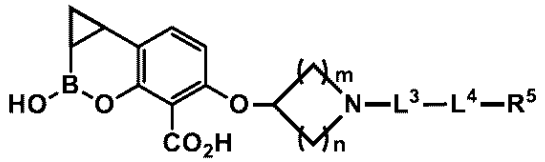
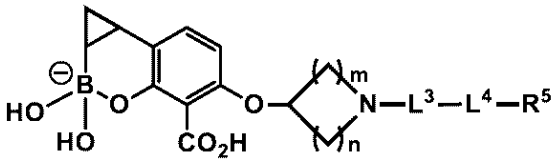
Claims

1. A compound represented by formula (6a) or (6b):

[Chemical Formula 742]



(6a)



(6b)

, or a pharmaceutically acceptable salt thereof,

wherein

L^3 is an optionally substituted hydrocarbylene group, an optionally substituted heterohydrocarbylene group, -S(=O)-, or -$S(=O)_2$-,

L^4 is a single bond, an optionally substituted hydrocarbylene group, an optionally substituted heterohydrocarbylene group, or -$C(=N-OR^{h1})$-,

R^{h1} is

1) a hydrogen atom,

2) a C_{1-6} alkyl group,

3) a C_{3-10} alicyclic group,

4) C_{6-10} aryl,

5) 5- or 6-membered heteroaryl, or

6) a 4- to 10-membered non-aryl heterocycle,

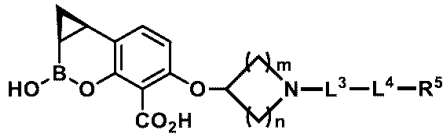
(wherein each substituent from 2) to 6) is optionally substituted),

R^5 is a hydrogen atom, a hydroxyl group, an optionally substituted hydrocarbyl group, an optionally substituted heterohydrocarbyl group, optionally substituted -NHOH, a sulfo group (sulfonic acid group), optionally substituted -SO_2H, optionally substituted -SO_2-NH_2, optionally substituted -S(=O)(=NH)H, optionally substituted -NH-SO_2-H, optionally substituted -NH-SO_2-NH_2, optionally substituted -N=$S(=O)H_2$, or optionally substituted -NH_2,

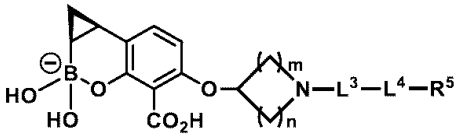
m is an integer 1, and

n is an integer 1.

2. The compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein the compounds of formulas (6a) and (6b) are enantiomers represented by
formulas (7a) and (7b):
[Chemical Formula 743]

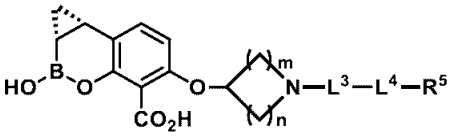


(7a)

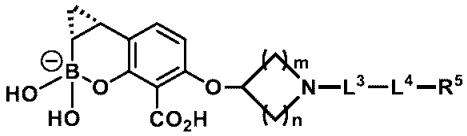


(7b)

or
formulas (8a) and (8b):
[Chemical Formula 744]



(8a)



(8b)

, respectively,
wherein

L^3, L^4, and R^5 are defined the same as claim 1, and

m and n are defined the same as claim 1.

3. The compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein

L^3 is -C(=O)-, an optionally substituted C_{1-6} alkylene group, or an optionally substituted 4- to 10-membered non-aryl heterocyclylene.

4. The compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein

L^3 is $-(CR^{30}R^{31})_{n1}-$ or 4- to 10-membered non-aryl heterocyclylene,

R^{30} and R^{31} each independently, or if there are multiple instances of each of them, all of them independently represent
1) a hydrogen atom,
2) an optionally substituted C_{1-4} alkyl group, or
3) optionally substituted C_{6-10} aryl,

n1 is 1, 2, or 3,

L^4 is a single bond or $-(CR^{40}R^{41})_{n2}-$,

R^{40} and R^{41} each independently, or if there are multiple instances of each of them, all of them independently represent

1) a hydrogen atom,

2) $-NR^{a9}R^{a10}$,

3) an optionally substituted C_{1-4} alkyl group, or

4) $-OR^{c4}$ or

R^{40} and R^{41}, together with the carbon atom to which they are attached, form a C_{3-6} alicyclic group or a 4- to 6-membered non-aryl heterocycle,

R^{a9}, R^{a10}, and R^{c4} are the same or different, each independently

1) a hydrogen atom,

2) an optionally substituted C_{1-6} alkyl group, or

3) an optionally substituted C_{3-10} alicyclic group,

wherein R^{a9} and R^{a10} together may form an optionally substituted 4- to 10-membered nitrogen-containing non-aryl heterocycle, and

n2 is 0, 1, or 2.

5. The compound or the pharmaceutically acceptable salt thereof according to claim 4, wherein n1 is 1 or 2, and n2 is 0 or 1.

6. The compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein

L^3 is $-CR^{30}R^{31}-$ or 4- to 10-membered non-aryl heterocyclylene,

R^{30} and R^{31} each independently represent,

1) a hydrogen atom,

2) a C_{1-4} alkyl group (wherein the group is optionally substituted with halogen, $-NR^{a11}R^{a12}$, or $-OR^{c6}$), or

3) C_6 aryl (wherein the group is optionally substituted with halogen, $-NR^{a13}R^{a14}$, $-OR^{c7}$, or a C_{1-3} alkyl group (wherein the group is optionally substituted with halogen, $-NR^{a15}R^{a16}$, or $-OR^{c8}$)),

L^4 is a single bond or $-(CR^{40}R^{41})_{n2}-$,

R^{40} and R^{41} each independently represent

1) a hydrogen atom,

2) $-NR^{a9}R^{a10}$,

3) a C_{1-4} alkyl group (wherein the group is optionally substituted with halogen, $-NR^{a17}R^{a18}$, or $-OR^{c9}$), or

4) $-OR^{c4}$, or

R^{40} and R^{41}, together with the carbon atom to which they are attached, form a C_{3-6} alicyclic group,

R^{a9}, R^{a10}, R^{a11}, R^{a12}, R^{a13}, R^{a14}, R^{a15}, R^{a16}, R^{a17}, R^{a18}, R^{c4}, R^{c6}, R^{c7}, R^{c8}, and R^{c9} are the same or different, each independently representing

1) a hydrogen atom, or

2) a C_{1-4} alkyl group (wherein the group is optionally substituted with halogen, $-NR^{a19}R^{a20}$, or $-OR^{c10}$),

R^{a19}, R^{a20}, and R^{c10} are the same or different, each independently representing

1) a hydrogen atom, or

2) a C_{1-4} alkyl group (wherein the group is optionally substituted with halogen),

wherein each combination of R^{a9} and R^{a10}, R^{a11} and R^{a12}, R^{a13} and R^{a14}, R^{a15} and R^{a16}, R^{a17} and R^{a18}, or R^{a19} and R^{a20} together may form an optionally substituted 4- to 7-membered nitrogen-containing non-aryl heterocycle, and

n2 is 0 or 1.

7. The compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein

L^3 is $-CH_2-$, $-CH(CH_2NH_2)-$, or $-CH(CH_2OH)-$, and

L^4 is a single bond, $-CH_2-$, $-CH(NH_2)-$, $-CMe(NH_2)-$, $-CEt(NH_2)-$, $-C(iso\text{-}Pr)(NH_2)-$, $-CH(CH_2NH_2)-$, $-CH(OH)-$, $-CH(CH_2OH)-$, $-C(CH_2OH)_2-$, or

[Chemical Formula 745]



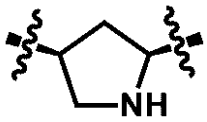
.

8. The compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein L^3 is 4- to 10-membered non-aryl heterocyclylene.

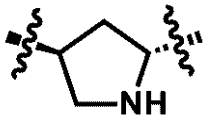
9. The compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein L^3 is 5-membered non-aryl heterocyclylene.

10. The compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein L^3 is

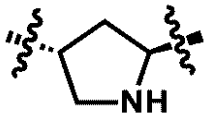
[Chemical Formula 746]



[Chemical Formula 747]

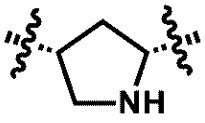


[Chemical Formula 748]



or

[Chemical Formula 749]



.

11. The compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein L^4 is a single bond.

12. The compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein R^5 is

1) C_{6-10} aryl, or

2) 5- to 10-membered heteroaryl,

(wherein each substituent from 1) to 2) is optionally substituted, and if two substituents further substituted with the substituent of 1) or 2) are each substituted on adjacent atoms within a ring, the two substituents together may further form a condensed ring structure).

13. The compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein

R^5 is C_6 aryl (i.e., phenyl) or 5-membered, 6-membered, 9-membered, or 10-membered heteroaryl,

each group of R^5 is optionally substituted with each of R^{6a} or R^{6b} at all chemically substitutable positions on a carbon atom or a nitrogen atom within a ring thereof,

wherein R^{6a}, which are substituents on the carbon atom, if there are multiple instances on the same ring, are all independently selected from the group consisting of

1) a hydrogen atom,

2) a hydroxyl group,

3) a cyano group,

4) halogen,

5) a C_{1-4} alkyl group,

6) a C_{3-10} alicyclic group,

7) a C_{1-4} alkoxy group,

8) a C_{3-10} alicyclic oxy group,

9) a C_{6-10} aryloxy group,

10) a 5- or 6-membered heteroaryloxy group,

11) a 4- to 10-membered non-aryl heterocyclyl oxy group,

(wherein each substituent from 5) and 11) is optionally substituted),

12) $-SO_2-NR^{e2}R^{f2}$,

13) $-NR^{g2}-CR^{e2}(=NR^{f2})$,

14) $-NR^{g2}-CR^{e2}(=N-OR^{f2})$,

15) $-NR^{h2}-C(=NR^{g2})NR^{e2}R^{f2}$,

16) $-NR^{h2}-C(=N-OR^{g2})NR^{e2}R^{f2}$,

17) $-NR^{i2}-C(=NR^{h2})NR^{g2}-NR^{e2}R^{f2}$,

18) $-NR^{i2}-C(=N-OR^{h2})NR^{g2}-NR^{e2}R^{f2}$,

19) $-C(=NR^{e2})R^{f2}$,

20) $-C(=N-OR^{e2})R^{f2}$,

21) $-C(=NR^{h2})-NR^{e2}R^{f2}$,

22) $-C(=NR^{h2})NR^{g2}-NR^{e2}R^{f2}$,

23) $-C(=N-OR^{h2})NR^{g2}-NR^{e2}R^{f2}$,

24) $-NR^{e2}R^{f2}$,

25) $-NR^{g2}-NR^{e2}R^{f2}$,

26) $-NR^{e2}OR^{f2}$,

27) $-NR^{e2}-C(=O)R^{f2}$,

28) $-C(=O)NR^{e2}R^{f2}$,

29) $-C(=O)NR^{e2}OR^{f2}$,

30) $-C(=O)NR^{g2}-NR^{e2}R^{f2}$,

31) $-C(=O)R^{e2}$,

32) $-C(=O)OR^{e2}$, and

33) $-C(=N-OR^{h2})NR^{e2}R^{f2}$,

R^{6b}, which are substituents on the nitrogen atom, if there are multiple instances on the same ring, are all independently selected from the group consisting of

1) a hydrogen atom,

2) a hydroxyl group,

3) a C_{1-4} alkyl group

(wherein the alkyl group is optionally substituted),

4) a C_{3-10} alicyclic group

(wherein the alicyclic group is optionally substituted),

5) $-C(=NR^{e2})R^{f2}$,

6) $-C(=N-OR^{e2})R^{f2}$,

7) $-SO_2-NR^{e2}R^{f2}$,

8) $-C(=NR^{h2})-NR^{e2}R^{f2}$,

9) $-C(=NR^{h2})NR^{g2}-NR^{e2}R^{f2}$,

10) $-C(=N-OR^{h2})NR^{g2}-NR^{e2}R^{f2}$,

11) $-C(=O)NR^{e2}R^{f2}$,

12) $-C(=O)NR^{e2}OR^{f2}$,

13) $-C(=O)NR^{g2}-NR^{e2}R^{f2}$,

14) $-C(=O)R^{e2}$, and

15) $-C(=N-OR^{h2})NR^{e2}R^{f2}$, or

if a combination of two R^{6a} or R^{6a} and R^{6b} are each substituted on adjacent atoms within a ring, the two substituents together may form an optionally substituted 5- to 6-membered heteroaryl ring or an optionally substituted 5- to 7-membered non-aryl heterocycle, which further fuses to an attachment moiety between the adjacent atoms within the ring,

R^{e2}, R^{f2}, R^{g2}, R^{h2}, and R^{i2} are the same or different, each independently

