

(I)

wherein

Z is O or NR^1;

each R^N is independently H or C_{1-6}alkyl;

R^1 is C_{5-8}carbocyclyl optionally substituted with C_{1-6}alkylene-C_{6-10}aryl, or 5- to 8-membered N-heterocycle, wherein the ring nitrogen is optionally substituted with COO-C_{1-6}alkyl;

R^2 is C_{1-6}alkylene-C_{6-10}aryl, wherein C_{1-6}alkylene is substituted with 1-3 R^7, and the aryl is optionally substituted with 1-2 substituents independently selected from halo, C_{1-6}alkoxy, C_{1-6}alkyl, C_{1-6}haloalkyl, C_{1-6}alkylene-C_{6-10}aryl, O-C_{1-6}alkylene-C_{6-10}aryl, and CO_2C_{1-6}alkyl;

(a) R^3 is C_{1-6}alkyl, C_{2-6}alkenyl, C_{2-6}alkynyl, C_{1-6}alkylene-C_{5-8}carbocyclyl, C_{0-6}alkylene-C_{6-10}aryl optionally substituted with 1-2 halo, or

(b) R^3 is methyl, isopropyl, isobutyl, sec-butyl, $CH_2CH_2SCH_3$, CH_2-indolyl, benzyl, CH_2OH, $CH(OH)CH_3$, CH_2SH, CH_2-(4-OH-phenyl), $CH_2C(O)NH_2$, $CH_2CH_2C(O)NH_2$, CH_2COOH, CH_2CH_2COOH, $CH_2CH_2CH_2CH_2NH_2$, $CH_2CH_2CH_2NHC(NH)NH_2$, or imidazolyl;

each R^4 is independently halo, OH, CN, C_{1-6}alkyl, C_{1-6}haloalkyl, C_{1-6}alkyl-OH, C_{2-6}alkenyl, C_{2-6}alkynyl, C_{1-6}alkoxy, C_{3-6}alkyloxyalkyl, oxo (=O), $NR^ASO_2R^B$, $SO_2NR^AR^B$, $COOR^A$, C_{0-4}alkylene-C_{6-10}aryl, C_{0-4}alkylene-(5-12 membered heteroaryl having 1-3 ring heteroatoms selected from N, O, and S), or C_{0-4}alkylene-(4-12 membered heterocycle having 1-3 ring heteroatoms selected from N, O, and S); and the aryl, heteroaryl, and heterocycle is optionally substituted with 1-2 substituents independently selected from halo, C_{1-6}alkyl, and COO-C_{1-6}alkyl, or

two R^4 with the carbon or carbons to which they are attached combine to form a spiro or fused 3-12 membered carbocyclic or heterocylic ring having 1-3 ring heteroatoms selected from N, O, and S, which is optionally substituted with 1-2 substituents independently selected from halo, C_{1-6}alkyl, C_{1-6}alkylene-O-C_{1-6}alkyl, C(O)-C_{1-6}alkyl, SO_2-C_{1-6}alkyl, C(O)-C_{1-6}alkyl, and COO-C_{1-6}alkyl;

R^5 is C_{1-6}alkylene-OH, C_{1-6}alkylene-OH substituted with $PO(OCH_2CH_2)_2$, C_{1-6}alkylene-OH substituted with SO_3H, -$[C(O)]_{1-2}$-(4-8 membered heterocycle having 1-3 ring heteroatoms selected from N, O, and S), -$[C(O)]_{1-2}$-NR^NR^N, C(O)-Y-H, or -$[C(O)]_{1-2}$-NR^N-Y-X-A, wherein A is H, C_{3-8}carbocyclyl, 4-12-membered heterocycle having 1-3 ring heteroatoms selected from N, O, and S, C_{6-10}aryl, or 5-8-membered heteroaryl having 1-3 ring heteroatoms selected from N, O, and S, and the carbocyclyl, heterocyclyl, aryl, or heteroaryl is optionally substituted with 1-2 substituents independently selected from halo, C_{1-6}alkyl, and COO-C_{1-6}alkyl;

Y is a bond, C_{1-6}alkylene, C_{1-6}alkylene-O-C_{1-6}alkylene, or C_{1-6}alkenylene, wherein C_{1-6}alkylene and C_{1-6}alkenylene are optionally substituted with 1-3 substituents independently selected from halo, OH, NR^NR^N, and C_{1-6}alkoxy;

X is a bond, NR^NR^N, C(O), SO_2, or OC(O);

each R^6 is independently H, C_{1-6}alkylene-OH, C_{1-6}alkylene-OH substituted with $PO(OCH_2CH_2)_2$, C_{1-6}alkylene-OH substituted with SO_3H, CHO, or C(O)-(4-8 membered heterocycle having 1-3 ring heteroatoms selected from N, O,

and S);

each R^7 is independently halo, C_{1-6}haloalkyl, C_{2-6}alkenyl, C_{3-5}carbocycyl, or C_{0-6}alkylene-C_{6-10}aryl, and C_{6-10}aryl is optionally substituted with 1-2 halo, or

two R^7 on the same or adjacent carbon atoms together with the carbon or carbons to which they are attached combine to form a C_{3-6}carbocyclyl ring;

R^A and R^B are each independently H, C_{1-6}alkyl, C_{1-6}haloalkyl, C_{1-6}alkoxy, C_{2-6}alkenyl, C_{2-6}alkynyl, C_{3-6}cycloalkyl, C_{0-6}alkylene-C_{6-10}aryl, C_{0-6}alkylene-5-8 membered heteroaryl having 1-3 ring heteroatoms selected from N, O, and S;

n is 0-3; and

o is 0-5.

[0005b] In another aspect of the present disclosure, there is provided a pharmaceutical formulation comprising the compound or salt disclosed herein and a pharmaceutically acceptable excipient.

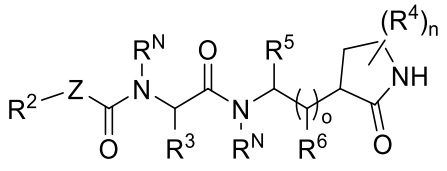
[0005c] In a further aspect of the present disclosure, there is provided a use of the compound or salt disclosed herein in the manufacture of a medicament for treating or preventing a viral infection in a host.

[0005d] In another aspect of the present disclosure, there is provided a compound or salt disclosed herein, for use in therapy.

[0006] The present disclosure generally relates to methods of treating norovirus and coronavirus infections, to methods of inhibiting the replication of noroviruses and coronaviruses, to methods of reducing the amount of noroviruses and coronaviruses, and to compounds and compositions that can be employed for such methods.

What is claimed is:

1. A compound having a structure of Formula (I), or a pharmaceutically acceptable salt thereof:



(I)

wherein

Z is O or NR^1;

each R^N is independently H or C_{1-6}alkyl;

R^1 is C_{5-8}carbocyclyl optionally substituted with C_{1-6}alkylene-C_{6-10}aryl, or 5- to 8-membered N-heterocycle, wherein the ring nitrogen is optionally substituted with COO-C_{1-6}alkyl;

R^2 is C_{1-6}alkylene-C_{6-10}aryl, wherein C_{1-6}alkylene is substituted with 1-3 R^7, and the aryl is optionally substituted with 1-2 substituents independently selected from halo, C_{1-6}alkoxy, C_{1-6}alkyl, C_{1-6}haloalkyl, C_{1-6}alkylene-C_{6-10}aryl, O-C_{1-6}alkylene-C_{6-10}aryl, and CO_2C_{1-6}alkyl;

(a) R^3 is C_{1-6}alkyl, C_{2-6}alkenyl, C_{2-6}alkynyl, C_{1-6}alkylene-C_{5-8}carbocyclyl, C_{0-6}alkylene-C_{6-10}aryl optionally substituted with 1-2 halo, or

(b) R^3 is methyl, isopropyl, isobutyl, sec-butyl, $CH_2CH_2SCH_3$, CH_2-indolyl, benzyl, CH_2OH, $CH(OH)CH_3$, CH_2SH, CH_2-(4-OH-phenyl), $CH_2C(O)NH_2$, $CH_2CH_2C(O)NH_2$, CH_2COOH, CH_2CH_2COOH, $CH_2CH_2CH_2CH_2NH_2$, $CH_2CH_2CH_2NHC(NH)NH_2$, or imidazolyl;

each R^4 is independently halo, OH, CN, C_{1-6}alkyl, C_{1-6}haloalkyl, C_{1-6}alkyl-OH, C_{2-6}alkenyl, C_{2-6}alkynyl, C_{1-6}alkoxy, C_{3-6}alkyloxyalkyl, oxo (=O), $NR^ASO_2R^B$, $SO_2NR^AR^B$, $COOR^A$, C_{0-4}alkylene-C_{6-10}aryl, C_{0-4}alkylene-(5-12 membered heteroaryl having 1-3 ring heteroatoms selected from N, O, and S), or C_{0-4}alkylene-(4-12 membered heterocycle having 1-3 ring heteroatoms selected from N, O, and S); and the aryl, heteroaryl, and heterocycle is optionally substituted with 1-2 substituents independently selected from halo, C_{1-6}alkyl, and COO-C_{1-6}alkyl, or

two R^4 with the carbon or carbons to which they are attached combine to form a spiro or fused 3-12 membered carbocyclic or heterocylic ring having 1-3 ring heteroatoms selected from N, O, and S, which is optionally substituted with 1-2 substituents independently selected from halo, C_{1-6}alkyl, C_{1-6}alkylene-O-C_{1-6}alkyl, C(O)-C_{1-6}alkyl, SO_2-C_{1-6}alkyl, C(O)-C_{1-6}alkyl, and COO-C_{1-6}alkyl;

R^5 is C_{1-6}alkylene-OH, C_{1-6}alkylene-OH substituted with $PO(OCH_2CH_2)_2$, C_{1-6}alkylene-OH substituted with SO_3H, -$[C(O)]_{1-2}$-(4-8 membered heterocycle having 1-3 ring heteroatoms selected from N, O, and S), -$[C(O)]_{1-2}$-NR^NR^N, C(O)-Y-H, or -$[C(O)]_{1-2}$-NR^N-Y-X-A, wherein A is H, C_{3-8}carbocyclyl, 4-12-membered heterocycle having 1-3 ring heteroatoms selected from N, O, and S, C_{6-10}aryl, or 5-8-membered heteroaryl having 1-3 ring heteroatoms selected from N, O, and S, and the carbocyclyl, heterocyclyl, aryl, or heteroaryl is optionally substituted with 1-2 substituents independently selected from halo, C_{1-6}alkyl, and COO-C_{1-6}alkyl;

Y is a bond, C_{1-6}alkylene, C_{1-6}alkylene-O-C_{1-6}alkylene, or C_{1-6}alkenylene, wherein C_{1-6}alkylene and C_{1-}

$_{6}$alkenylene are optionally substituted with 1-3 substituents independently selected from halo, OH, NR^NR^N, and C_{1-6}alkoxy;

X is a bond, NR^NR^N, C(O), SO_2, or OC(O);

each R^6 is independently H, C_{1-6}alkylene-OH, C_{1-6}alkylene-OH substituted with $PO(OCH_2CH_2)_2$, C_{1-6}alkylene-OH substituted with SO_3H, CHO, or C(O)-(4-8 membered heterocycle having 1-3 ring heteroatoms selected from N, O, and S);

each R^7 is independently halo, C_{1-6}haloalkyl, C_{2-6}alkenyl, C_{3-5}carbocycyl, or C_{0-6}alkylene-C_{6-10}aryl, and C_{6-10}aryl is optionally substituted with 1-2 halo, or

two R^7 on the same or adjacent carbon atoms together with the carbon or carbons to which they are attached combine to form a C_{3-6}carbocyclyl ring;

R^A and R^B are each independently H, C_{1-6}alkyl, C_{1-6}haloalkyl, C_{1-6}alkoxy, C_{2-6}alkenyl, C_{2-6}alkynyl, C_{3-6}cycloalkyl, C_{0-6}alkylene-C_{6-10}aryl, C_{0-6}alkylene-5-8 membered heteroaryl having 1-3 ring heteroatoms selected from N, O, and S;

n is 0-3;and

o is 0-5.

2. The compound or salt according to claim 1, wherein each R^N is H.

3. The compound or salt according to claim 1, wherein Z is NR^1.

4. The compound or salt according to claim 3, wherein R^1 is C_{5-8}carbocyclyl optionally substituted with C_{1-6}alkylene-C_{6-10}aryl.

