim 6, wherein the membrane is nitrocellulose.
8. The method of claim 6, wherein the membrane further comprises a third reagent bound to the membrane downstream or upstream of the test line to form a control line.
9. The method of claim 8, wherein the third reagent binds to the labeled first reagent to cause the label to form a detectable signal at the control line, wherein the presence of the detectable signal at the control line indicates proper performance of the lateral-flow assay.
10. The method of claim 6, comprising the steps of:
  - (a) applying the fluid sample to a sample pad;
  - (b) allowing the sample to flow laterally along the sample pad to a conjugated label pad that is in fluid communication with the sample pad and comprises a labeled first reagent specific for tenofovir, wherein a portion of the conjugated label pad and a portion of the sample pad forms a first interface;
  - (c) allowing the labeled first reagent to bind tenofovir, if present in the fluid sample, to form a labeled first reagent-tenofovir complex;
  - (d) allowing the sample to flow laterally along the conjugated label pad to a membrane that is in fluid communication with the conjugated label pad, wherein a portion of the conjugated label pad and a portion of the membrane forms a second interface, wherein the membrane comprises a second reagent bound to the membrane to form a test line, and wherein the second reagent is can bind the labeled first reagent when the labeled first reagent is not bound to tenofovir in the fluid sample; and
  - (e) if tenofovir is absent in the fluid sample, allowing the labeled first reagent to bind to the second reagent to form a labeled first reagent-second reagent complex at the test line, or if tenofovir is present in the fluid sample, allowing the labeled first reagent-tenofovir complex to flow past the test line without binding the second reagent; and
  - (f) detecting the labeled first reagent-second reagent at the test line, wherein detecting the detectable signal indicates the absence of tenofovir in the fluid sample.

11. The method of claim 6, wherein the fluid sample is a urine sample from a patient, wherein the patient is prescribed or administered tenofovir or a prodrug thereof.
12. The method of claim 6, wherein the antibody comprises immunoglobulin variable light chain CDRs according to SEQ ID NOs: 23, 31, 39, respectively, and immunoglobulin variable heavy chain CDRs according to SEQ ID NOs: 24, 32, 40, respectively.
13. The method of claim 12, wherein the antibody comprises an immunoglobulin variable light chain region according to SEQ ID NO: 41 and an immunoglobulin variable heavy chain region according to SEQ ID NO: 42.
14. A device for performing a lateral flow assay to detect tenofovir in a fluid sample, the device comprising:
- (a) a sample pad for receiving the fluid sample;
  - (b) a conjugated label pad located downstream of the sample pad comprising a labeled first reagent specific for tenofovir, wherein a portion of the conjugated label pad and a portion of the sample pad form a first interface;
  - (c) a membrane located downstream of the conjugated label pad, wherein a portion of the membrane and a portion of the conjugated label pad form a second interface; and
  - (d) a second reagent bound to the membrane to form a test line, wherein the second reagent is capable of binding the labeled first reagent,
- wherein the first interface allows the fluid sample to flow from the sample pad to the conjugated label pad and contact the labeled first reagent, and the second interface allows the fluid sample to flow from the conjugated label pad to the membrane and to contact the second reagent to form a labeled first reagent-second reagent complex and cause the label to form a detectable signal at the test line,
- wherein the first reagent is an antibody comprising:
- (1) immunoglobulin variable light chain CDRs according to SEQ ID NOs: 17, 25, and 33, respectively, and immunoglobulin variable heavy chain CDRs according to SEQ ID NOs: 18, 26, and 34, respectively;

(2) immunoglobulin variable light chain CDRs according to SEQ ID NOs: 19, 27, and 35, respectively, and immunoglobulin variable heavy chain CDRs according to SEQ ID NOs: 20, 28, 36, respectively;

(3) immunoglobulin variable light chain CDRs according to SEQ ID NOs: 21, 29, and 37, respectively, and immunoglobulin variable heavy chain CDRs according to SEQ ID NOs: 22, 30, 38, respectively; or

(4) immunoglobulin variable light chain CDRs according to SEQ ID NOs: 23, 31, and 39, respectively, and immunoglobulin variable heavy chain CDRs according to SEQ ID NOs: 24, 32, and 40, respectively.

15. The device of claim 14, wherein the membrane is nitrocellulose.

16. The device of claim 14, wherein the membrane further comprises a third reagent bound to the membrane downstream or upstream of the test line to form a control line.

17. The device of claim 16, wherein the third reagent binds to the labeled first reagent to cause a detectable signal at the control line, wherein the presence of the detectable signal at the control line indicates proper performance of the lateral-flow assay.

18. A kit, comprising:

- (a) a sample collection receptacle for receiving a biological sample; and
- (b) the device of claim 14 for assaying the biological sample.