1) a hydrogen atom,

2) a C_{1-6} alkyl group,

3) a C_{3-10} alicyclic group,

4) C_{6-10} aryl,

5) 5- or 6-membered heteroaryl, or

6) a 4- to 10-membered non-aryl heterocycle,

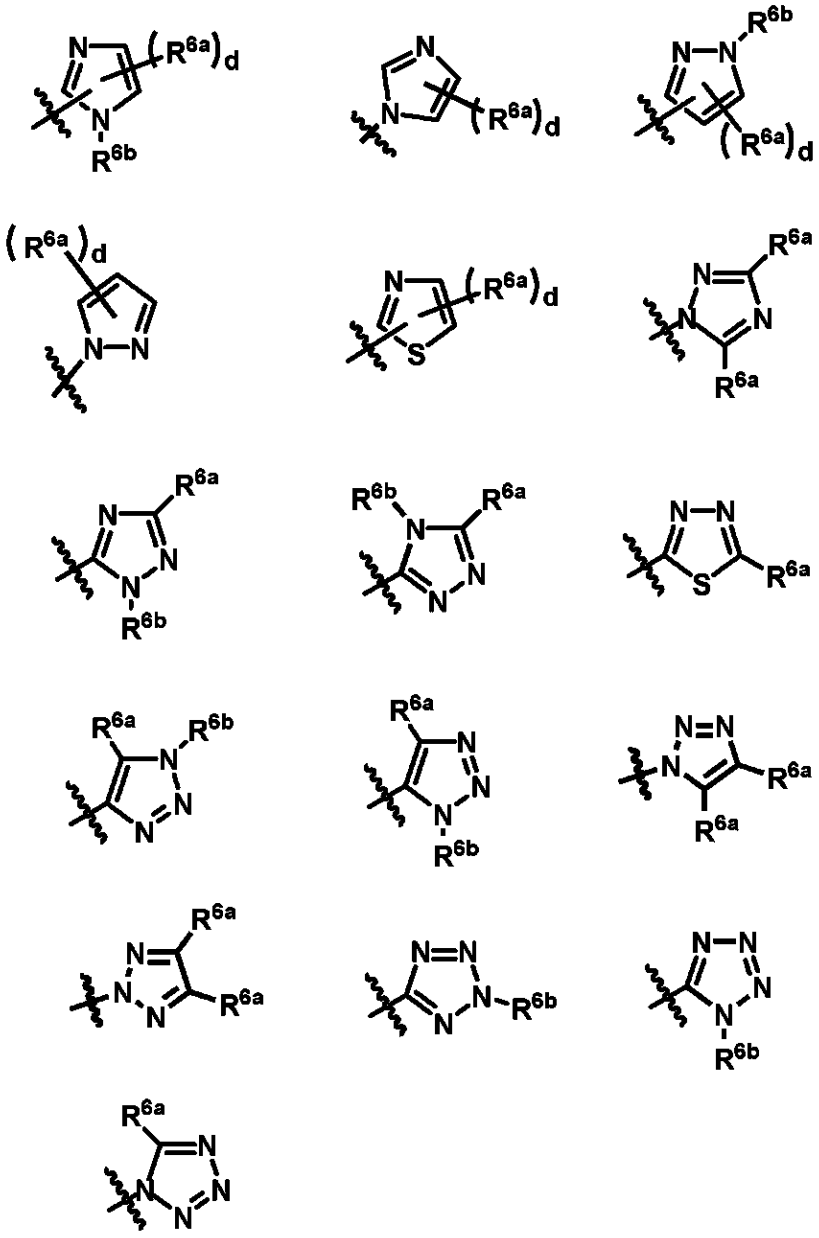
(wherein each substituent from 2) to 6) is optionally substituted), and

a combination of R^{e2} and R^{f2}, when attached to the same nitrogen atom, together may form an optionally substituted 4- to 10-membered nitrogen-containing non-aryl heterocycle.

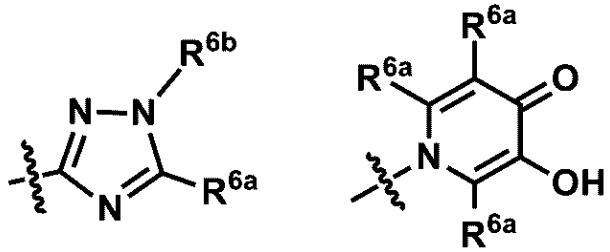
14. The compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein

R^5 is C_6 aryl or 5-membered, 6-membered, 9-membered, or 10-membered heteroaryl selected from the group consisting of

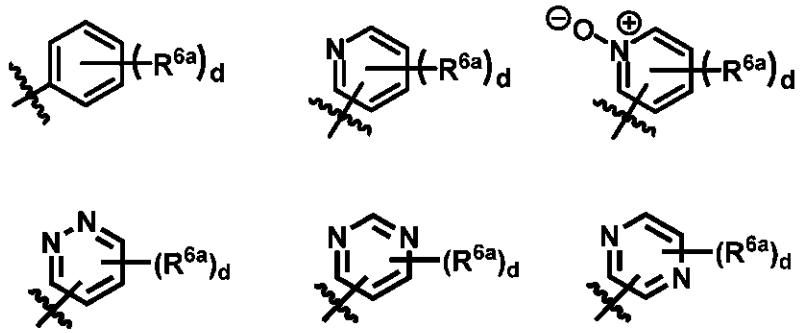
[Chemical Formula 750]



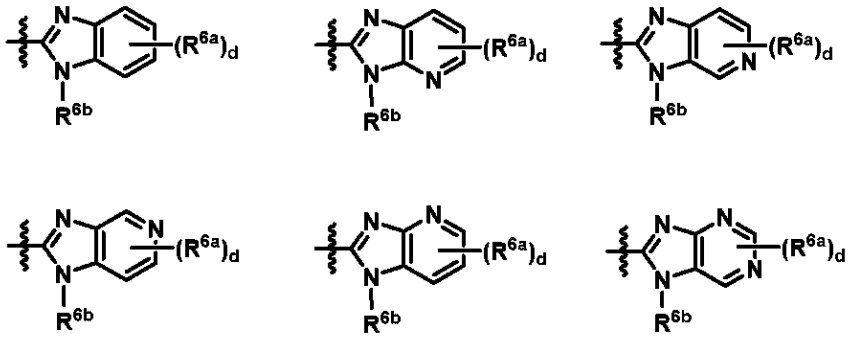
[Chemical Formula 751]

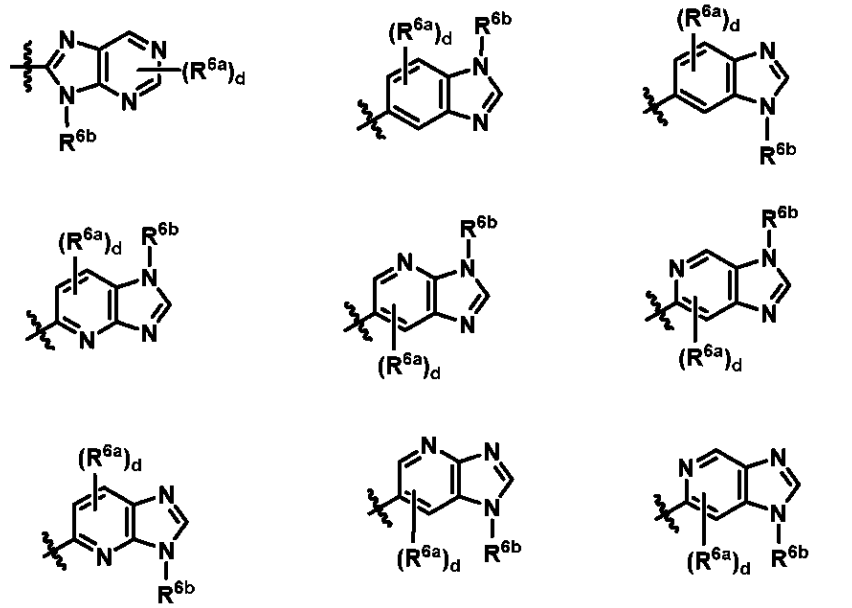


[Chemical Formula 752]

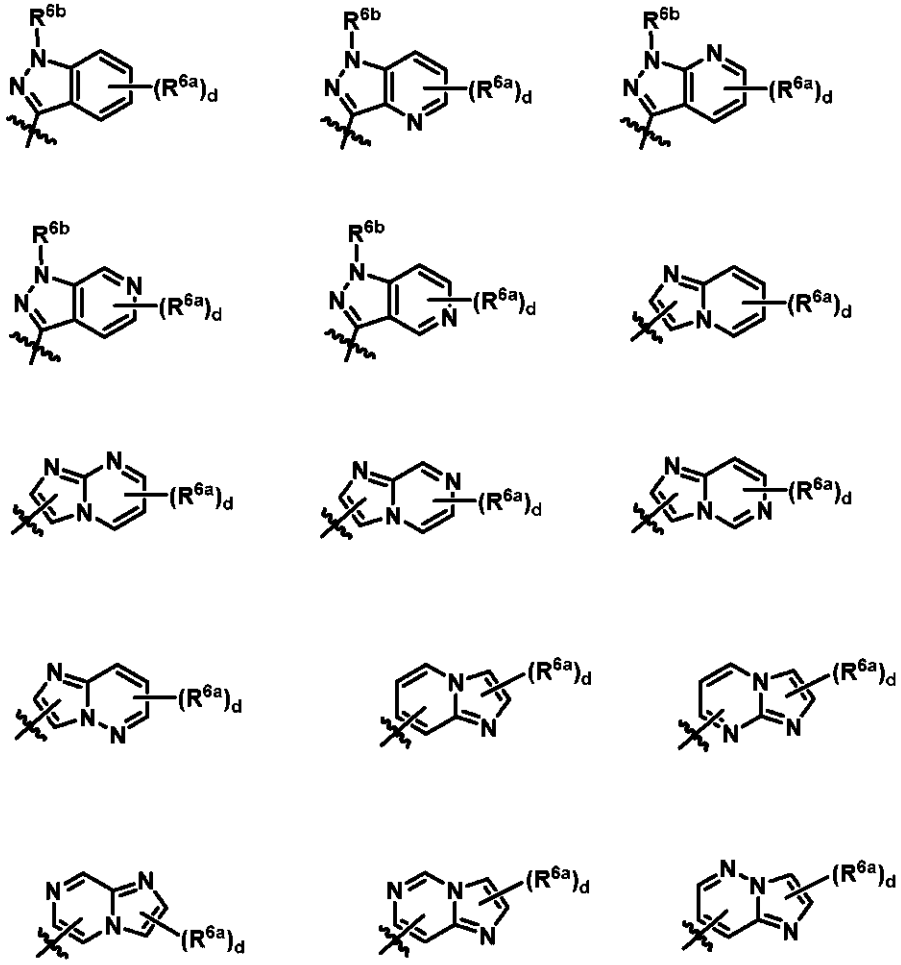


[Chemical Formula 753]

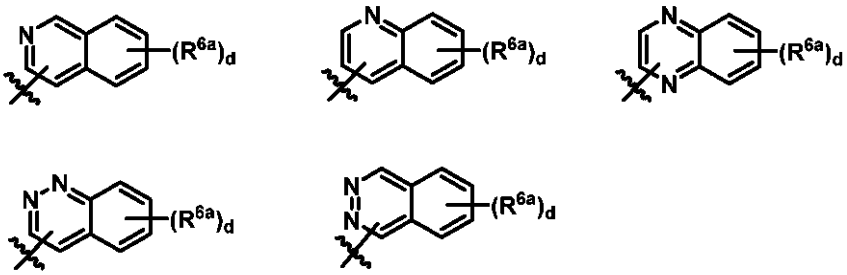




[Chemical Formula 754]



[Chemical Formula 755]



d is the number of chemically substitutable positions on a ring of each group by R^{6a},

wherein R^{6a}, which are substituents on the carbon atom, if there are multiple instances on the same ring, are all independently selected from the group consisting of