5. The compound or salt according to claim 4, wherein R^1 is unsubstituted C_{5-8}carbocyclyl.

6. The compound or salt according to claim 5, wherein R^1 is unsubstituted C_{5-6}carbocyclyl.

7. The compound or salt according to claim 3, wherein R^1 is C_{5-8}carbocyclyl substituted with C_{1-6}alkylene-C_{6-10}aryl.

8. The compound or salt according to claim 7, wherein R^1 is C_{5-6}carbocyclyl substituted with C_{1-6}alkylene-C_{6-10}aryl.

9. The compound or salt according to claim 7, wherein R^1 is C_{5-6}carbocyclyl substituted with benzyl.

10. The compound or salt according to claim 3, wherein R^1 is 5- to 8-membered N-heterocycle, wherein the ring nitrogen is substituted with COO-C_{1-6}alkyl.

11. The compound or salt according to claim 10, wherein R^1 is 6-membered N-heterocycle, wherein the ring nitrogen is substituted with COO-C_{1-6}alkyl.

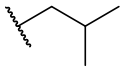
12. The compound or salt according to claim 10, wherein the heterocycle ring nitrogen is substituted with COO-*t*-butyl.

13. The compound or salt according to claim 1 or 2, wherein Z is O.

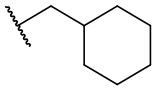
14. The compound or salt according to any one of claims 1 to 13, wherein R^2 is benzyl substituted with 1-2 R^7.

15. The compound or salt according to claim 14, wherein R^2 is substituted with 1-2 substituents independently selected from halo, C_{1-6}alkoxy, C_{1-6}alkyl, C_{1-6}haloalkyl, and CO_2C_{1-6}alkyl.

16. The compound or salt according to any one of claims 1 to 15, wherein R^3 is C_{1-6}alkyl.

17. The compound or salt according to claim 16, wherein R^3 is .

18. The compound or salt according to any one of claims 1 to 15, wherein R^3 is C_{1-6}alkylene-C_{5-8}carbocyclyl.

19. The compound or salt according to claim 18, wherein R^3 is .

20. The compound or salt according to any one of claims 1 to 15, wherein R^3 is C_{2-6}alkenyl or C_{2-6}alkynyl.

21. The compound or salt according to any one of claims 1 to 15, wherein R^3 is C_{0-6}alkylene-C_{6-10}aryl.

22. The compound or salt according to any one of claims 1 to 21, wherein n is 0.

23. The compound or salt according to any one of claims 1 to 21, wherein n is 1, 2, or 3.

24. The compound or salt according to claim 23, wherein n is 1 or 2.

25. The compound or salt according to claim 23 or 24, wherein each R^4 is independently C_{1-6}alkyl, oxo (=O), C_{0-4}alkylene-C_{6-10}aryl, C_{0-4}alkylene-(5-12 membered heteroaryl having 1-3 ring heteroatoms selected from N, O, and S), or C_{0-4}alkylene-(4-12 membered heterocycle having 1-3 ring heteroatoms selected from N, O, and S); and the aryl, heteroaryl, and heterocycle is optionally substituted with 1-2 substituents independently selected from halo, C_{1-6}alkyl, and COO-C_{1-6}alkyl.

26. The compound or salt according to claim 23 or 24, wherein at least one R^4 is halo, OH, CN, C_{1-6}haloalkyl, C_{1-6}alkyl-OH, C_{2-6}alkenyl, C_{2-6}alkynyl, C_{1-6}alkoxy, C_{3-6}alkyloxyalkyl, $NR^ASO_2R^B$, $SO_2NR^AR^B$, or $COOR^A$.

27. The compound or salt according to claim 24, wherein n is 2 and two R^4 with the carbon or carbons to which they are attached combine to form a spiro or fused 5-12 membered carbocycle or heterocylic ring having 1-3 ring heteroatoms selected from N, O, and S, which is optionally substituted with 1-2 substituents independently selected from halo, C_{1-6}alkyl, C(O)-C_{1-6}alkyl, and COO-C_{1-6}alkyl.

28. The compound or salt according to claim 27, wherein the two R^4 with the carbon to which they are attached combine to form a spiro 5-12 membered carbocycle or heterocylic ring having 1-3 ring heteroatoms selected from N, O, and S, which is optionally substituted with 1-2 substituents independently selected from halo, C_{1-6}alkyl, C(O)-C_{1-6}alkyl, and COO-C_{1-6}alkyl.

29. The compound or salt according to claim 27, wherein the two R^4 with the carbons to which they are attached combine to form a fused 5-12 membered carbocycle or heterocylic ring having 1-3 ring heteroatoms selected

from N, O, and S, which is optionally substituted with 1-2 substituents independently selected from halo, C_{1-6}alkyl, C(O)-C_{1-6}alkyl, and COO-C_{1-6}alkyl.

30. The compound or salt according to any one of claims 1 to 29, wherein R^5 is C_{1-6}alkylene-OH, C_{1-6}alkylene-OH substituted with $PO(OCH_2CH_2)_2$, C_{1-6}alkylene-OH substituted with SO_3H, C(O)-(4-8 membered heterocycle having 1-3 ring heteroatoms selected from N, O, and S), $CONR^NR^N$, C(O)-C(O)N(R^N)$_2$, CHO, or C(O)-C(O)NR^N-Y-X-A, wherein A is C_{3-8}carbocyclyl, 4-12-membered heterocycle having 1-3 ring heteroatoms selected from N, O, and S, C_{6-10}aryl, or 5-8-membered heteroaryl having 1-3 ring heteroatoms selected from N, O, and S, and the carbocyclyl, heterocyclyl, aryl, or heteroaryl is optionally substituted with 1-2 substituents independently selected from halo, C_{1-6}alkyl, and COO-C_{1-6}alkyl.

31. The compound or salt according to any one of claims 1 to 30, wherein Y is C_{1-6}alkylene optionally substituted with 1-3 substituents independently selected from halo, OH, NR^NR^N, and C_{1-6}alkoxy.

32. The compound or salt according to any one of claims 1 to 31, wherein R^2 is C_{1-6}alkyl, C_{1-6}alkylene-C_{5-8}carbocycyl, 4-10 membered heterocyclyl having 1-3 ring heteroatoms selected from N, O, and S, C_{1-6}alkylene-C_{6-10}aryl, 5-10 membered heteroaryl having 1-3 ring heteroatoms selected from N, O, and S, or C_{1-6}alkylene-5-10 membered heteroaryl having 1-3 ring heteroatoms selected from N, O, and S, wherein C_{1-6}alkylene is substituted with 1-3 R^7.

33. The compound or salt according to claim 32, wherein C_{1-6}alkylene is substituted with 1 R^7.

34. The compound or salt according to claim 32, wherein C_{1-6}alkylene is substituted with 2 R^7.

35. The compound or salt according to claim 32, wherein C_{1-6}alkylene is substituted with 3 R^7.

36. The compound or salt according to any one of claims 32 to 35, wherein at least one R^7 is C_{0-6}alkylene-C_{6-10}aryl optionally substituted with 1-2 halo.

37. The compound or salt according to claim 36, wherein at least one R^7 is phenyl optionally substituted with 1-2 halo.

38. The compound or salt according to claim 36 or 37, wherein at least one R^7 is phenyl optionally substituted with 1 halo.

39. The compound or salt according to any one of claims 1 to 32, 34, or 35, wherein two R^7 with the carbon or carbons to which they are attached combine to form a spiro or fused C_{3-6}carbocyclyl ring.

40. The compound or salt according to claim 39, wherein two R^7 with the carbon to which they are attached combine to form a spiro C_{3-6}carbocyclyl ring.

41. The compound or salt according to claim 39, wherein two R^7 with the carbons to which they are attached combine to form a fused C_{3-6}carbocyclyl ring.

42. The compound or salt according to any one of claims 1 to 41, wherein o is 0.

43. The compound or salt according to any one of claims 1 to 41, wherein o is 1-5.

44. The compound or salt according to claim 43, wherein o is 1 or 2.

45. The compound or salt according to claim 43 or 44, wherein each R^6 is H.

46. The compound or salt according to claim 43 or 44, wherein at least one R^6 is C_{1-6}alkylene-OH, C_{1-6}alkylene-OH substituted with $PO(OCH_2CH_2)_2$, C_{1-6}alkylene-OH substituted with SO_3H, CHO, or C(O)-(4-8 membered heterocycle having 1-3 ring heteroatoms selected from N, O, and S).

47. The compound or salt according to any one of claims 1 to 46, wherein R^5 is C_{1-6}alkylene-OH, C_{1-6}alkylene-OH substituted with $PO(OCH_2CH_2)_2$, C_{1-6}alkylene-OH substituted with SO_3H, CHO, C(O)-(4-8 membered heterocycle having 1-3 ring heteroatoms selected from N, O, and S), or $CONR^NR^N$.

48. The compound or salt according to any one of claims 1 to 46, wherein R^5 is C(O)-C(O)NR^N-Y-X-A.

49. The compound or salt according to claim 48, wherein Y is C_{1-6}alkylene.

50. The compound or salt according to claim 48 or 49, wherein X is a bond.

51. The compound or salt according to claim 48 or 49, wherein X is NR^NR^N, C(O), SO_2, or OC(O).

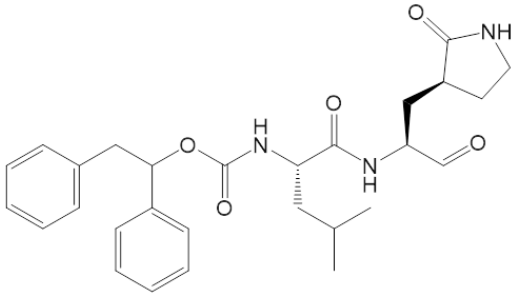
52. The compound or salt according to any one of claims 48 to 51, wherein A is C_{5-8}carbocyclyl or C_{6-10}aryl, and optionally substituted with 1-2 substituents independently selected from halo, C_{1-6}alkyl, and COO-C_{1-6}alkyl.

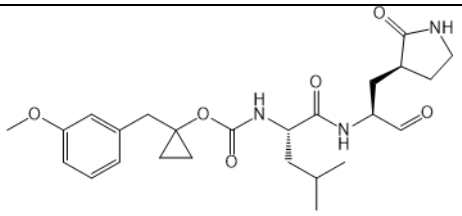
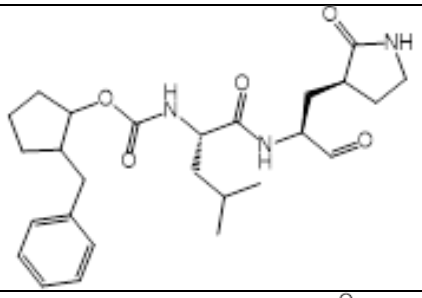
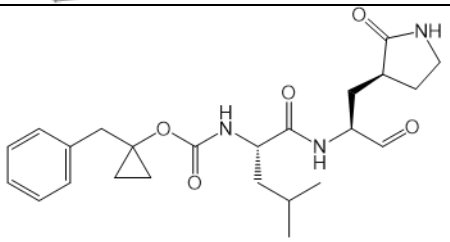
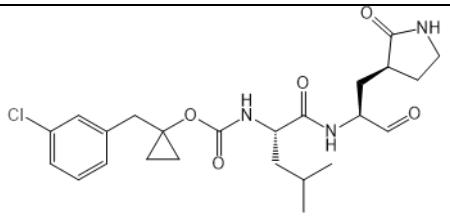
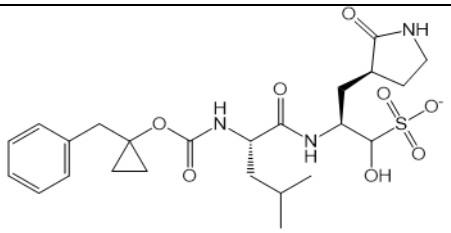
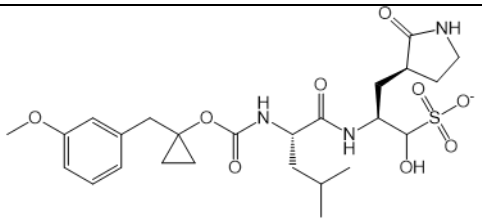
53. The compound or salt according to any one of claims 48 to 51, wherein A is 4-12-membered heterocycle having 1-3 ring heteroatoms selected from N, O, and S, or 5-8-membered heteroaryl having 1-3 ring heteroatoms selected from N, O, and S, optionally substituted with 1-2 substituents independently selected from halo, C_{1-6}alkyl, and COO-C_{1-6}alkyl.