1) a hydrogen atom,

2) a hydroxyl group,

3) a cyano group,

4) halogen,

5) a C_{1-4} alkyl group,

6) a C_{3-10} alicyclic group,

7) a C_{1-4} alkoxy group,

8) a C_{3-10} alicyclic oxy group,

9) a C_{6-10} aryloxy group,

10) a 5- or 6-membered heteroaryloxy group,

11) a 4- to 10-membered non-aryl heterocyclyl oxy group,

(wherein each substituent from 5) and 11) is optionally substituted),

12) $-SO_2-NR^{e2}R^{f2}$,

13) $-NR^{g2}-CR^{e2}(=NR^{f2})$,

14) $-NR^{g2}-CR^{e2}(=N-OR^{f2})$,

15) $-NR^{h2}-C(=NR^{g2})NR^{e2}R^{f2}$,

16) $-NR^{h2}-C(=N-OR^{g2})NR^{e2}R^{f2}$,

17) $-NR^{i2}-C(=NR^{h2})NR^{g2}-NR^{e2}R^{f2}$,

18) $-NR^{i2}-C(=N-OR^{h2})NR^{g2}-NR^{e2}R^{f2}$,

19) $-C(=NR^{e2})R^{f2}$,

20) $-C(=N-OR^{e2})R^{f2}$,

21) $-C(=NR^{h2})-NR^{e2}R^{f2}$,

22) $-C(=NR^{h2})NR^{g2}-NR^{e2}R^{f2}$,

23) $-C(=N-OR^{h2})NR^{g2}-NR^{e2}R^{f2}$,

24) $-NR^{e2}R^{f2}$,

25) $-NR^{g2}-NR^{e2}R^{f2}$,

26) $-NR^{e2}OR^{f2}$,

27) $-NR^{e2}-C(=O)R^{f2}$,

28) $-C(=O)NR^{e2}R^{f2}$,

29) $-C(=O)NR^{e2}OR^{f2}$,

30) $-C(=O)NR^{g2}-NR^{e2}R^{f2}$,

31) $-C(=O)R^{e2}$,

32) $-C(=O)OR^{e2}$, and

33) $-C(=N-OR^{h2})NR^{e2}R^{f2}$,

R^{6b}, which are substituents on the nitrogen atom, if there are multiple instances on the same ring, are all independently selected

from the group consisting of

1) a hydrogen atom,

2) a hydroxyl group,

3) a C_{1-4} alkyl group

(wherein the alkyl group is optionally substituted),

4) a C_{3-10} alicyclic group

(wherein the alicyclic group is optionally substituted),

5) $-C(=NR^{e2})R^{f2}$,

6) $-C(=N-OR^{e2})R^{f2}$,

7) $-SO_2-NR^{e2}R^{f2}$,

8) $-C(=NR^{h2})-NR^{e2}R^{f2}$,

9) $-C(=NR^{h2})NR^{g2}-NR^{e2}R^{f2}$,

10) $-C(=N-OR^{h2})NR^{g2}-NR^{e2}R^{f2}$,

11) $-C(=O)NR^{e2}R^{f2}$,

12) $-C(=O)NR^{e2}OR^{f2}$,

13) $-C(=O)NR^{g2}-NR^{e2}R^{f2}$,

14) $-C(=O)R^{e2}$, and

15) $-C(=N—OR^{h2})NR^{e2}R^{f2}$, or

if a combination of two R^{6a} or R^{6a} and R^{6b} are each substituted on adjacent atoms within a ring, the two substituents together may form an optionally substituted 5- to 6-membered heteroaryl ring or an optionally substituted 5- to 7-membered non-aryl heterocycle, which further fuses to an attachment moiety between the adjacent atoms within the ring,

R^{e2}, R^{f2}, R^{g2}, R^{h2}, and R^{i2} are the same or different, each independently

1) a hydrogen atom,

2) a C_{1-6} alkyl group,

3) a C_{3-10} alicyclic group,

4) C_{6-10} aryl,

5) 5- or 6-membered heteroaryl, or

6) a 4- to 10-membered non-aryl heterocycle,

(wherein each substituent from 2) to 6) is optionally substituted),

and

a combination of R^{e2} and R^{f2}, when attached to the same nitrogen atom, together may form an optionally substituted 4- to 10-membered nitrogen-containing non-aryl heterocycle.

15. The compound or the pharmaceutically acceptable salt thereof according to claim 13, wherein

R^{6a}, if there are multiple instances on the same ring, are all independently selected from the group consisting of

1) a hydrogen atom,

2) a hydroxyl group,

3) halogen,

4) a C_{1-4} alkyl group,

(wherein the alkyl group is optionally substituted with $NR^{e2}R^{f2}$, $-C(=O)OR^{f2}$, $-C(=O)NR^{e2}R^{f2}$, $-C(=O)NR^{e2}(OR^{f2})$, or a hydroxyl group),

5) a C_{1-4} alkoxy group,

6) $-NR^{e2}R^{f2}$,

7) $-C(=O)NR^{e2}R^{f2}$, and

8) $-C(=O)OR^{e2}$, and

each of R^{6b}, if there are multiple instances on the same ring, are all independently selected from the group consisting of

1) a hydrogen atom,

2) a hydroxyl group, and

3) a C_{1-4} alkyl group,

(wherein the alkyl group is optionally substituted with $NR^{e2}R^{f2}$, $-C(=O)OR^{f2}$, $-C(=O)NR^{e2}R^{f2}$, $-C(=O)NR^{e2}(OR^{f2})$, or a hydroxyl group).

16. The compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein R^5 is $-C(=O)NR^{50}R^{51}$.

17. The compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein

R^{50} represents

1) a hydrogen atom,
2) an optionally substituted C_{1-4} alkyl group,
3) a hydroxyl group,
4) an optionally substituted C_{1-4} alkoxy group, or
5) an optionally substituted C_{1-6} alkylsulfonyl group,

R^{51} represents

1) a hydrogen atom, or
2) an optionally substituted C_{1-4} alkyl group, or

R^{50} and R^{51} together may form a 4- to 6-membered nitrogen-containing non-aryl heterocycle.

18. The compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein

R^{50} represents

1) a hydrogen atom,
2) a C_{1-4} alkyl group (wherein the group is optionally substituted with a cyclopropyl group, $-NH_2$, -NHMe, $-C(=O)NH_2$, -C(=O)NHMe, $-C(=O)NMe_2$, or a -hydroxyl group),
3) a hydroxyl group,
4) a C_{1-4} alkoxy group (wherein the group is optionally substituted with a cyclopropyl group, $-NH_2$, -NHMe, or a -hydroxyl group), or
5) a C_{1-4} alkylsulfonyl group, and

R^{51} is a hydrogen atom.

19. The compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein R^5 is $-C(=O)OR^{20}$.

20. The compound or the pharmaceutically acceptable salt thereof according to claim 19, wherein R^{20} is

1) a hydrogen atom, or
2) an optionally substituted C_{1-4} alkyl group.

21. The compound or the pharmaceutically acceptable salt thereof

according to claim 17, wherein

L^3 is $-CH_2-$, and

L^4 is a single bond, $-CH(NH_2)-$, or $-CMe(NH_2)-$.

22. The compound or the pharmaceutically acceptable salt thereof according to claim 21, wherein L^4 is

[Chemical Formula 756]



,

[Chemical Formula 757]



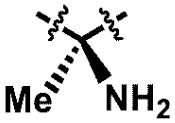
,

[Chemical Formula 758]



, or

[Chemical Formula 759]



.

23. The compound or the pharmaceutically acceptable salt thereof according to claim 19, wherein R^{20} is a hydrogen atom.

24. The compound or the pharmaceutically acceptable salt thereof according to claim 1 wherein

R^5 is $-NR^{e1}R^{f1}$,

L^3 is $-CH_2-$,

L^4 is $-CR^{40}R^{41}-$, and

R^{40} and R^{41} are each independently a C_{1-4} alkyl group substituted

with a hydroxyl group, or together with the carbon atom to which they are attached, form a C_{3-6} alicyclic group.

25. The compound or the pharmaceutically acceptable salt thereof according to claim 24, wherein

R^{e1} and R^{f1} are the same or different, each independently

1) a hydrogen atom, or

2) an optionally substituted C_{1-3} alkyl group, and

L^4 is

[Chemical Formula 762]



.

26. The compound or the pharmaceutically acceptable salt thereof according to claim 24, wherein

R^{e1} and R^{f1} are the same or different, each independently

1) a hydrogen atom, or

2) an optionally substituted C_{1-3} alkyl group, and

L^4 is a C_{1-4} alkylene group substituted with a hydroxyl group.

27. The compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein L^4 is a single bond, or a C_{1-6} alkylene group optionally substituted with $-NR^{21}R^{22}$ or $=NOR^{23}$, wherein R^{21}, R^{22}, and R^{23} are each independently a hydrogen atom, an optionally substituted C_{1-6} alkyl group, or an optionally substituted 4- to 10-membered non-aryl heterocyclyl carbonyl group.

28. The compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein L^4 is a single bond, $-CH_2-$, $-CH(NH_2)-$, $-CMe(NH_2)-$, $-CH(NHMe)-$, $-CD(NH_2)-$(wherein D represents a heavy hydrogen atom), $-CH_2CH_2-$, or $-CH(NH_2)-CH_2-$, wherein if an amino group is present in L^4, carbon that attaches to the amino group attaches to L^3.

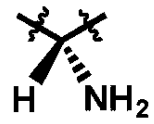
29. The compound or the pharmaceutically acceptable salt thereof according to claim 28, wherein

L^3 is -C(=O)-, and

L^4 is a single bond, $-CH_2-$, $-CH(NH_2)-$, $-CMe(NH_2)-$, or $-CH(NH_2)-CH_2-$.

30. The compound or the pharmaceutically acceptable salt thereof according to claim 29, wherein L^4 is one of the following isomeric structures:

[Chemical Formula 763]



,

[Chemical Formula 764]



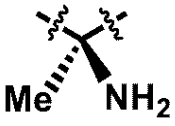
,

[Chemical Formula 765]



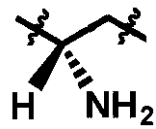
,

[Chemical Formula 766]



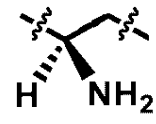
,

[Chemical Formula 767]



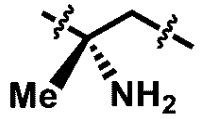
,

[Chemical Formula 768]



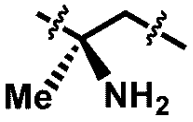
,

[Chemical Formula 769]



, or

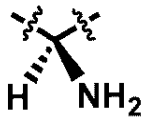
[Chemical Formula 770]



.

31. The compound or the pharmaceutically acceptable salt thereof according to claim 29, wherein L^4 is

[Chemical Formula 773]



or

[Chemical Formula 774]



.

32. The compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein R^5 is a hydrogen atom, an optionally substituted C_{1-6} alkyl group, an optionally substituted C_{3-10} alicyclic group, an optionally substituted 4- to 10-membered non-aryl heterocycle, optionally substituted C_{6-10} aryl, optionally substituted 5- or 6-membered heteroaryl, an optionally substituted C_{1-6} alkylthio group, or $-NR^{e1}OH$, wherein R^{e1} is a hydrogen atom or an optionally substituted C_{1-6} alkyl group.

33. The compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein R^5 is optionally substituted 5- or 6-membered heteroaryl.

34. The compound or the pharmaceutically acceptable salt thereof

according to claim 1, wherein R^5 is an optionally substituted C_{4-10} alicyclic group or an optionally substituted 4- to 10-membered non-aryl heterocycle.

35. The compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein

L^4 is

1) $-(CH_2)_p-CR^{10}(NHR^{11})-$,

2) $-(CH_2)_q-CR^{12}R^{13}-$, or

3) $-(CH_2)_p-CR^{10}(NHR^{11})-(CH_2)_q-CR^{12}R^{13}-$ (wherein p and q are independently 0 or 1),

R^{10} is

1) a hydrogen atom,

2) a carboxyl group, or

3) $-C(=O)NR^{10a}R^{10b}$,

R^{11} is

1) a hydrogen atom,

2) $-C(=O)R^{11a}$, or

3) an optionally substituted 5- or 6-membered non-aryl heterocyclyl carbonyl group,

wherein if R^{10} is $-C(=O)NR^{10a}R^{10b}$, R^{10b} and R^{11} together may form $-CH_2CH_2-$,

R^{12} is

1) a hydrogen atom, or

2) an optionally substituted C_{1-4} alkyl group,

R^{13} is

1) a hydrogen atom,

2) a hydroxyl group,

3) an optionally substituted C_{1-4} alkyl group,

4) a sulfanyl group,

5) a carboxyl group,

6) an optionally substituted C_{1-4} alkylthio group,

7) $-NR^{13a}R^{13b}$,

8) $-NR^{13a}-C(=O)R^{13b}$,

9) an optionally substituted 5- or 6-membered non-aryl heterocyclyl carbonylamino group,

10) $-NR^{13a}-C(=O)NR^{13b}R^{13c}$,

11) $-C(=O)NR^{13a}R^{13b}$,

12) $-C(=O)NR^{13a}OR^{13b}$,

13) $-S(=O)_2-R^{13a}$,

14) $-S(=O)_2-NR^{13a}R^{13b}$,

15) $-C(=O)NR^{13a}-S(=O)_2-R^{13b}$, or

16) $-C(=O)NR^{13a}-S(=O)_2-NR^{13b}R^{13c}$, and

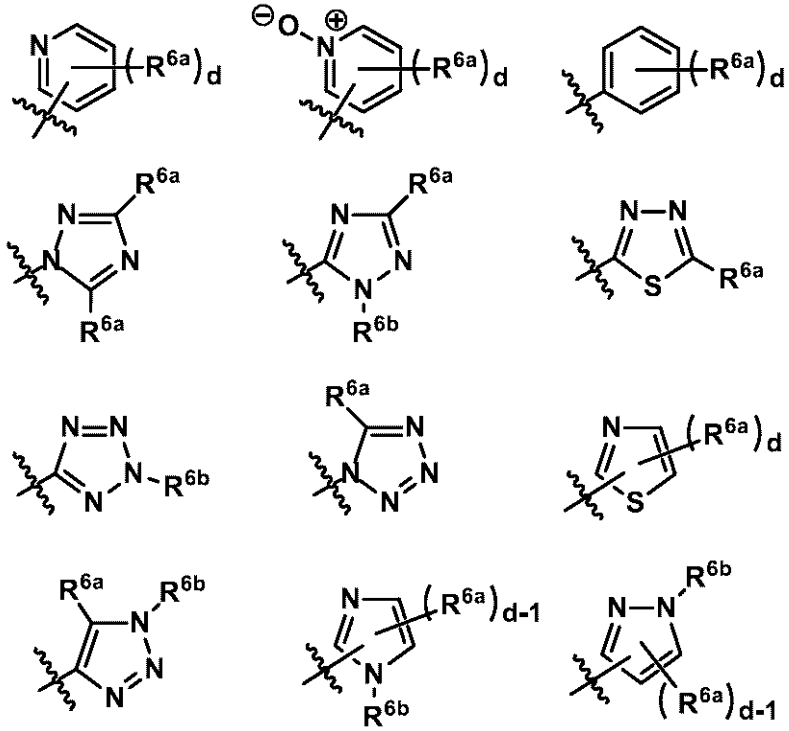
R^{10a}, R^{10b}, R^{11a}, R^{13a}, R^{13b}, and R^{13c} are each independently a hydrogen atom or an optionally substituted C_{1-4} alkyl group.

36. The compound or the pharmaceutically acceptable salt thereof according to claim 35, wherein R^5 is a hydrogen atom or an optionally substituted C_{1-4} alkyl group.

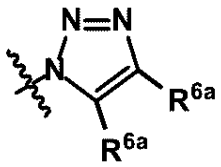
37. The compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein

R^5 is selected from the group consisting of

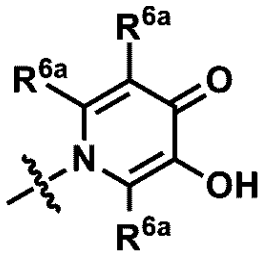
[Chemical Formula 779]



[Chemical Formula 780]



[Chemical Formula 781]



,

subscript d is the number of substitutable positions on a ring of R^5,

each R^{6a} is independently selected from the group consisting of

1) a hydrogen atom,

2) a hydroxyl group,

3) a cyano group,

4) a nitro group,

5) halogen,

6) a C_{1-4} alkyl group,

7) a C_{3-10} alicyclic group,

8) a C_{1-4} alkoxy group,

9) a C_{3-10} alicyclic oxy group,

10) a C_{6-10} aryloxy group,

11) a 5- or 6-membered heteroaryloxy group,

12) a 4- to 10-membered non-aryl heterocyclyl oxy group,

(wherein each substituent from 6) to 12) is optionally substituted),

13) $-SO_2-NR^{e2}R^{f2}$,

14) $-NR^{g2}-CR^{e2}(=NR^{f2})$,

15) $-NR^{g2}-CR^{e2}(=N-OR^{f2})$,

16) $-NR^{h2}-C(=NR^{g2})NR^{e2}R^{f2}$,

17) $-NR^{h2}-C(=N-OR^{g2})NR^{e2}R^{f2}$,

18) $-NR^{i2}-C(=NR^{h2})NR^{g2}-NR^{e2}R^{f2}$,

19) $-NR^{i2}-C(=N-OR^{h2})NR^{g2}-NR^{e2}R^{f2}$,

20) $-C(=NR^{e2})R^{f2}$,

21) $-C(=N-OR^{e2})R^{f2}$,

22) $-C(=NR^{h2})-NR^{e2}R^{f2}$,

23) $-C(=NR^{h2})NR^{g2}-NR^{e2}R^{f2}$,

24) $-C(=N-OR^{h2})NR^{g2}-NR^{e2}R^{f2}$,

25) $-NR^{e2}R^{f2}$,

26) $-NR^{g2}-NR^{e2}R^{f2}$,

27) $-NR^{e2}OR^{f2}$,

28) $-NR^{e2}-C(=O)R^{f2}$,

29) $-C(=O)NR^{e2}R^{f2}$,

30) $-C(=O)NR^{e2}OR^{f2}$,

31) $-C(=O)NR^{g2}-NR^{e2}R^{f2}$,

32) $-C(=O)R^{e2}$,

33) $-C(=O)OR^{e2}$, and

34) $-C(=N-OR^{h2})NR^{e2}R^{f2}$, and

each R^{6b} is independently selected from the group consisting of

1) a hydrogen atom,

2) a hydroxyl group,

3) a C_{1-4} alkyl group

(wherein the alkyl group is optionally substituted),

4) a C_{3-10} alicyclic group

(wherein the alicyclic group is optionally substituted),

5) $-C(=NR^{e2})R^{f2}$,

6) $-C(=N-OR^{e2})R^{f2}$,

7) $-SO_2-NR^{e2}R^{f2}$,

8) $-C(=NR^{h2})-NR^{e2}R^{f2}$,

9) $-C(=NR^{h2})NR^{g2}-NR^{e2}R^{f2}$,

10) $-C(=N-OR^{h2})NR^{g2}-NR^{e2}R^{f2}$,

11) $-C(=O)NR^{e2}R^{f2}$,

12) $-C(=O)NR^{e2}OR^{f2}$,

13) $-C(=O)NR^{g2}-NR^{e2}R^{f2}$,

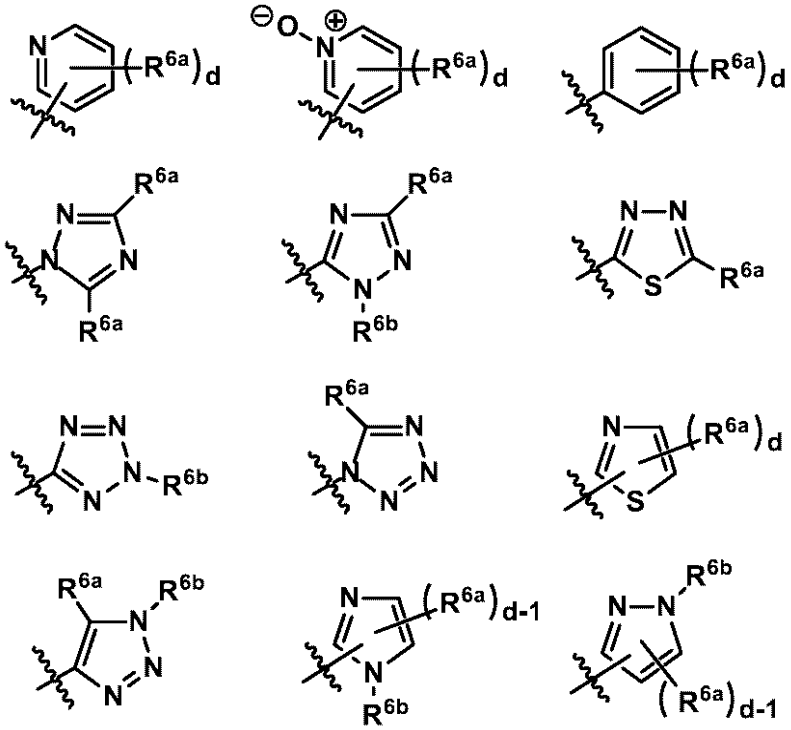
14) $-C(=O)R^{e2}$, and

15) $-C(=N—OR^{h2})NR^{e2}R^{f2}$.

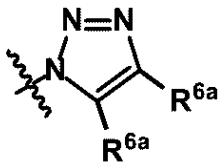
38. The compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein

R^5 is 5- or 6-membered aryl or heteroaryl selected from the group consisting of

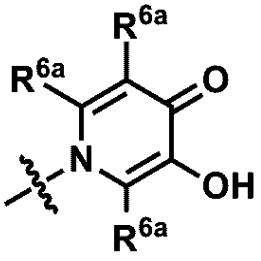
[Chemical Formula 782]



[Chemical Formula 783]



[Chemical Formula 784]



,

subscript d is the number of substitutable positions on a ring of R^5,

each R^{6a} is independently selected from the group consisting of

1) a hydrogen atom,

2) a hydroxyl group,

3) halogen,

4) a C_{1-4} alkyl group

(wherein the alkyl group is optionally substituted with $NR^{e2}R^{f2}$, a

5- or 6-membered non-aryl heterocycle, $-C(=O)OR^{f2}$, or a hydroxyl group),

5) a C_{1-4} alkoxy group,

6) $-NR^{e2}R^{f2}$, and

7) $-C(=O)OR^{e2}$, and

each R^{6b} is independently selected from the group consisting of

1) a hydrogen atom,

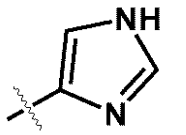
2) a hydroxyl group, and

3) a C_{1-4} alkyl group

(wherein the alkyl group is optionally substituted with $NR^{e2}R^{f2}$, $-C(=O)NR^{e2}R^{f2}$, $-C(=O)OR^{f2}$, or a hydroxyl group).

39. The compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein R^5 is

[Chemical Formula 785]

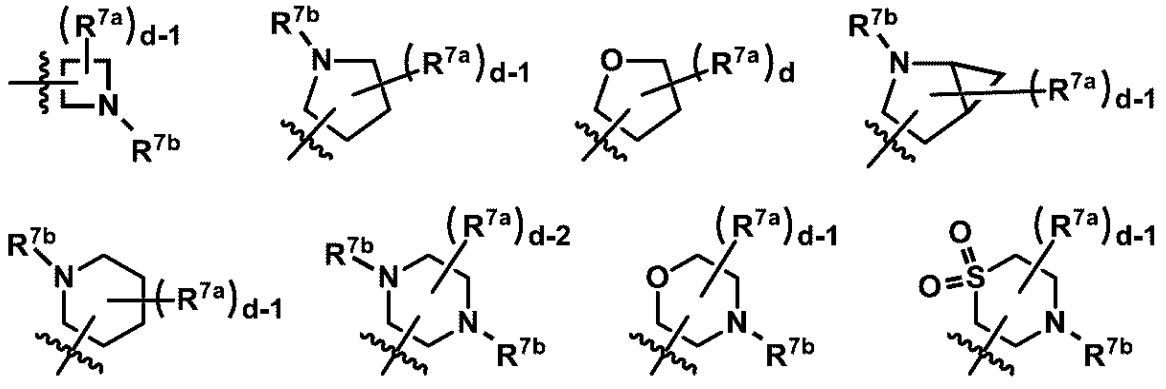


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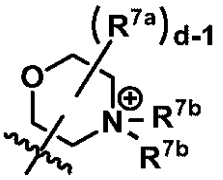
40. The compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein

R^5 is a 4- to 6-membered non-aryl heterocycle selected from the group consisting of

[Chemical Formula 786]



[Chemical Formula 787]