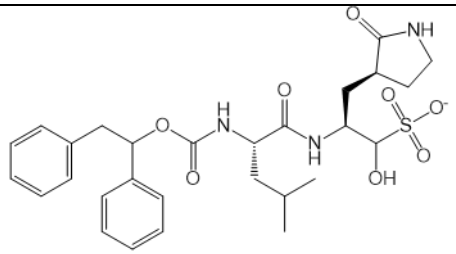
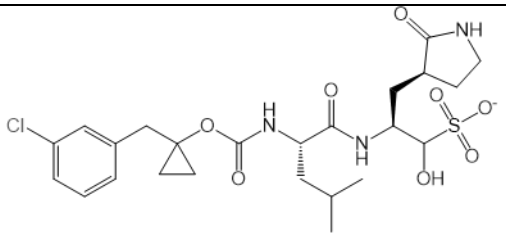
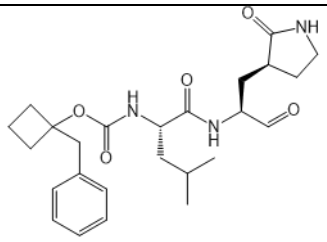
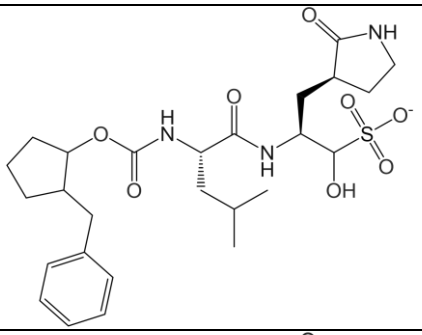
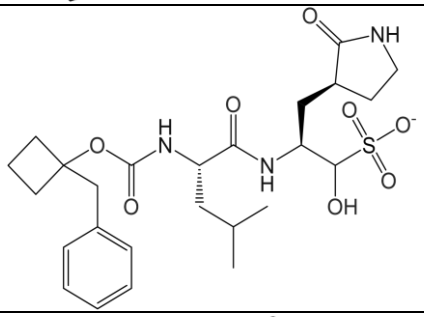
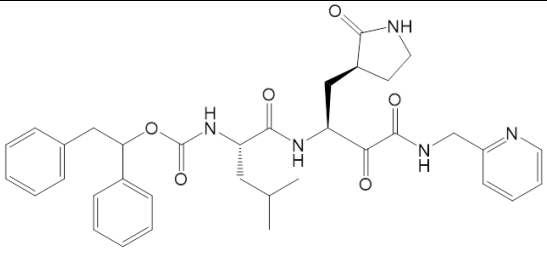
54. The compound or salt according to claim 53, wherein A comprises pyridyl.

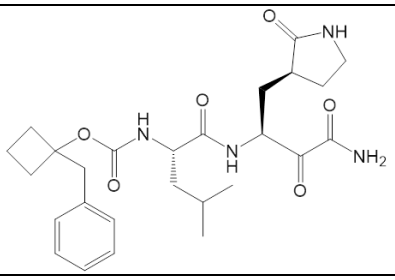
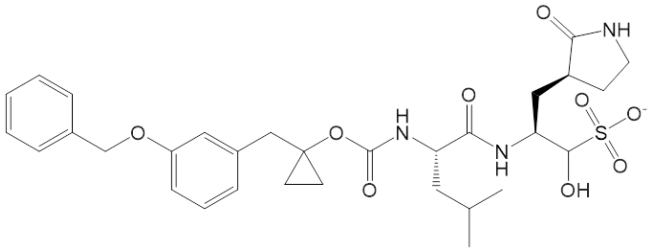
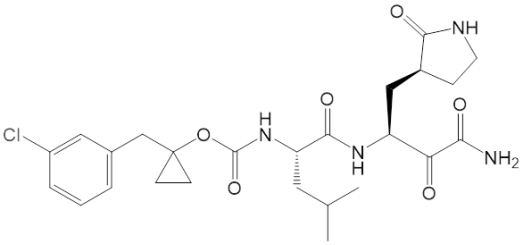
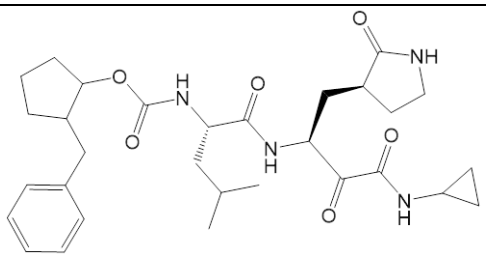
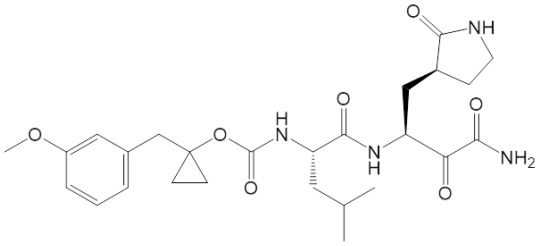
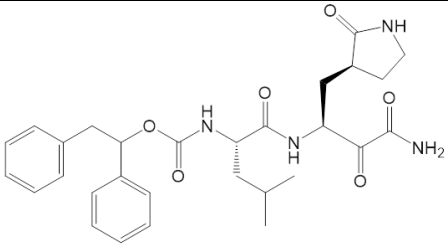
55. The compound or salt according to claim 1, having a structure as shown in Table C:

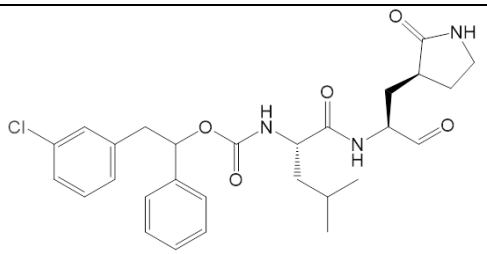
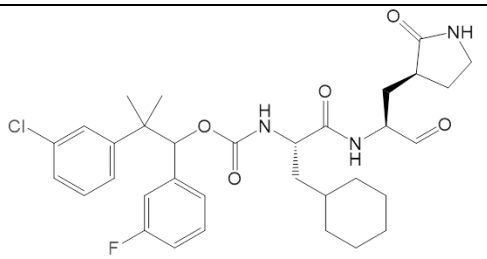
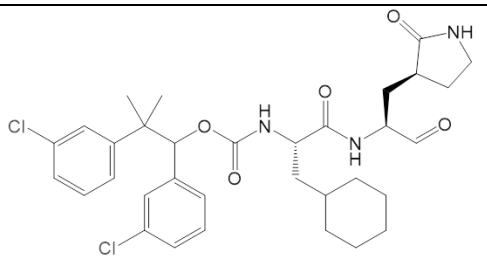
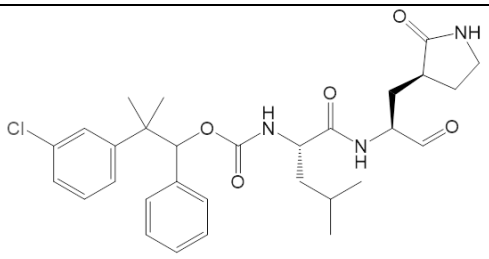
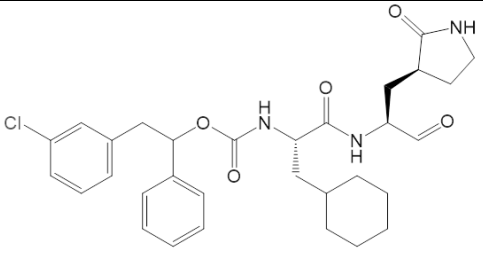
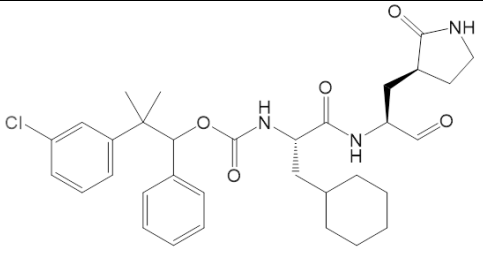
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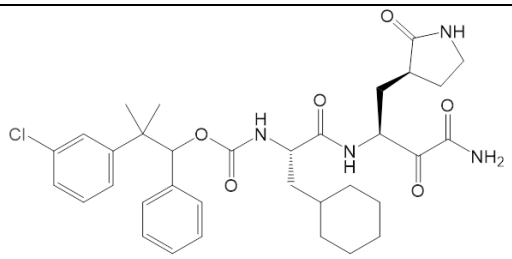
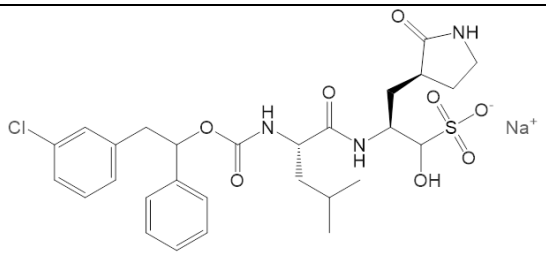
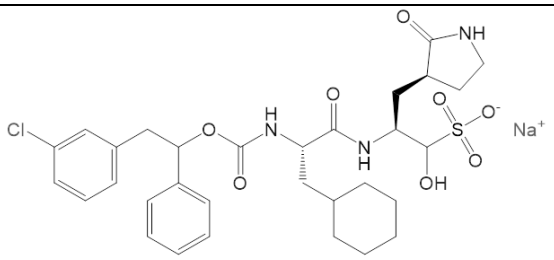
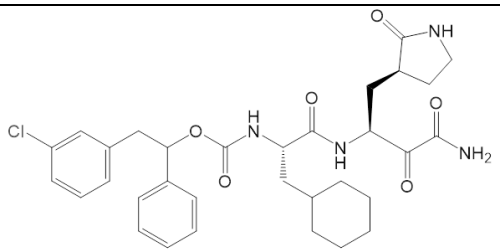
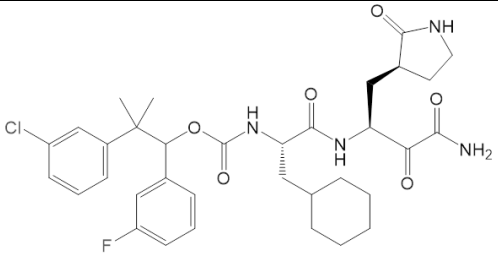
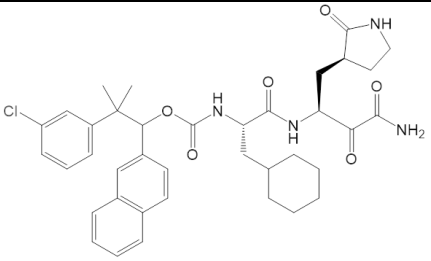
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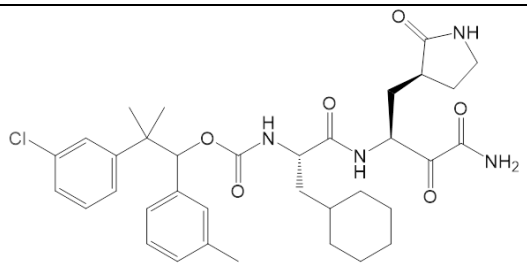
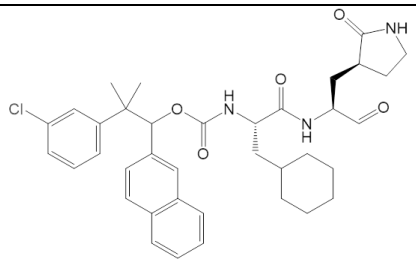
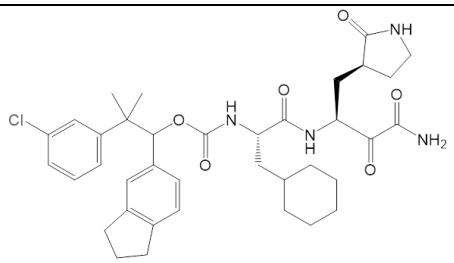
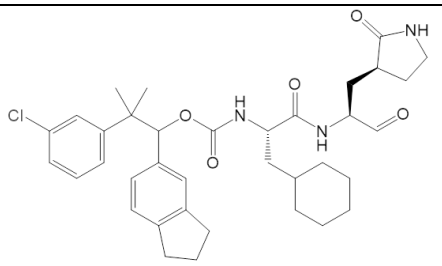
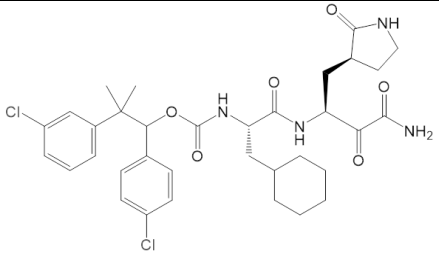
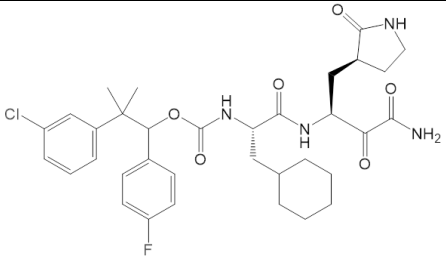
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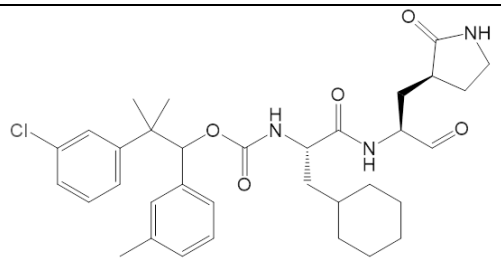
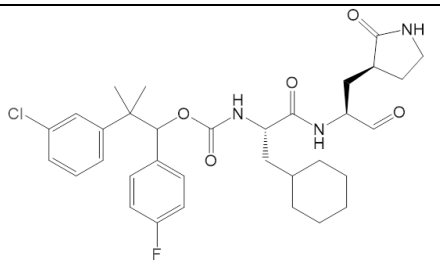
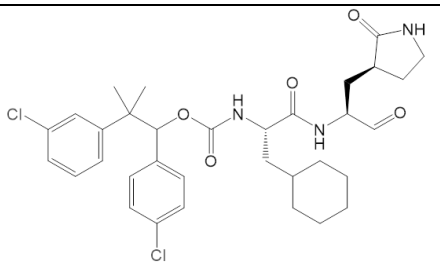
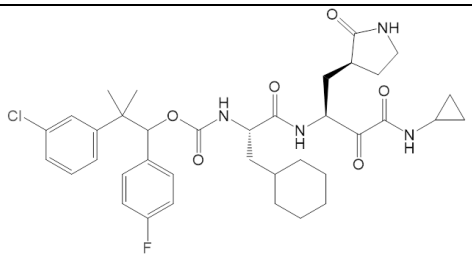
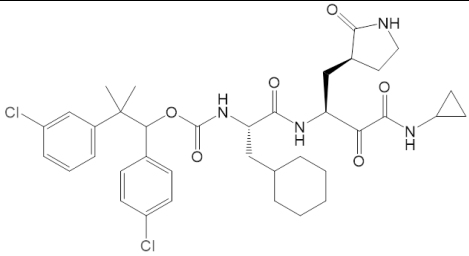
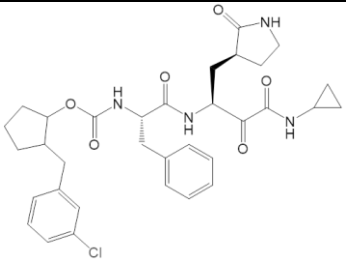
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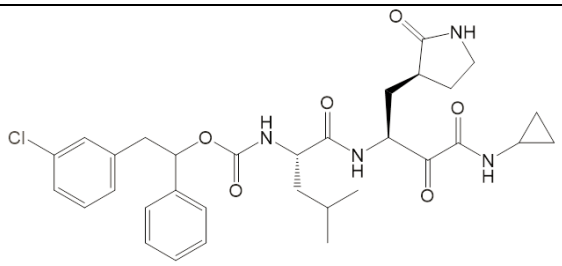
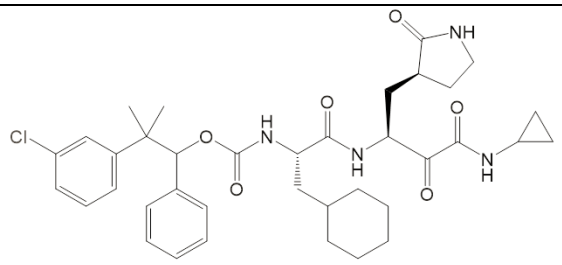
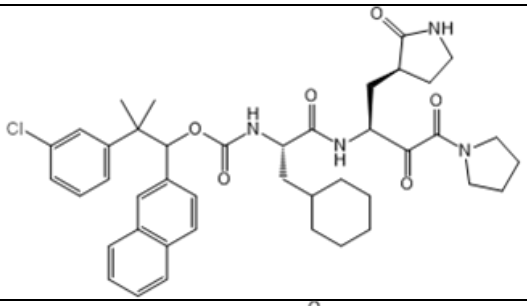
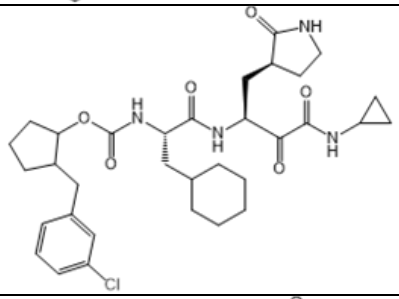
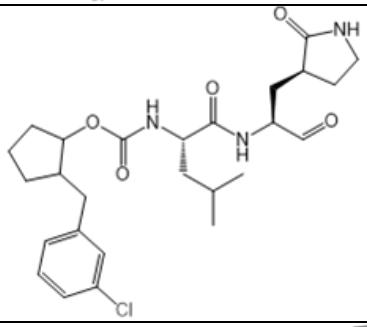
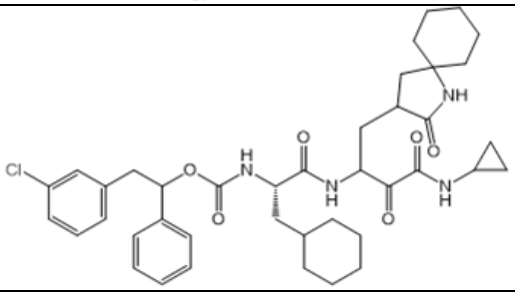
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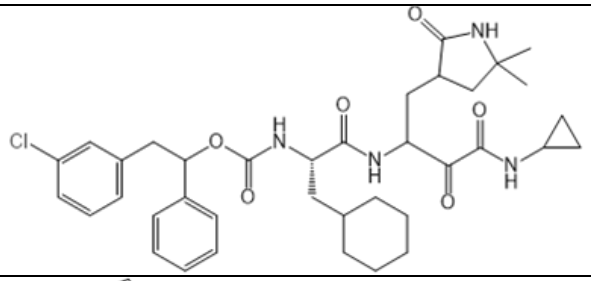
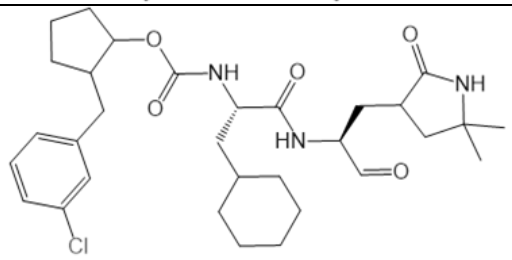
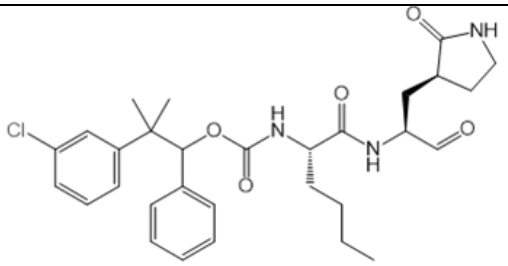
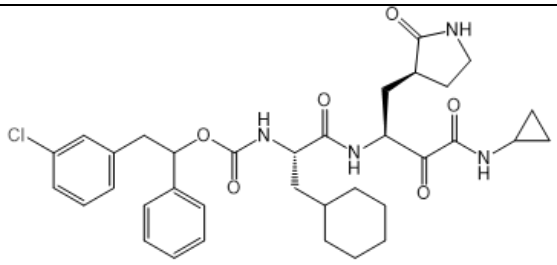
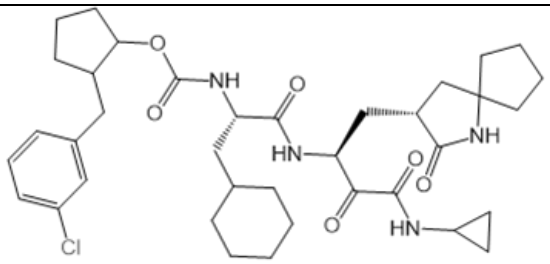
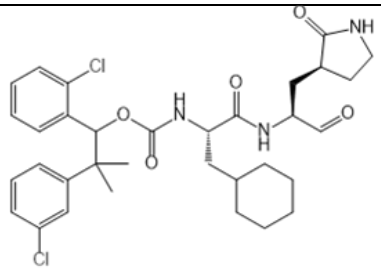
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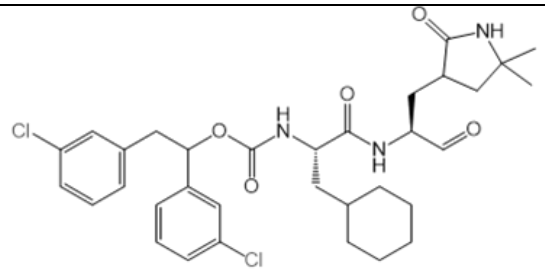