,

subscript d is the number of substitutable positions on a ring of R^5,

each R^{7a} is independently selected from the group consisting of

1) a hydrogen atom,

2) a hydroxyl group,

3) a cyano group,

4) halogen,

5) a C_{1-4} alkyl group,

6) a C_{3-10} alicyclic group,

7) a C_{1-4} alkoxy group,

8) a C_{3-10} alicyclic oxy group,

9) a C_{6-10} aryloxy group,

10) a 5- or 6-membered heteroaryloxy group,

11) a 4- to 10-membered non-aryl heterocyclyl oxy group,

(wherein each substituent from 5) and 11) is optionally substituted),

12) $-SO_2-NR^{e3}R^{f3}$,

13) $-NR^{g2}-CR^{e3}(=NR^{f3})$,

14) $-NR^{g2}-CR^{e3}(=N-OR^{f3})$,

15) $-NR^{h2}-C(=NR^{g2})NR^{e3}R^{f3}$,

16) $-NR^{h2}-C(=N-OR^{g2})NR^{e3}R^{f3}$,

17) $-NR^{i2}-C(=NR^{h2})NR^{g2}-NR^{e3}R^{f3}$,

18) $-NR^{i2}-C(=N-OR^{h2})NR^{g2}-NR^{e3}R^{f3}$,

19) $-C(=NR^{e3})R^{f3}$,

20) $-C(=N-OR^{e3})R^{f3}$,

21) $-C(=NR^{h2})-NR^{e3}R^{f3}$,

22) $-C(=NR^{h2})NR^{g2}-NR^{e3}R^{f3}$,

23) $-C(=N-OR^{h2})NR^{g2}-NR^{e3}R^{f3}$,

24) $-NR^{e3}R^{f3}$,

25) $-NR^{g2}-NR^{e3}R^{f3}$,

26) $-NR^{e3}OR^{f3}$,

27) $-NR^{e3}-C(=O)R^{f3}$,

28) $-C(=O)NR^{e3}R^{f3}$,

29) $-C(=O)NR^{e3}OR^{f3}$,

30) $-C(=O)NR^{g2}-NR^{e3}R^{f3}$,

31) $-C(=O)R^{e3}$,

32) $-C(=O)OR^{e3}$, and

33) $-C(=N-OR^{h2})NR^{e3}R^{f3}$,

each R^{7b} is independently selected from the group consisting of

1) a hydrogen atom,

2) a hydroxyl group,

3) a C_{1-4} alkyl group

(wherein the alkyl group is optionally substituted),

4) a C_{3-10} alicyclic group

(wherein the alicyclic group is optionally substituted),

5) $-C(=NR^{e3})R^{f3}$,

6) $-C(=N-OR^{e3})R^{f3}$,

7) $-SO_2-NR^{e3}R^{f3}$,

8) $-C(=NR^{h2})-NR^{e3}R^{f3}$,

9) $-C(=NR^{h2})NR^{g2}-NR^{e3}R^{f3}$,

10) $-C(=N-OR^{h2})NR^{g2}-NR^{e3}R^{f3}$,

11) $-C(=O)NR^{e3}R^{f3}$,

12) $-C(=O)NR^{e3}OR^{f3}$,

13) $-C(=O)NR^{g2}-NR^{e3}R^{f3}$,

14) $-C(=O)R^{e3}$, and

15) $-C(=N—OR^{h2})NR^{e3}R^{f3}$, and

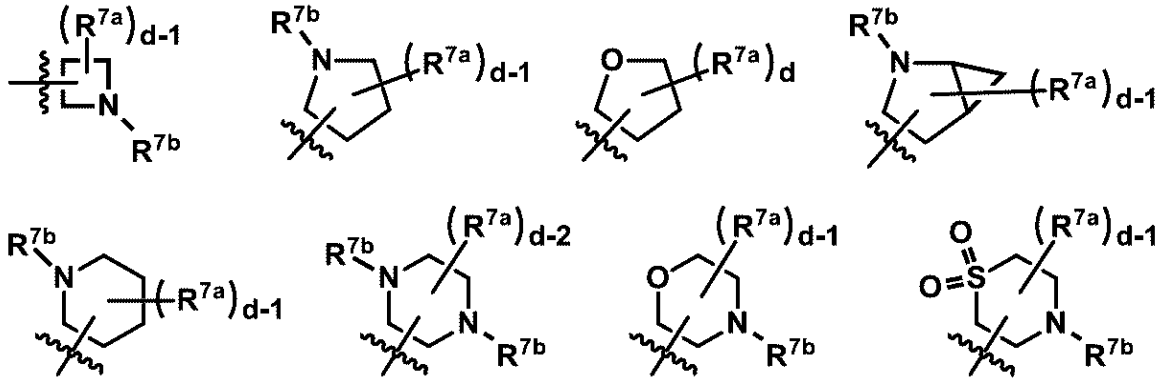
R^{e3}, R^{f3}, R^{g2}, R^{h2}, and R^{i2} are defined the same as R^{e2}, R^{f2}, R^{g2}, R^{h2}, and R^{i2} according to claim 13.

41. The compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein

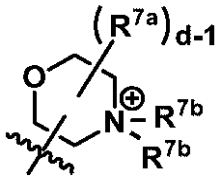
R^5 is a 4- to 6-membered non-aryl heterocycle selected from

the group consisting of

[Chemical Formula 788]



[Chemical Formula 789]



,

subscript d is the number of substitutable positions on a ring of R^5,

each R^{7a} is independently selected from the group consisting of

1) a hydrogen atom,

2) a hydroxyl group,

3) halogen,

4) a C_{1-4} alkyl group

(wherein the alkyl group is optionally substituted with $NR^{e3}R^{f3}$, a 5- or 6-membered non-aryl heterocycle, $-C(=O)OR^{f3}$, or a hydroxyl group),

5) a C_{1-4} alkoxy group,

6) $-NR^{e3}R^{f3}$,

7) $-C(=O)OR^{e3}$,

8) C_{6-10} aryl, and

9) $-C(=O)NR^{e3}R^{f3}$,

each R^{7b} is independently selected from the group consisting of

1) a hydrogen atom,

2) a hydroxyl group, and

3) a C_{1-4} alkyl group

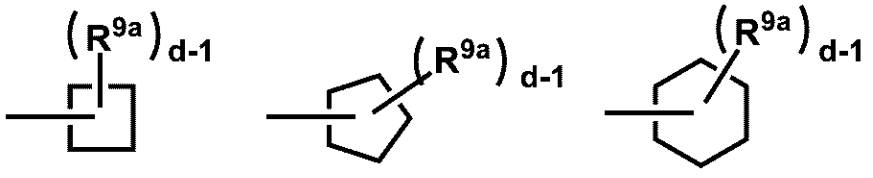
(wherein the alkyl group is optionally substituted with $NR^{e3}R^{f3}$, $-C(=O)OR^{f3}$, or a hydroxyl group), and

wherein R^{e3} and R^{f3} are the same or different, each independently a hydrogen atom, an optionally substituted C_{1-6} alkyl group, or an optionally substituted C_{3-10} alicyclic group.

42. The compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein

R^5 is C_{4-6} cycloalkyl selected from the group consisting of

[Chemical Formula 790]



,

subscript d is the number of substitutable positions on a ring of R^5,

each R^{9a} is independently selected from the group consisting of

1) a hydrogen atom,

2) a hydroxyl group,

3) a cyano group,

4) halogen,

5) a C_{1-4} alkyl group,

6) a C_{3-10} alicyclic group,

7) a C_{1-4} alkoxy group,

8) a C_{3-10} alicyclic oxy group,

9) a C_{6-10} aryloxy group,

10) a 5- or 6-membered heteroaryloxy group,

11) a 4- to 10-membered non-aryl heterocyclyl oxy group,

(wherein each substituent from 5) and 11) is optionally substituted),

12) $-SO_2-NR^{e3}R^{f3}$,

13) $-NR^{g2}-CR^{e3}(=NR^{f3})$,

14) $-NR^{g2}-CR^{e3}(=N-OR^{f3})$,

15) $-NR^{h2}-C(=NR^{g2})NR^{e3}R^{f3}$,

16) $-NR^{h2}-C(=N-OR^{g2})NR^{e3}R^{f3}$,

17) $-NR^{i2}-C(=NR^{h2})NR^{g2}-NR^{e3}R^{f3}$,

18) $-NR^{i2}-C(=N-OR^{h2})NR^{g2}-NR^{e3}R^{f3}$,

19) $-C(=NR^{e3})R^{f3}$,

20) $-C(=N-OR^{e3})R^{f3}$,

21) $-C(=NR^{h2})-NR^{e3}R^{f3}$,

22) $-C(=NR^{h2})NR^{g2}-NR^{e3}R^{f3}$,

23) $-C(=N-OR^{h2})NR^{g2}-NR^{e3}R^{f3}$,

24) $-NR^{e3}R^{f3}$,

25) $-NR^{g2}-NR^{e3}R^{f3}$,

26) $-NR^{e3}OR^{f3}$,

27) $-NR^{e3}-C(=O)R^{f3}$,

28) $-C(=O)NR^{e3}R^{f3}$,

29) $-C(=O)NR^{e3}OR^{f3}$,

30) $-C(=O)NR^{g2}-NR^{e3}R^{f3}$,

31) $-C(=O)R^{e3}$,

32) $-C(=O)OR^{e3}$, and

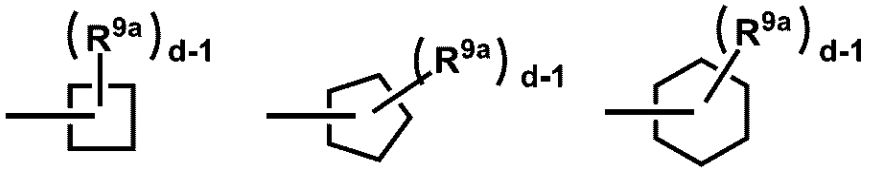
33) $-C(=N-OR^{h2})NR^{e3}R^{f3}$, and

R^{e3}, R^{f3}, R^{g2}, R^{h2}, and R^{i2} are the same or different, each independently a hydrogen atom, an optionally substituted C_{1-6} alkyl group, or an optionally substituted C_{3-10} alicyclic group.

43. The compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein

R^5 is C_{4-6} cycloalkyl selected from the group consisting of

[Chemical Formula 791]



,

subscript d is the number of substitutable positions on a ring of R^5,

each R^{9a} is independently selected from the group consisting of

1) a hydrogen atom,

2) a hydroxyl group,

3) halogen,

4) a C_{1-4} alkyl group

(wherein the alkyl group is optionally substituted with $NR^{e3}R^{f3}$, a 5- or 6-membered non-aryl heterocycle, $-C(=O)OR^{f3}$, or a hydroxyl group),

5) a C_{1-4} alkoxy group,

6) $-NR^{e3}R^{f3}$,

7) $-C(=O)OR^{e3}$,

8) C_{6-10} aryl, and

9) $-C(=O)NR^{e3}R^{f3}$, and

R^{e3} and R^{f3} are the same or different, each independently a hydrogen atom, an optionally substituted C_{1-6} alkyl group, or an optionally substituted C_{3-10} alicyclic group.

44. The compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein

L^4 is $-CR^{12}(NH_2)-$,

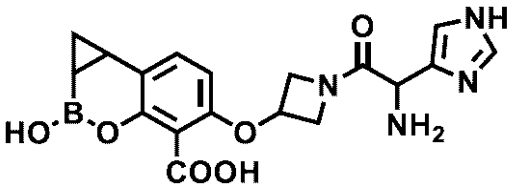
R^{12} is a hydrogen atom or a methyl group, and

R^5 is a C_{1-4} alkyl group optionally substituted with a hydroxyl group.

45. The compound or the pharmaceutically acceptable salt thereof according to claim 1, selected from the group consisting of the compounds represented by the following names or structural formulas:

5-({1-[amino(1H-imidazol-4-yl)acetyl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

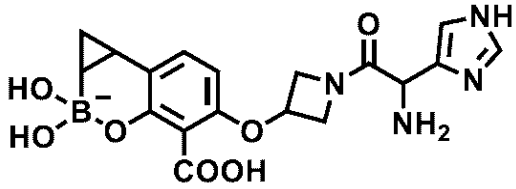
[Chemical Formula 792]



,

9-[1-[2-amino-2-(1H-imidazol-4-yl)acetyl]azetidin-3-yl]oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

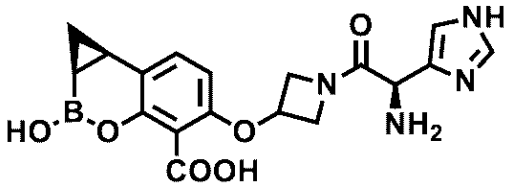
[Chemical Formula 793]



,

(1aS,7bR)-5-({1-[(2R)-2-amino-2-(1H-imidazol-4-yl)acetyl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

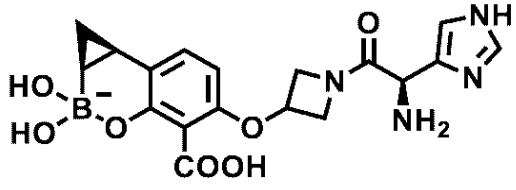
[Chemical Formula 794]



,

(2R,4S)-9-[1-[(2R)-2-amino-2-(1H-imidazol-4-yl)acetyl]azetidin-3-yl]oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

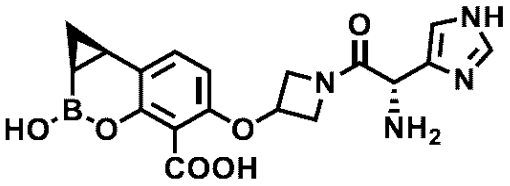
[Chemical Formula 795]



,

(1aS,7bR)-5-({1-[(2S)-2-amino-2-(1H-imidazol-4-yl)acetyl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

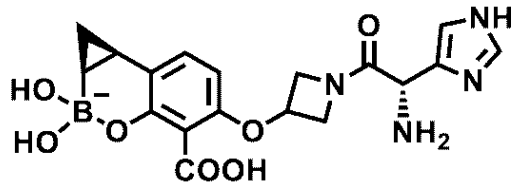
[Chemical Formula 796]