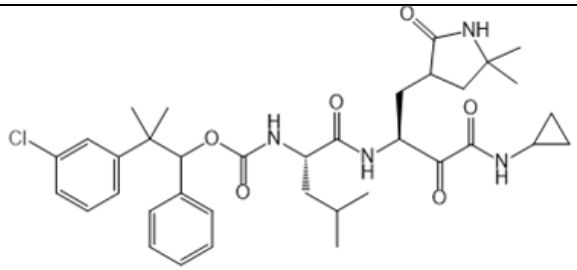
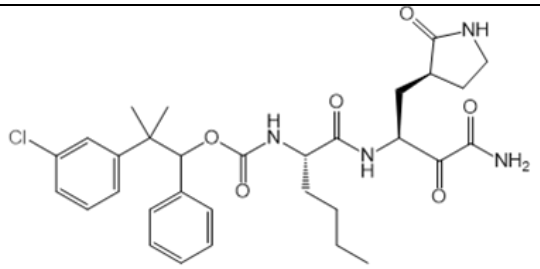
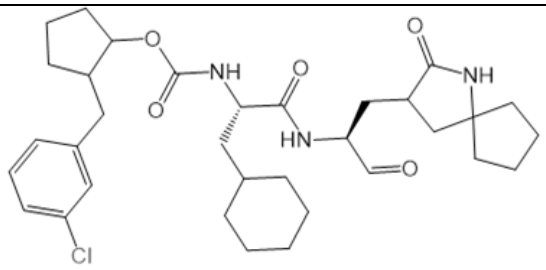
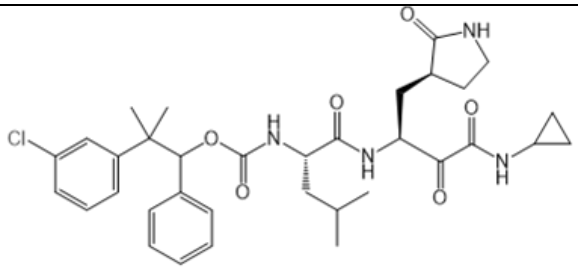
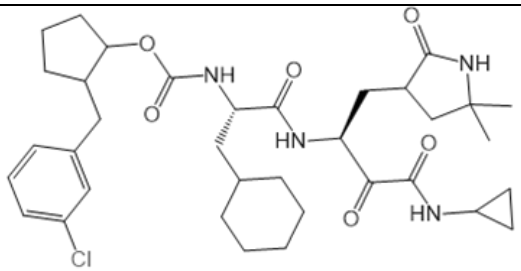
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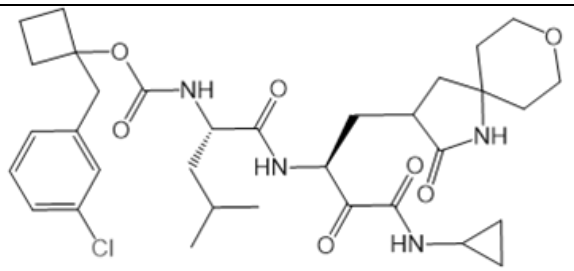
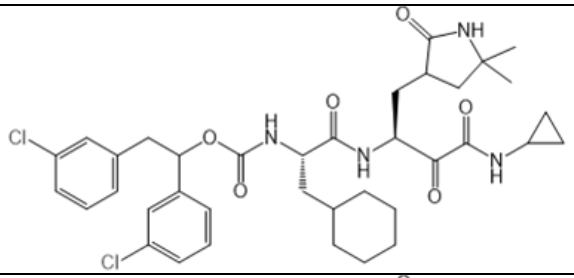
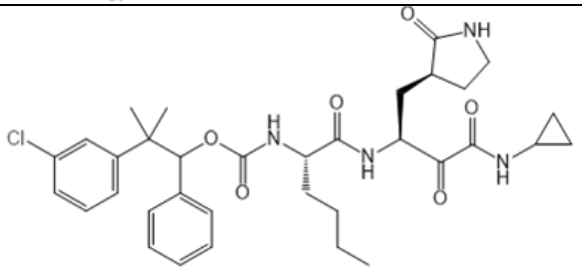
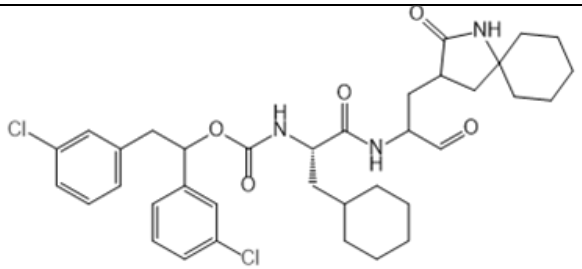
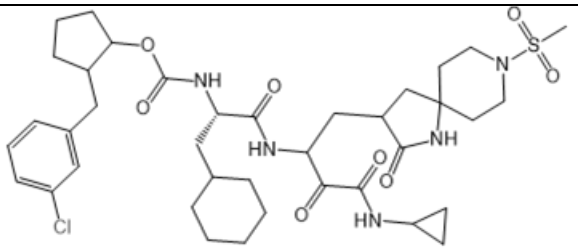
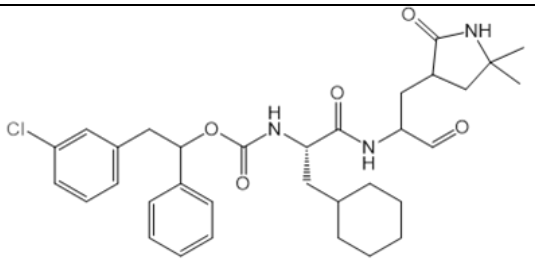
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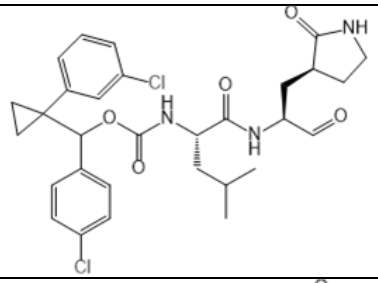
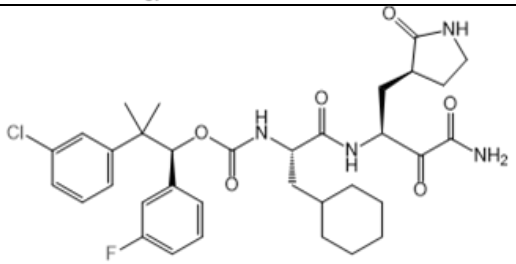
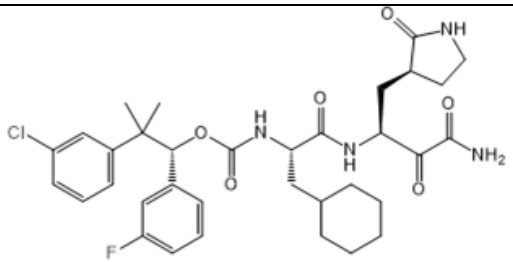
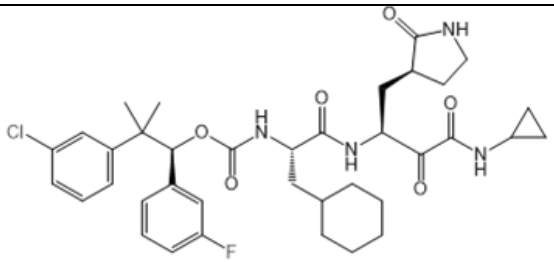
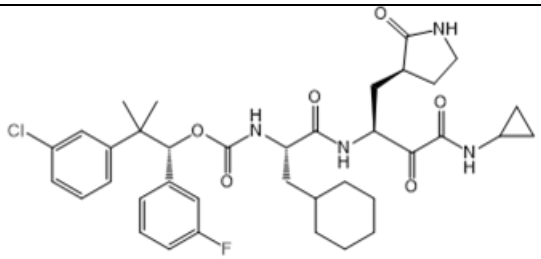
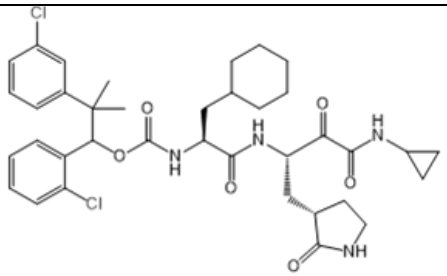
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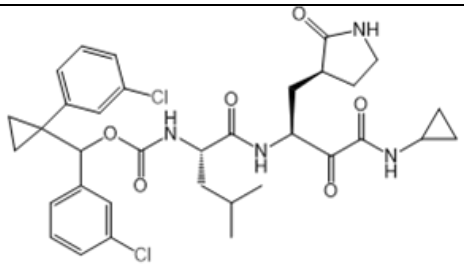
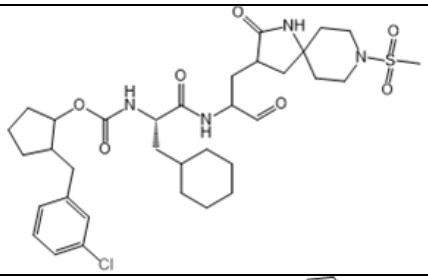
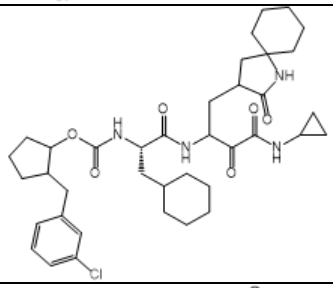
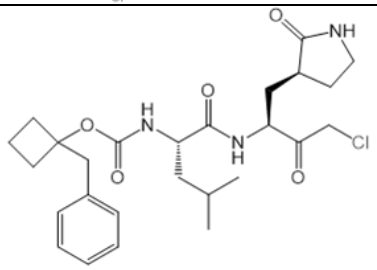
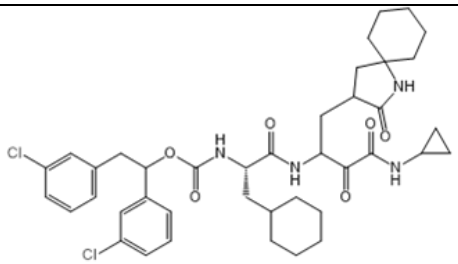
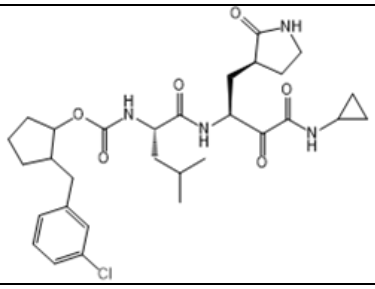
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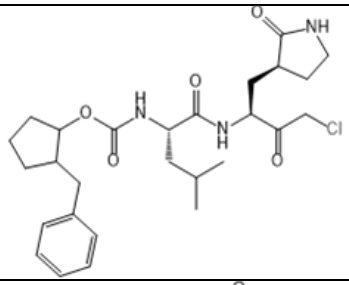
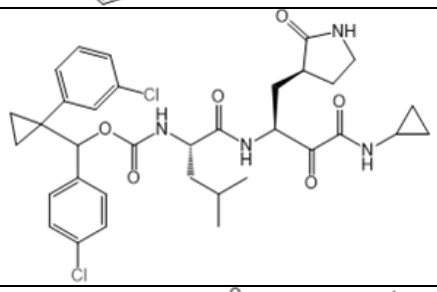
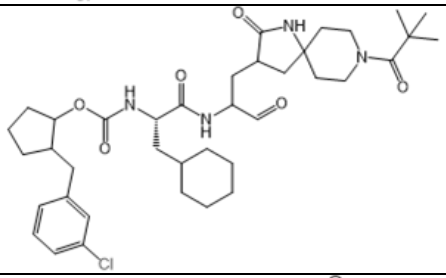
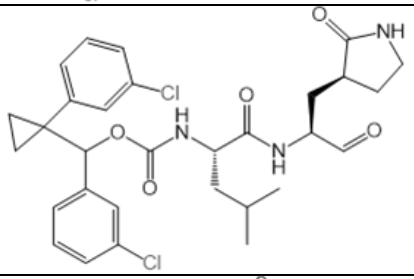
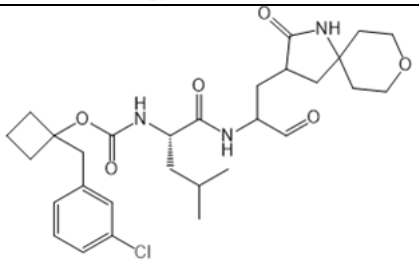
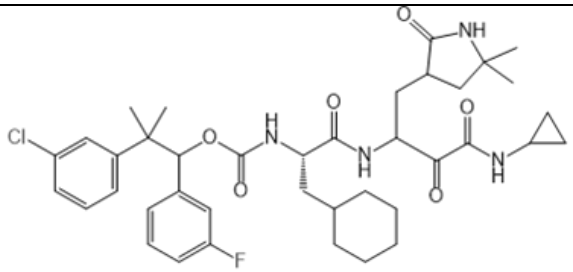
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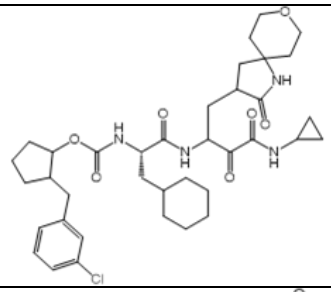
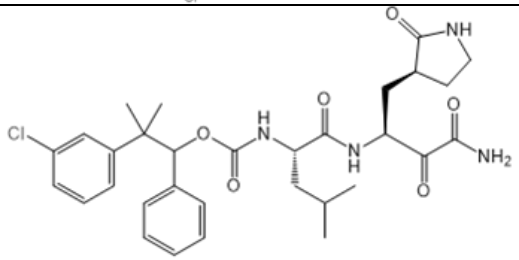
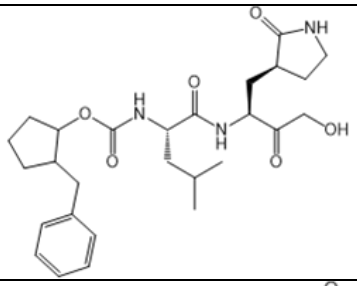
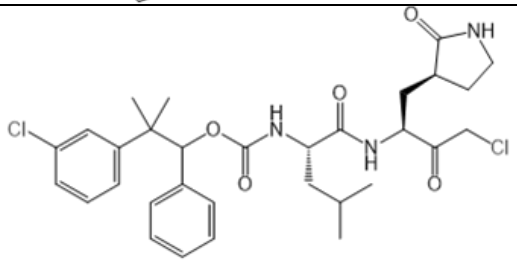
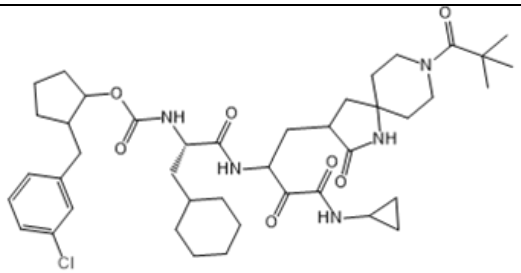
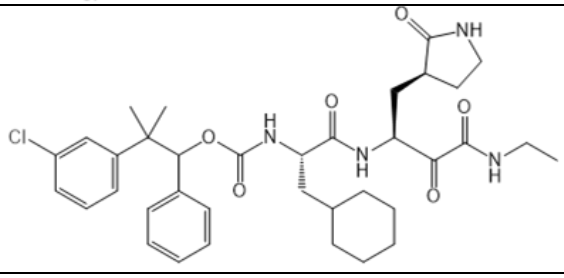
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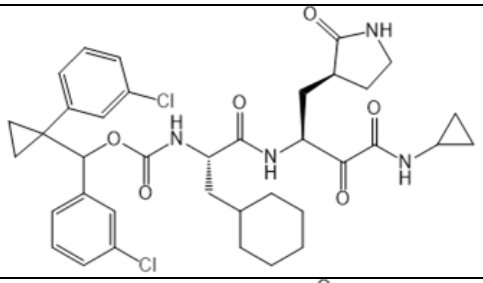
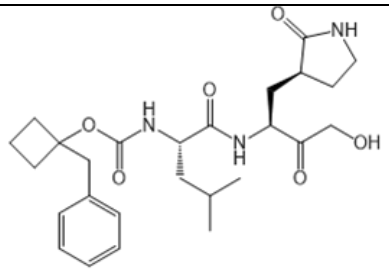