,

(2R,4S)-9-[1-[(2S)-2-amino-2-(1H-imidazol-4-yl)acetyl]azetidin-3-yl]oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

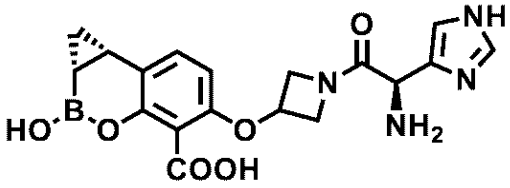
[Chemical Formula 797]



,

(1aR,7bS)-5-({1-[(2R)-2-amino-2-(1H-imidazol-4-yl)acetyl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

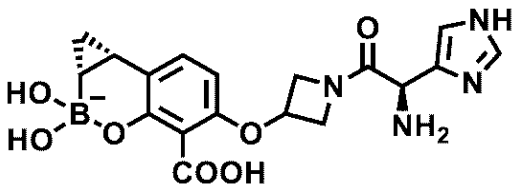
[Chemical Formula 798]



,

(2S,4R)-9-[1-[(2R)-2-amino-2-(1H-imidazol-4-yl)acetyl]azetidin-3-yl]oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

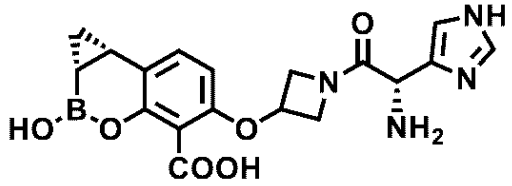
[Chemical Formula 799]



,

(1aR,7bS)-5-({1-[(2S)-2-amino-2-(1H-imidazol-4-yl)acetyl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

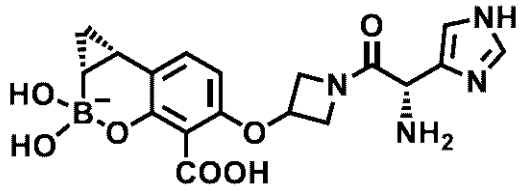
[Chemical Formula 800]



,

(2S,4R)-9-[1-[(2S)-2-amino-2-(1H-imidazol-4-yl)acetyl]azetidin-3-yl]oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

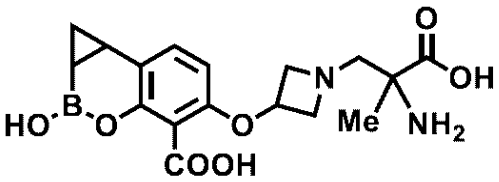
[Chemical Formula 801]



,

5-({1-(2-amino-2-carboxypropyl)azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

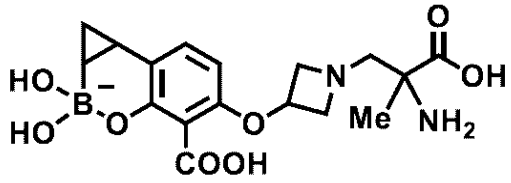
[Chemical Formula 802]



,

9-[1-(propyl 2-amino-2-carboxylate)azetidin-3-yl]oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

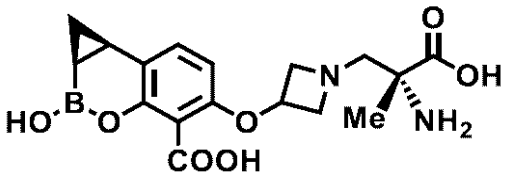
[Chemical Formula 803]



,

(1aS,7bR)-5-({1-[(2R)-2-amino-2-carboxypropyl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

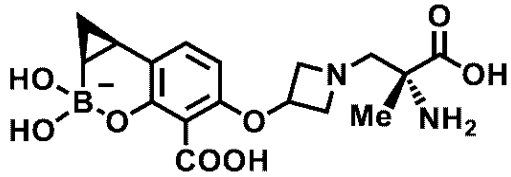
[Chemical Formula 804]



,

(2R,4S)-9-[1-[propyl (2R)-2-amino-2-carboxylate]azetidin-3-yl]oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.0^{2,4}]undeca-1(7),8,10-triene-8-carboxylate

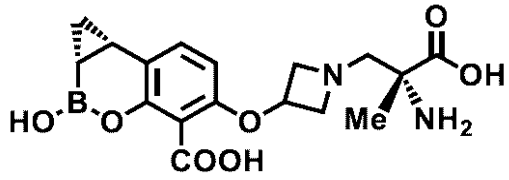
[Chemical Formula 805]



,

(1aR,7bS)-5-({1-[(2R)-2-amino-2-carboxypropyl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

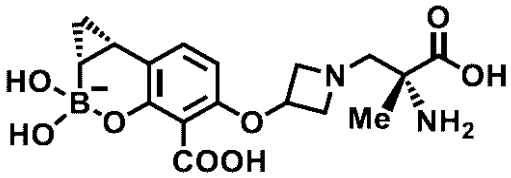
[Chemical Formula 806]



,

(2S,4R)-9-[1-[propyl (2R)-2-amino-2-carboxylate]azetidin-3-yl]oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.0^{2,4}]undeca-1(7),8,10-triene-8-carboxylate

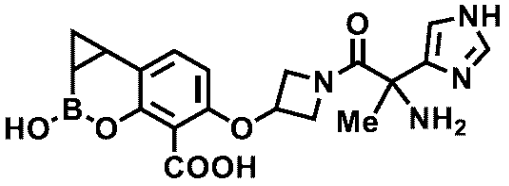
[Chemical Formula 807]



,

5-({1-[2-amino-2-(1H-imidazol-4-yl)propanoyl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

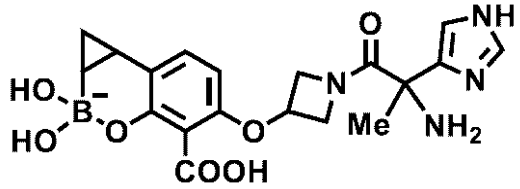
[Chemical Formula 808]



,

9-[1-[2-amino-2-(1H-imidazol-4-yl)propanoyl]azetidin-3-yl]oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

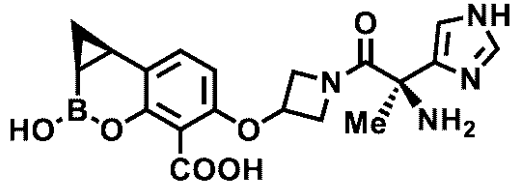
[Chemical Formula 809]



,

(1aS,7bR)-5-({1-[(2R)-2-amino-2-(1H-imidazol-4-yl)propanoyl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

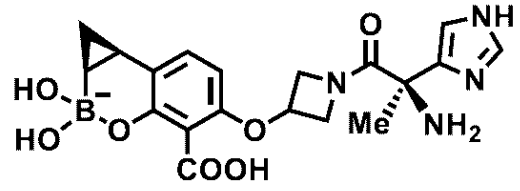
[Chemical Formula 810]



,

(2R,4S)-9-[1-[(2R)-2-amino-2-(1H-imidazol-4-yl)propanoyl]azetidin-3-yl]oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

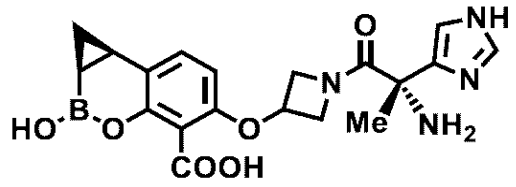
[Chemical Formula 811]



,

(1aS,7bR)-5-({1-[(2S)-2-amino-2-(1H-imidazol-4-yl)propanoyl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

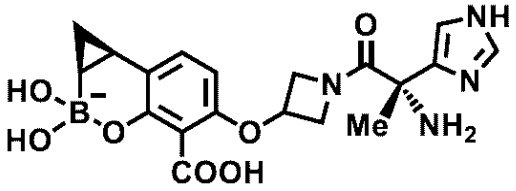
[Chemical Formula 812]



,

(2R,4S)-9-[1-[(2S)-2-amino-2-(1H-imidazol-4-yl)propanoyl]azetidin-3-yl]oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

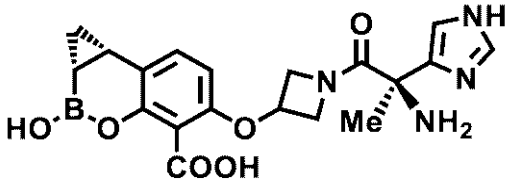
[Chemical Formula 813]



,

(1aR,7bS)-5-({1-[(2R)-2-amino-2-(1H-imidazol-4-yl)propanoyl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

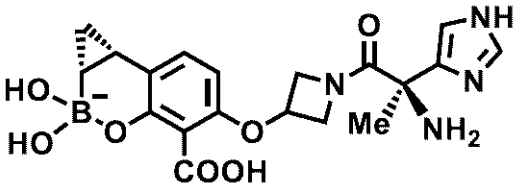
[Chemical Formula 814]



,

(2S,4R)-9-[1-[(2R)-2-amino-2-(1H-imidazol-4-yl)propanoyl]azetidin-3-yl]oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

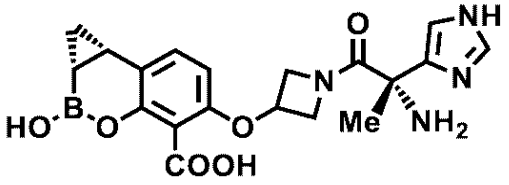
[Chemical Formula 815]



,

(1aR,7bS)-5-({1-[(2S)-2-amino-2-(1H-imidazol-4-yl)propanoyl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

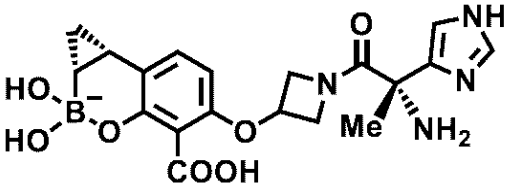
[Chemical Formula 816]



, and

(2S,4R)-9-[1-[(2S)-2-amino-2-(1H-imidazol-4-yl)propanoyl]azetidin-3-yl]oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

[Chemical Formula 817]

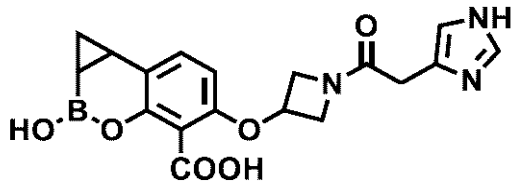


.

46. The compound or the pharmaceutically acceptable salt thereof according to claim 1, selected from the group consisting of the compounds represented by the following names or structural formulas:

2-hydroxy-5-({1-[(1H-imidazol-4-yl)acetyl]azetidin-3-yl}oxy)-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

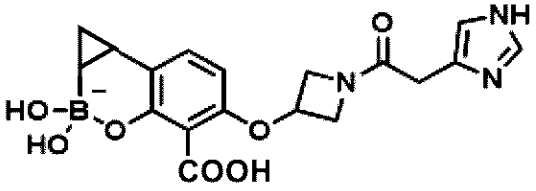
[Chemical Formula 818]



,

5,5-dihydroxy-9-{1-[(1H-imidazol-4-yl)acetyl]azetidin-3-yl}oxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

[Chemical Formula 819]

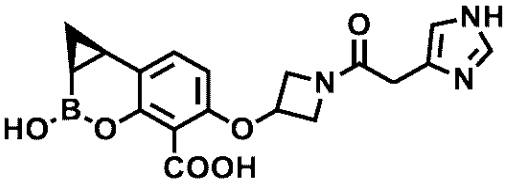


,

(1aS,7bR)-2-hydroxy-5-({1-[(1H-imidazol-4-yl)acetyl]azetidin-3-

yl}oxy)-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

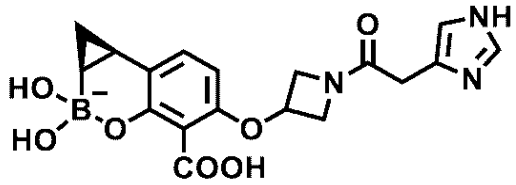
[Chemical Formula 820]



,

(2R,4S)-5,5-dihydroxy-9-{1-[(1H-imidazol-4-yl)acetyl]azetidin-3-yl}oxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

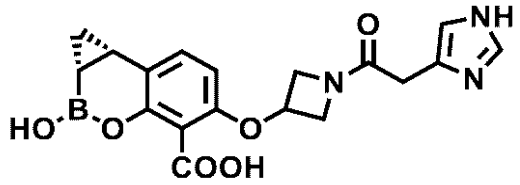
[Chemical Formula 821]



,

(1aR,7bS)-2-hydroxy-5-({1-[(1H-imidazol-4-yl)acetyl]azetidin-3-yl}oxy)-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

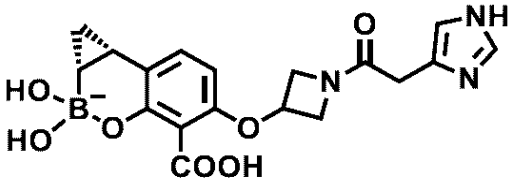
[Chemical Formula 822]



,

(2S,4R)-5,5-dihydroxy-9-{1-[(1H-imidazol-4-yl)acetyl]azetidin-3-yl}oxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

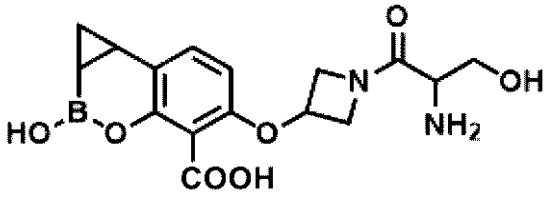
[Chemical Formula 823]



,

2-hydroxy-5-[(1-serylazetidin-3-yl)oxy]-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

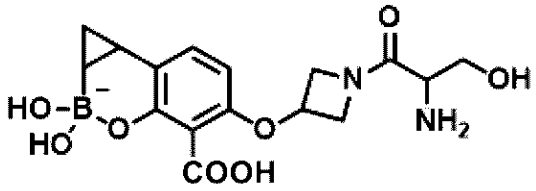
[Chemical Formula 824]



,

5,5-dihydroxy-9-(1-serylazetidin-3-yl)oxy-6-oxa-5-boranuidatricyclo[5.4.0.0^{2,4}]undeca-1(11),7,9-triene-8-carboxylic acid

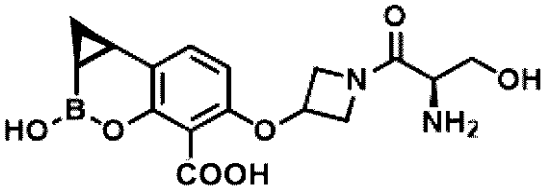
[Chemical Formula 825]



,

(1aS,7bR)-2-hydroxy-5-[(1-D-serylazetidin-3-yl)oxy]-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

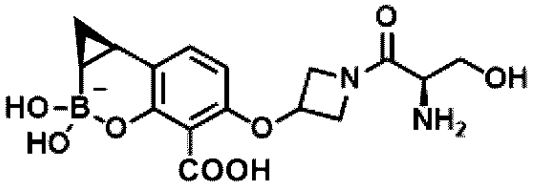
[Chemical Formula 826]



,

(2R,4S)-5,5-dihydroxy-9-(1-D-serylazetidin-3-yl)oxy-6-oxa-5-boranuidatricyclo[5.4.0.0^{2,4}]undeca-1(11),7,9-triene-8-carboxylic acid

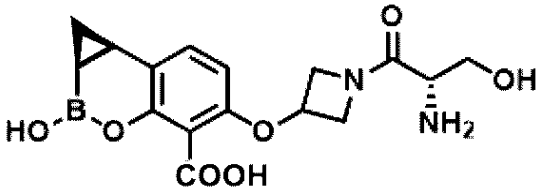
[Chemical Formula 827]



,

(1aS,7bR)-2-hydroxy-5-[(1-L-serylazetidin-3-yl)oxy]-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

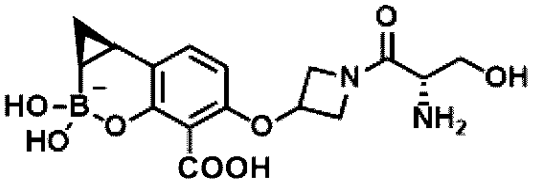
[Chemical Formula 828]



,

(2R,4S)-5,5-dihydroxy-9-(1-L-serylazetidin-3-yl)oxy-6-oxa-5-boranuidatricyclo[5.4.0.0^{2,4}]undeca-1(11),7,9-triene-8-carboxylic acid

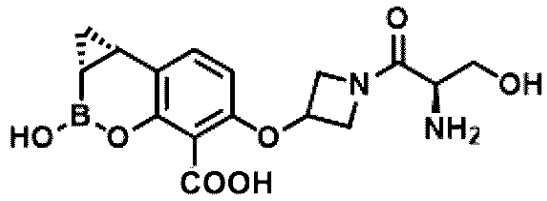
[Chemical Formula 829]



,

(1aR,7bS)-2-hydroxy-5-[(1-D-serylazetidin-3-yl)oxy]-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

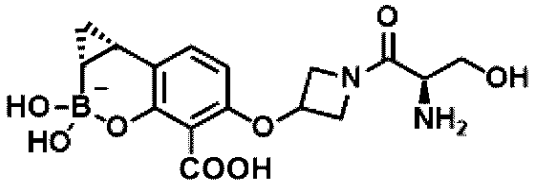
[Chemical Formula 830]



,

(2S,4R)-5,5-dihydroxy-9-(1-D-serylazetidin-3-yl)oxy-6-oxa-5-boranuidatricyclo[5.4.0.0^{2,4}]undeca-1(11),7,9-triene-8-carboxylic acid

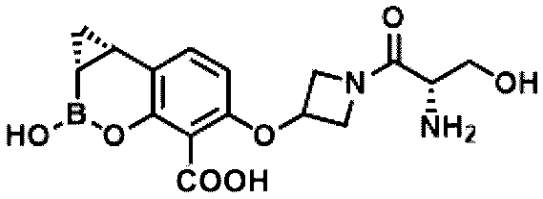
[Chemical Formula 831]



,

(1aR,7bS)-2-hydroxy-5-[(1-L-serylazetidin-3-yl)oxy]-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

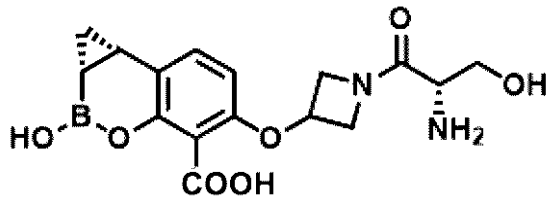
[Chemical Formula 832]



,

(2S,4R)-5,5-dihydroxy-9-(1-L-serylazetidin-3-yl)oxy-6-oxa-5-boranuidatricyclo[5.4.0.0^{2,4}]undeca-1(11),7,9-triene-8-carboxylic acid

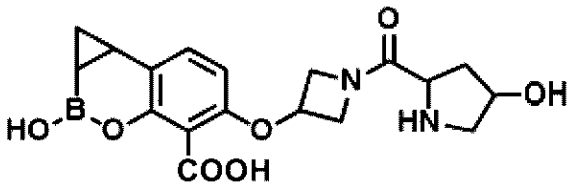
[Chemical Formula 833]



,

2-hydroxy-5-({1-[4-hydroxy-prolyl]azetidin-3-yl}oxy)-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

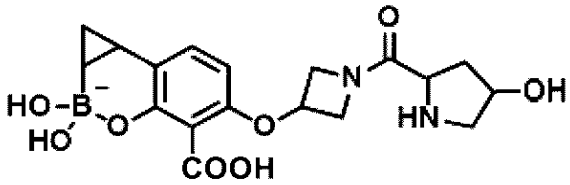
[Chemical Formula 834]



,

5,5-dihydroxy-9-{1-[4-hydroxy-prolyl]azetidin-3-yl}oxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

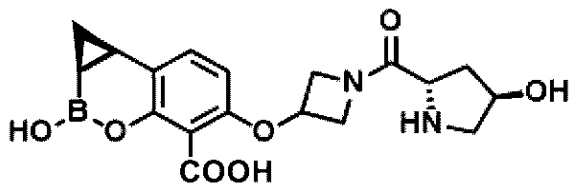
[Chemical Formula 835]



,

(1aS,7bR)-2-hydroxy-5-({1-[(4R)-4-hydroxy-L-prolyl]azetidin-3-yl}oxy)-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

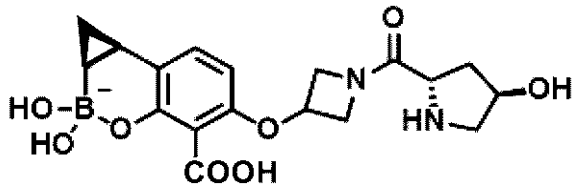
[Chemical Formula 836]



,

(2R,4S)-5,5-dihydroxy-9-{1-[(4R)-4-hydroxy-L-prolyl]azetidin-3-yl}oxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

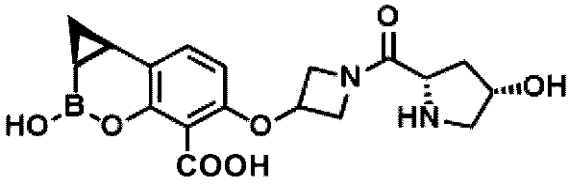
[Chemical Formula 837]



,

(1aS,7bR)-2-hydroxy-5-({1-[(4S)-4-hydroxy-L-prolyl]azetidin-3-yl}oxy)-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

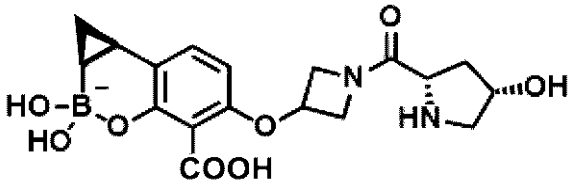
[Chemical Formula 838]



,

(2R,4S)-5,5-dihydroxy-9-{1-[(4S)-4-hydroxy-L-prolyl]azetidin-3-yl}oxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

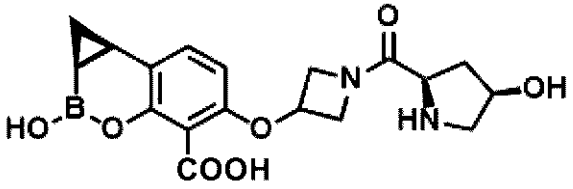
[Chemical Formula 839]



,

(1aS,7bR)-2-hydroxy-5-({1-[(4R)-4-hydroxy-D-prolyl]azetidin-3-yl}oxy)-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

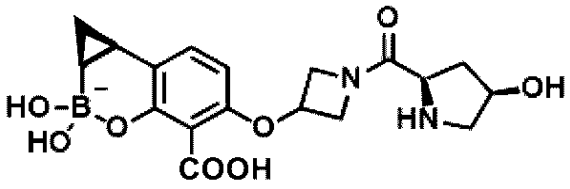
[Chemical Formula 840]



,

(2R,4S)-5,5-dihydroxy-9-{1-[(4R)-4-hydroxy-D-prolyl]azetidin-3-yl}oxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

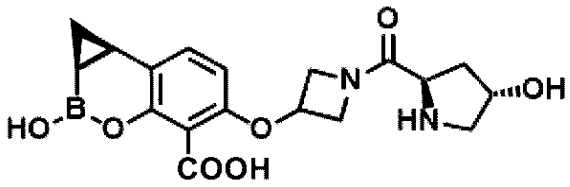
[Chemical Formula 841]



,

(1aS,7bR)-2-hydroxy-5-({1-[(4S)-4-hydroxy-D-prolyl]azetidin-3-yl}oxy)-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

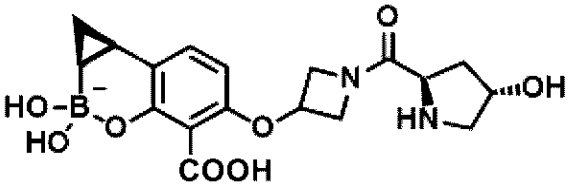
[Chemical Formula 842]



,

(2R,4S)-5,5-dihydroxy-9-{1-[(4S)-4-hydroxy-D-prolyl]azetidin-3-yl}oxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

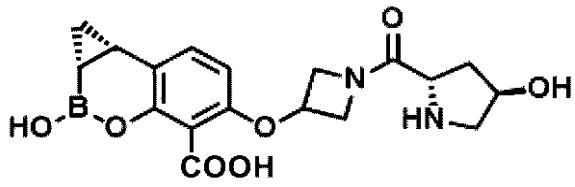
[Chemical Formula 843]



,

(1aR,7bS)-2-hydroxy-5-({1-[(4R)-4-hydroxy-L-prolyl]azetidin-3-yl}oxy)-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

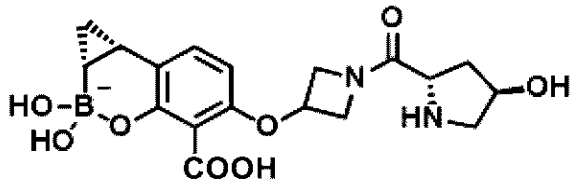
[Chemical Formula 844]



,

(2S,4R)-5,5-dihydroxy-9-{1-[(4R)-4-hydroxy-L-prolyl]azetidin-3-yl}oxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

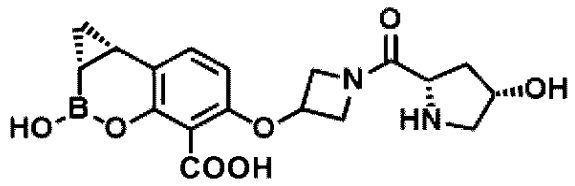
[Chemical Formula 845]