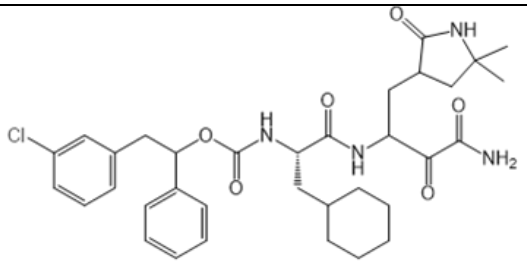
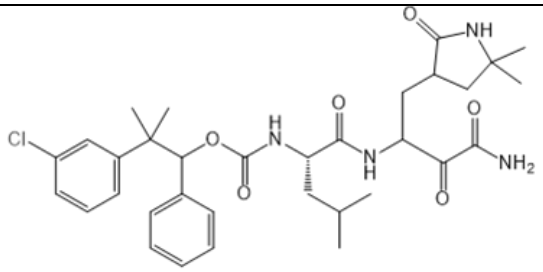
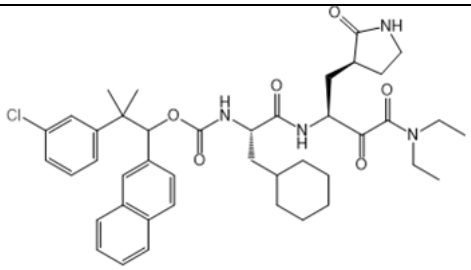
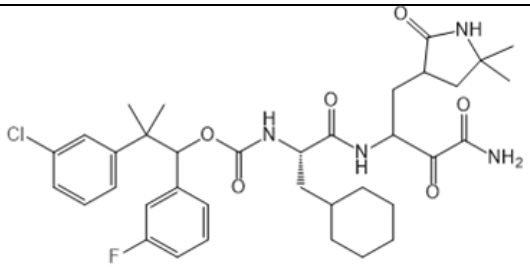
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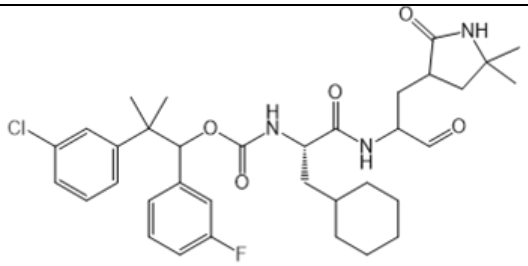
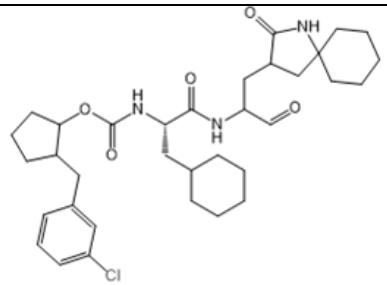
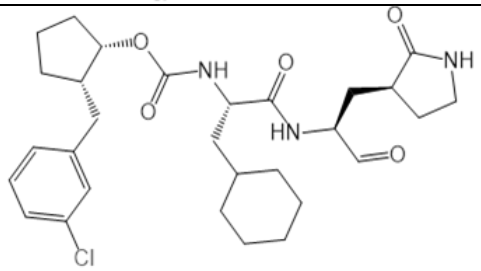
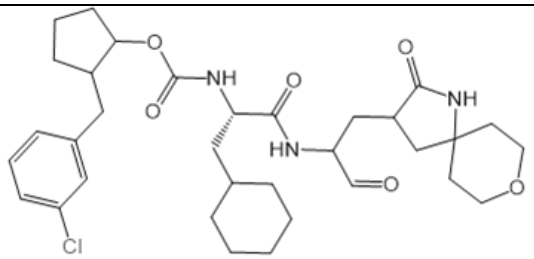
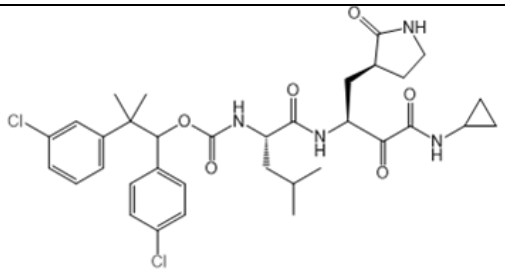
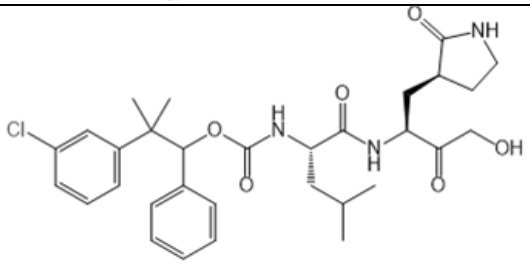
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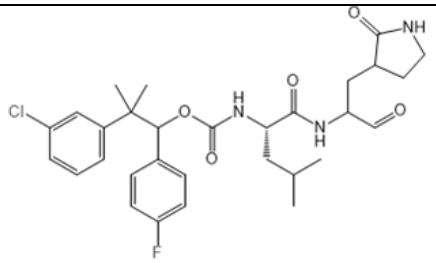
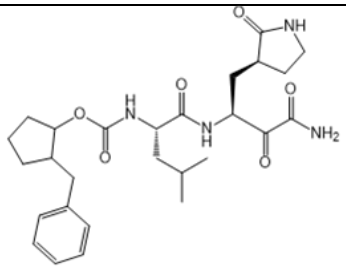
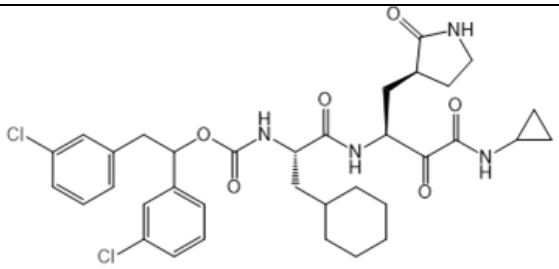
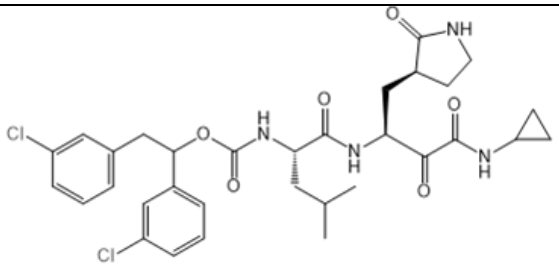
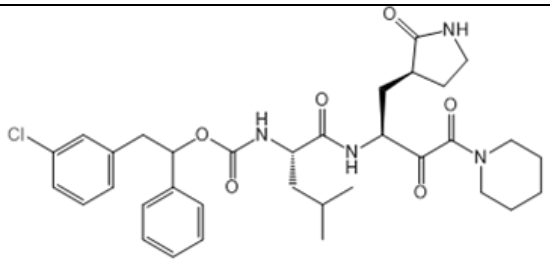
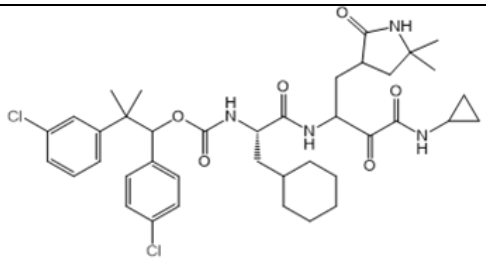
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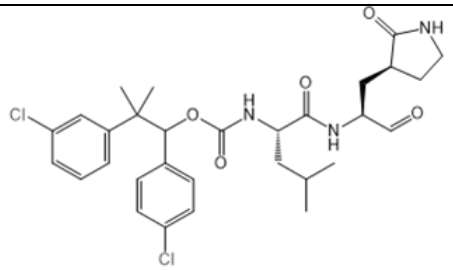
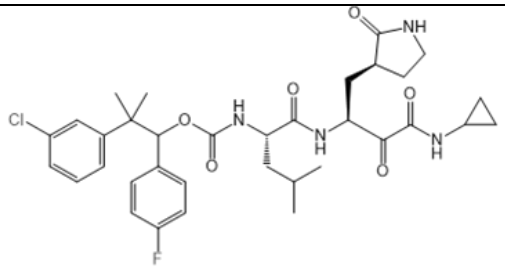
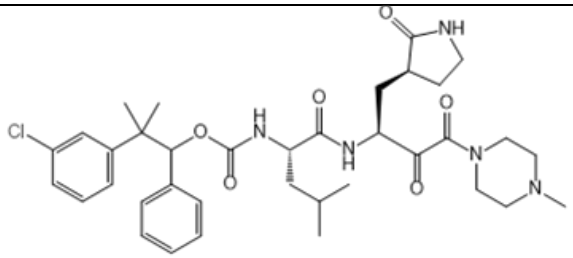
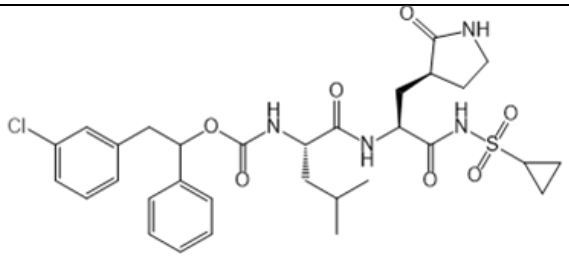
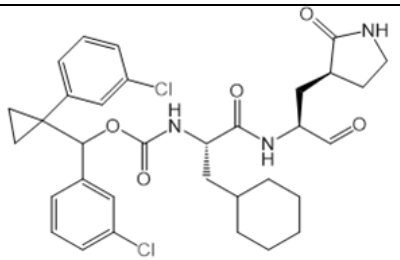
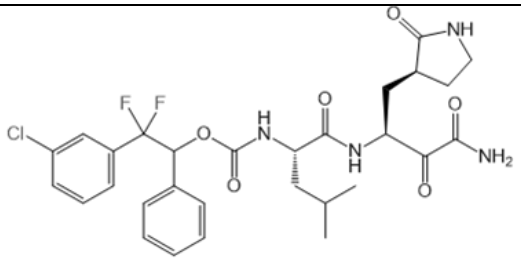
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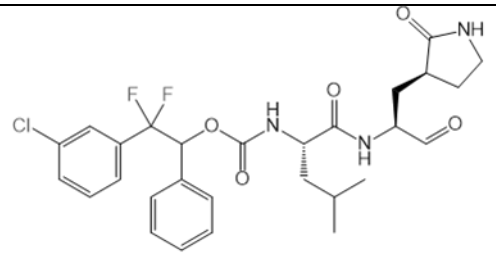
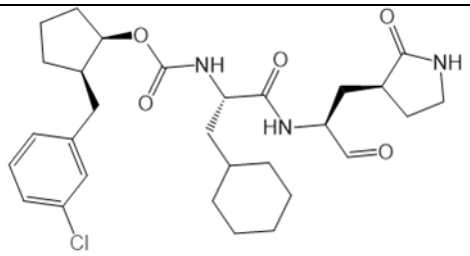
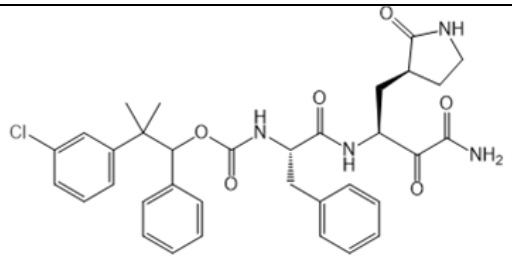
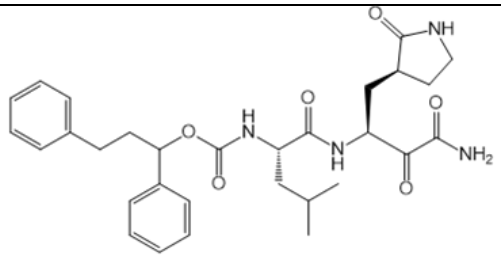
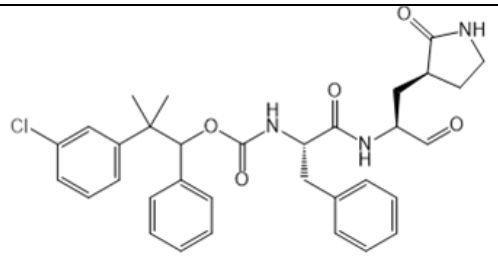
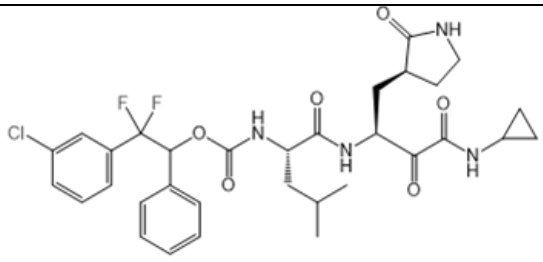
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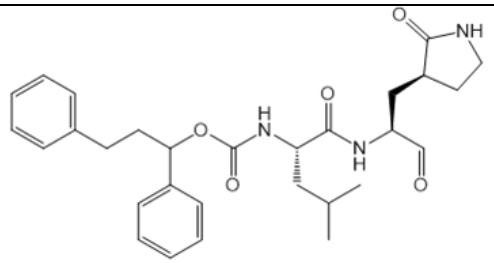
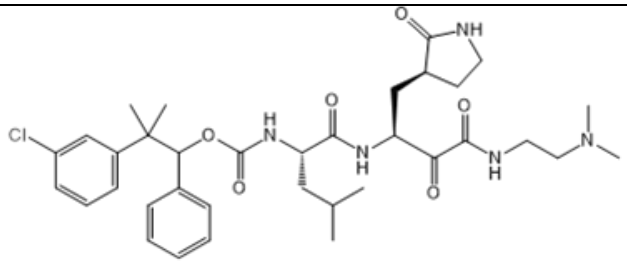
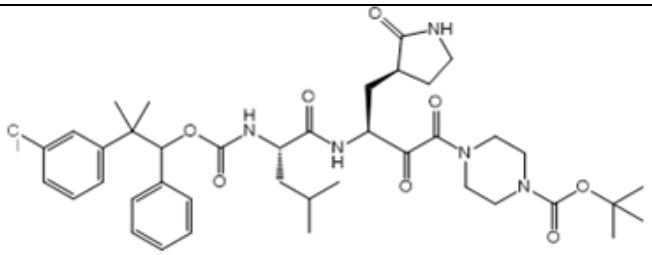
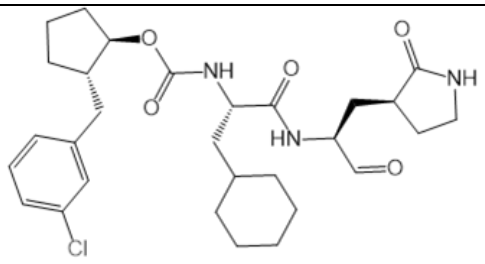
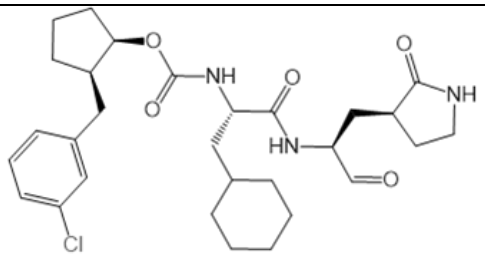
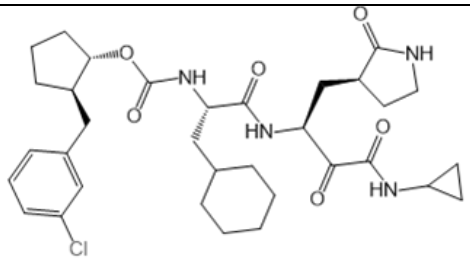
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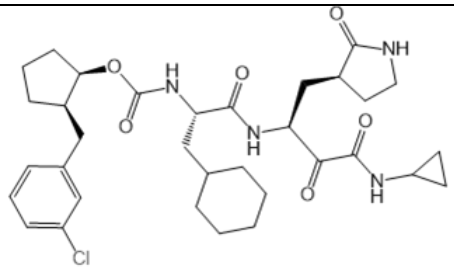
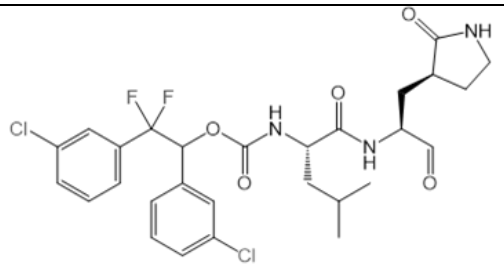
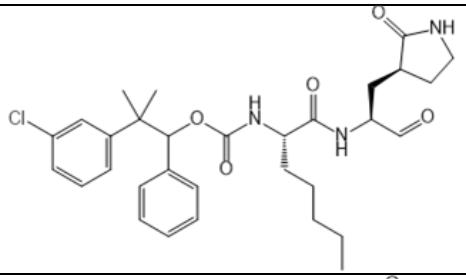
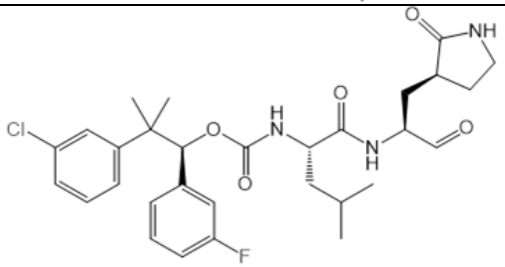
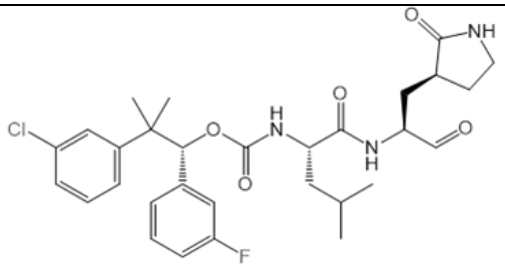
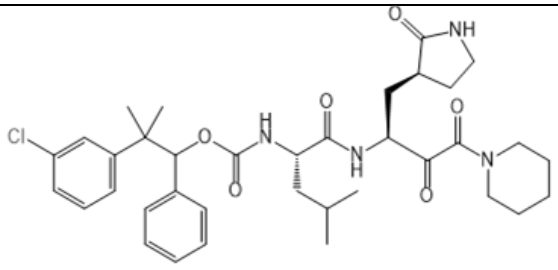
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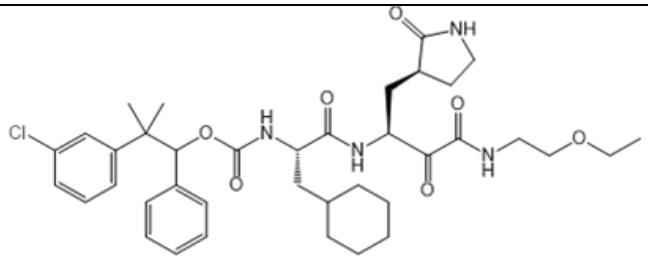
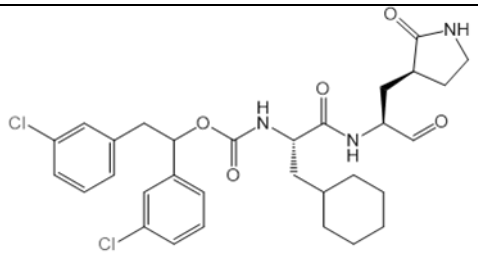
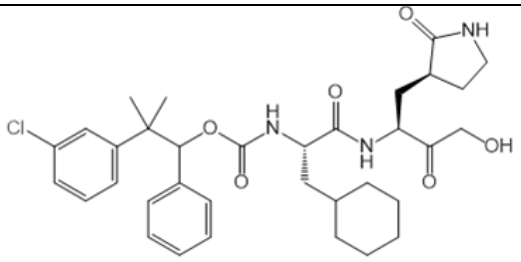
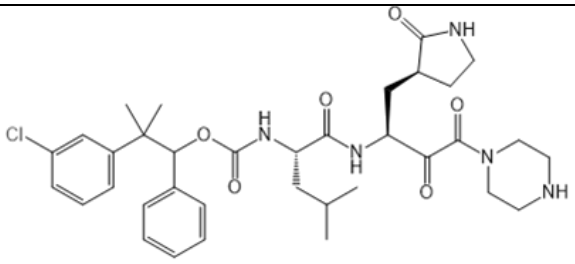
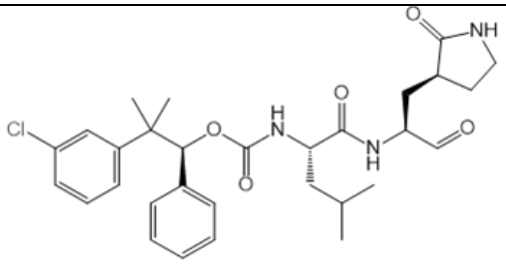
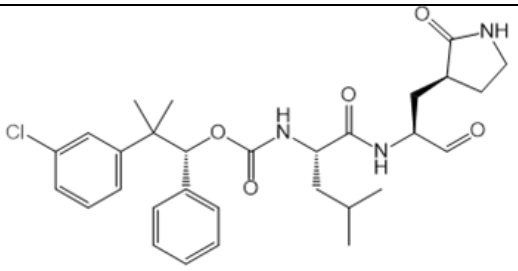
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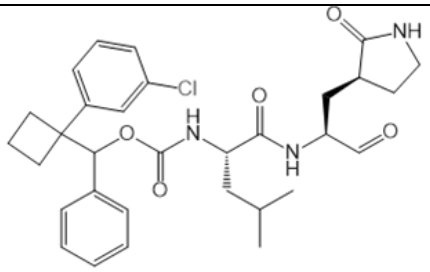
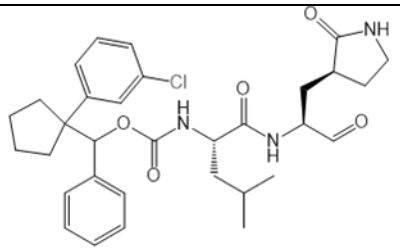
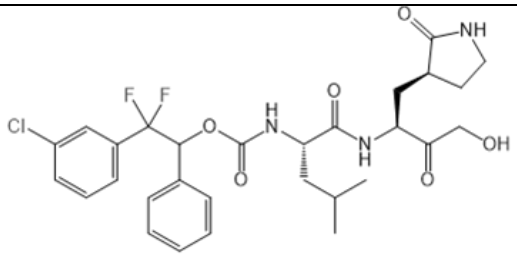
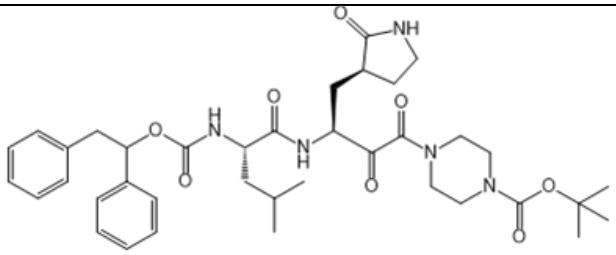
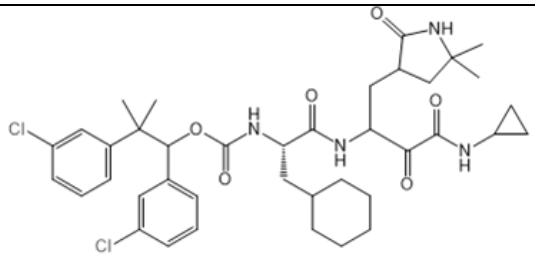
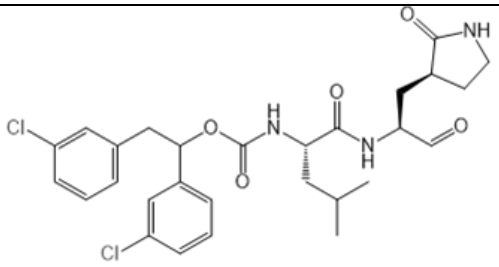
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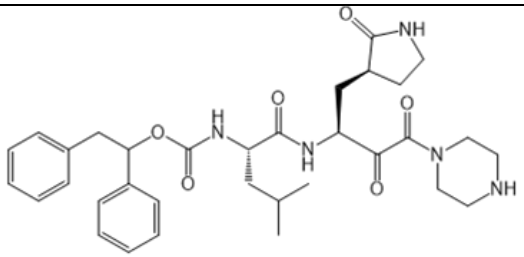
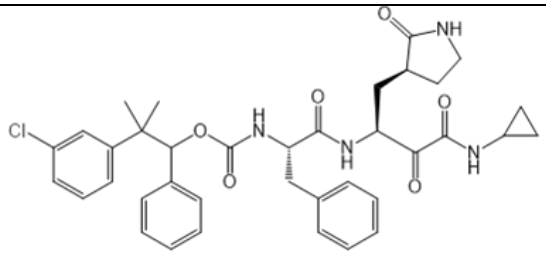
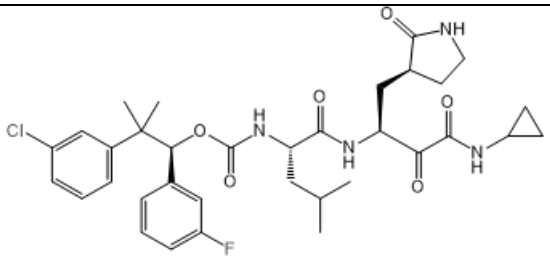
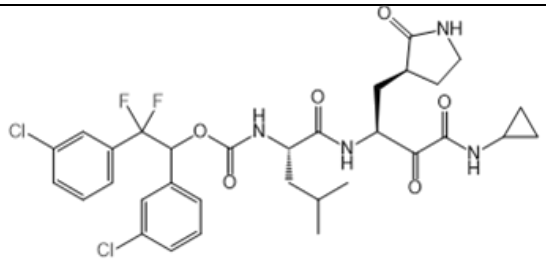
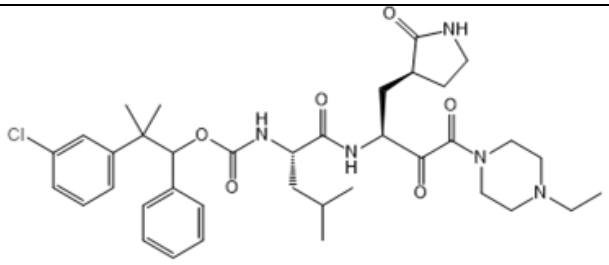
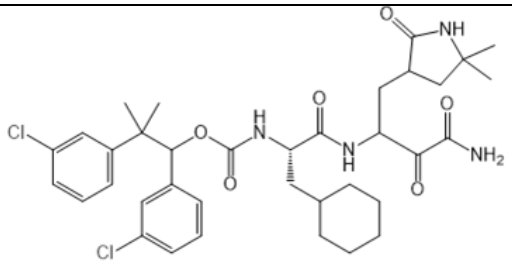
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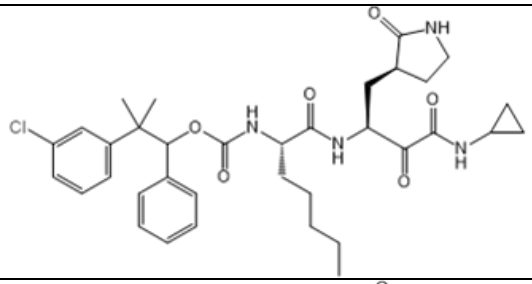
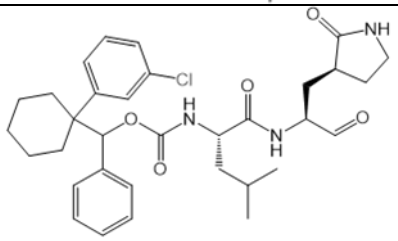
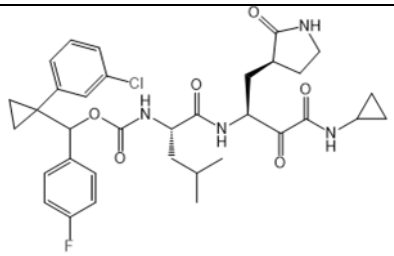
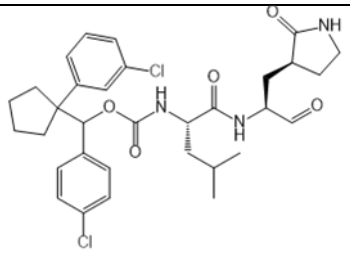
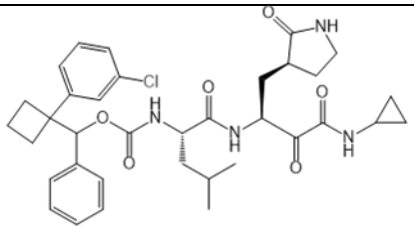
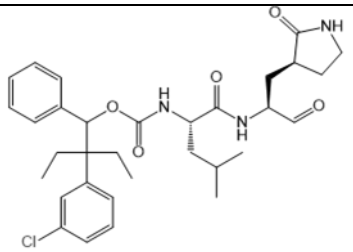
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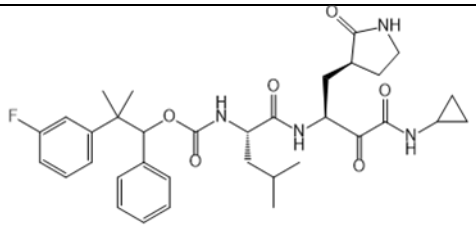
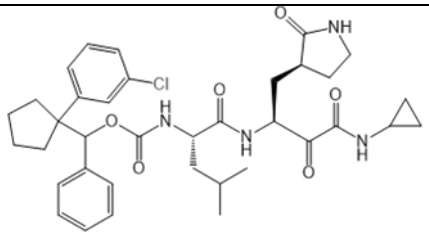
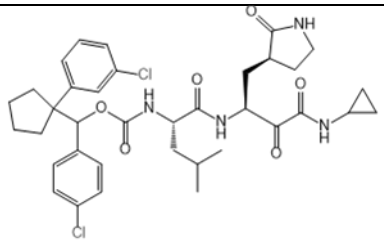
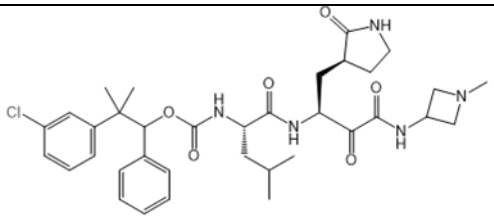
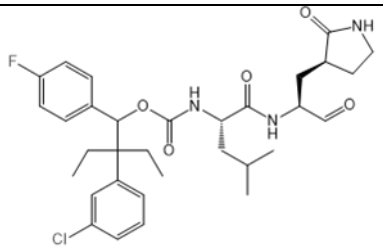
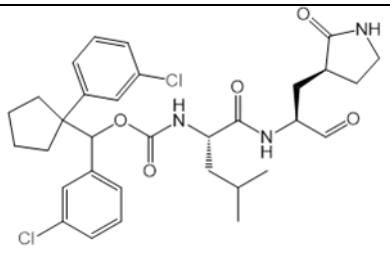
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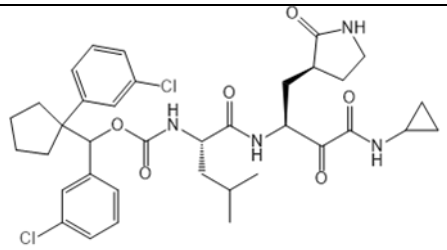
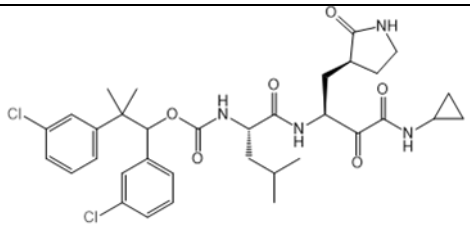
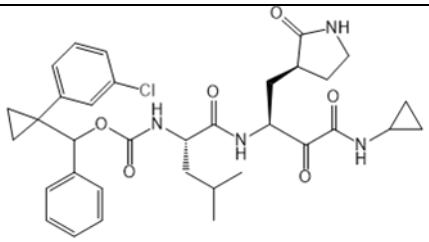
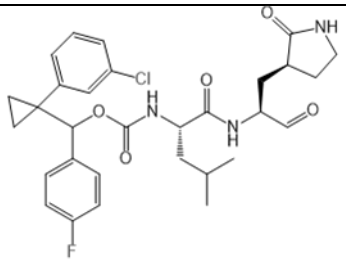
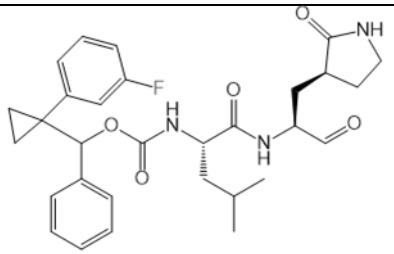
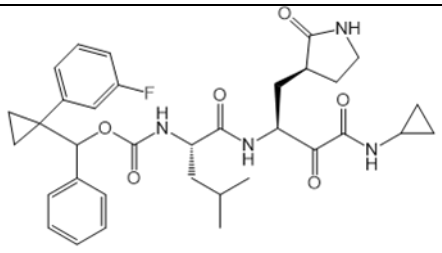
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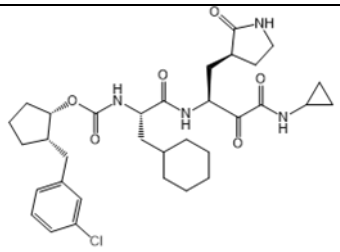
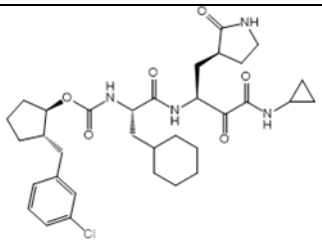
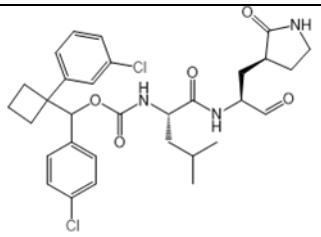
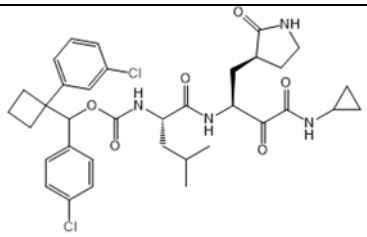
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56. A pharmaceutical formulation comprising the compound or salt according to any one of claims 1 to 55 and a pharmaceutically acceptable excipient.

57. Use of the compound or salt according to any one of claims 1 to 55 in the manufacture of a medicament for treating or preventing a viral infection in a host.

58. The use according to claim 57, wherein the viral infection is coronavirus infection, calicivirus infection, or picornavirus infection.

59. The use according to claim 58, wherein the viral infection is a calicivirus infection.

60. The use according to claim 59, wherein the calicivirus infection is a norovirus infection.

61. The use according to claim 58, wherein the viral infection is a coronavirus infection.

62. The use according to claim 61, wherein the coronavirus infection is severe acute respiratory syndrome (SARS), Middle East respiratory syndrome (MERS), or Coronavirus disease 2019 (COVID-19).

63. The use according to claim 58, wherein the viral infection is a picornavirus infection.

64. The use according to claim 63, wherein the picornavirus infection is rhinovirus infection.

65. The use according to claim 64, wherein the rhinovirus infection is a rhinovirus A, rhinovirus B, or rhinovirus C infection.

66. The use according to claim 61, wherein the coronavirus is an alpha coronavirus.

67. The use according to claim 61, wherein the coronavirus is a beta coronavirus.

68. The compound or salt according to any one of claims 1 to 55, for use in therapy.