,

(1aR,7bS)-2-hydroxy-5-({1-[(4S)-4-hydroxy-L-prolyl]azetidin-3-yl}oxy)-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

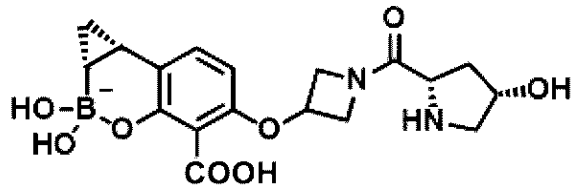
[Chemical Formula 846]



,

(2S,4R)-5,5-dihydroxy-9-{1-[(4S)-4-hydroxy-L-prolyl]azetidin-3-yl}oxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

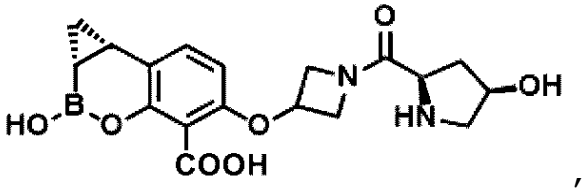
[Chemical Formula 847]



,

(1aR,7bS)-2-hydroxy-5-({1-[(4R)-4-hydroxy-D-prolyl]azetidin-3-yl}oxy)-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

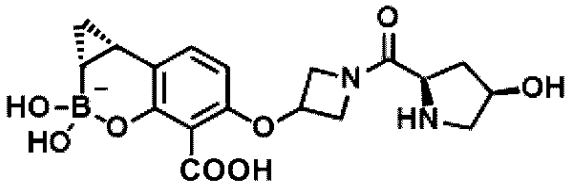
[Chemical Formula 848]



,

(2S,4R)-5,5-dihydroxy-9-{1-[(4R)-4-hydroxy-D-prolyl]azetidin-3-yl}oxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

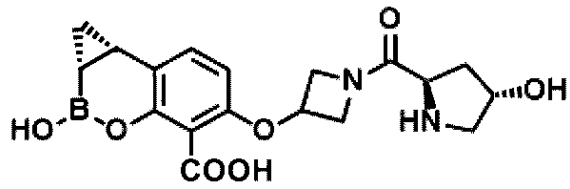
[Chemical Formula 849]



,

(1aR,7bS)-2-hydroxy-5-({1-[(4S)-4-hydroxy-D-prolyl]azetidin-3-yl}oxy)-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

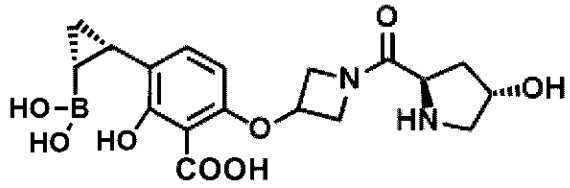
[Chemical Formula 850]



,

(2S,4R)-5,5-dihydroxy-9-{1-[(4S)-4-hydroxy-D-prolyl]azetidin-3-yl}oxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

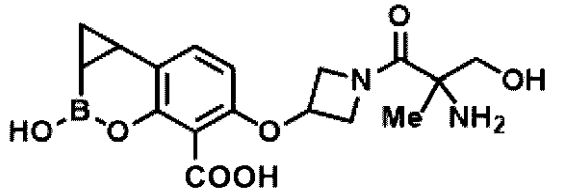
[Chemical Formula 851]



,

2-hydroxy-5-{[1-(2-methyl-seryl)azetidin-3-yl]oxy}-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

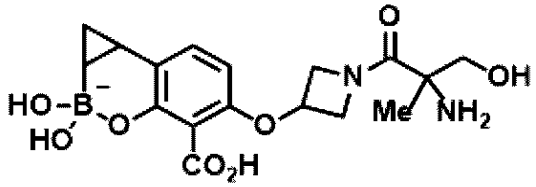
[Chemical Formula 852]



,

5,5-dihydroxy-9-[1-(2-methyl-seryl)azetidin-3-yl]oxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

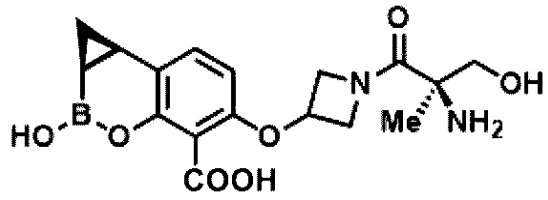
[Chemical Formula 853]



,

(1aS,7bR)-2-hydroxy-5-{[1-(2-methyl-D-seryl)azetidin-3-yl]oxy}-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

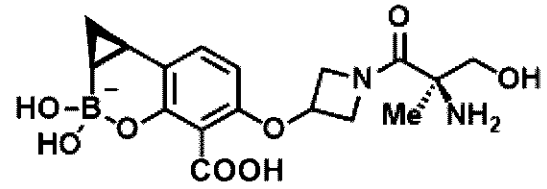
[Chemical Formula 854]



,

(2R,4S)-5,5-dihydroxy-9-[1-(2-methyl-D-seryl)azetidin-3-yl]oxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

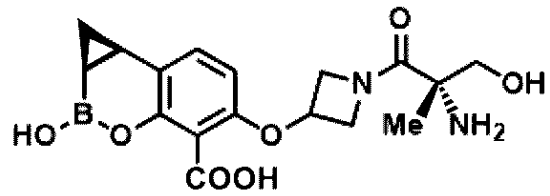
[Chemical Formula 855]



,

(1aS,7bR)-2-hydroxy-5-{[1-(2-methyl-L-seryl)azetidin-3-yl]oxy}-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

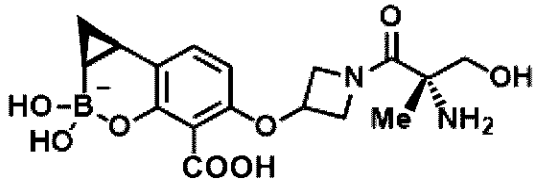
[Chemical Formula 856]



,

(2R,4S)-5,5-dihydroxy-9-[1-(2-methyl-L-seryl)azetidin-3-yl]oxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

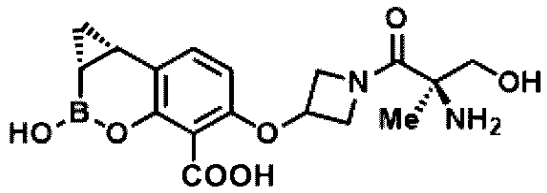
[Chemical Formula 857]



,

(1aR,7bS)-2-hydroxy-5-{[1-(2-methyl-D-seryl)azetidin-3-yl]oxy}-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

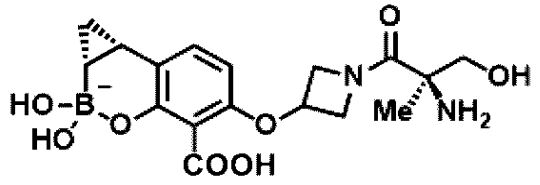
[Chemical Formula 858]



,

(2S,4R)-5,5-dihydroxy-9-[1-(2-methyl-D-seryl)azetidin-3-yl]oxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

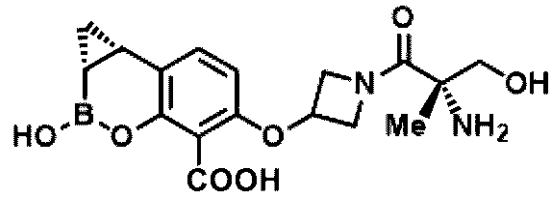
[Chemical Formula 859]



,

(1aR,7bS)-2-hydroxy-5-{[1-(2-methyl-L-seryl)azetidin-3-yl]oxy}-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

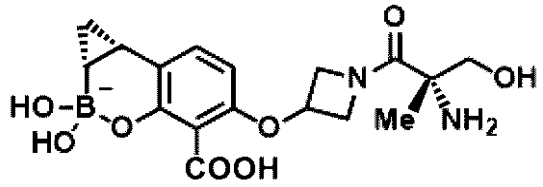
[Chemical Formula 860]



,

(2S,4R)-5,5-dihydroxy-9-[1-(2-methyl-L-seryl)azetidin-3-yl]oxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

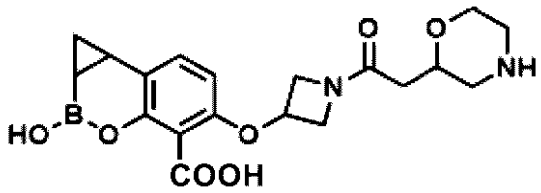
[Chemical Formula 861]



,

2-hydroxy-5-[(1-{[morpholin-2-yl]acetyl}azetidin-3-yl)oxy]-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

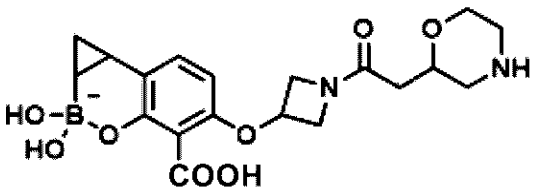
[Chemical Formula 862]



,

5,5-dihydroxy-9-(1-{[morpholin-2-yl]acetyl}azetidin-3-yl)oxy-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

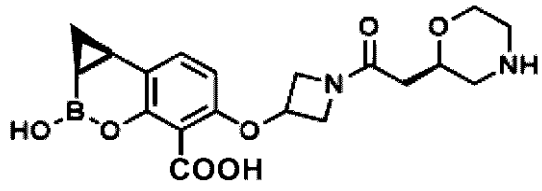
[Chemical Formula 863]



,

(1aS,7bR)-2-hydroxy-5-[(1-{[(2R)-morpholin-2-yl]acetyl}azetidin-3-yl)oxy]-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

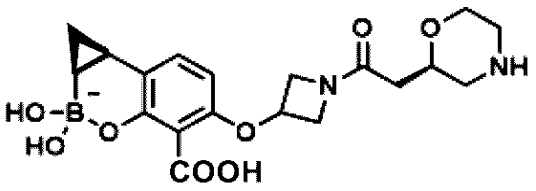
[Chemical Formula 864]



,

(2R,4S)-5,5-dihydroxy-9-(1-{[(2R)-morpholin-2-yl]acetyl}azetidin-3-yl)oxy-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

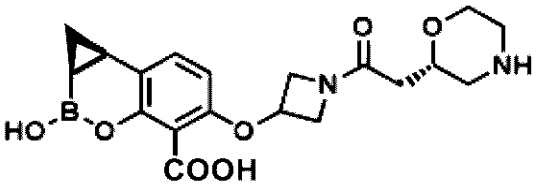
[Chemical Formula 865]



,

(1aS,7bR)-2-hydroxy-5-[(1-{[(2S)-morpholin-2-yl]acetyl}azetidin-3-yl)oxy]-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

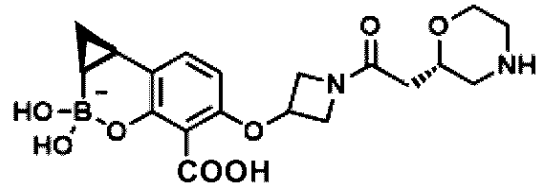
[Chemical Formula 866]



,

(2R,4S)-5,5-dihydroxy-9-(1-{[(2S)-morpholin-2-yl]acetyl}azetidin-3-yl)oxy-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

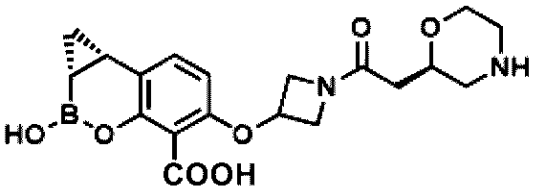
[Chemical Formula 867]



,

(1aR,7bS)-2-hydroxy-5-[(1-{[(2R)-morpholin-2-yl]acetyl}azetidin-3-yl)oxy]-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

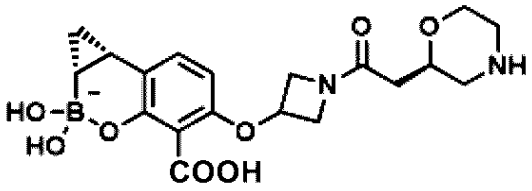
[Chemical Formula 868]



,

(2S,4R)-5,5-dihydroxy-9-(1-{[(2R)-morpholin-2-yl]acetyl}azetidin-3-yl)oxy-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

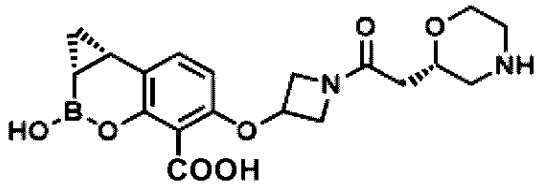
[Chemical Formula 869]



,

(1aR,7bS)-2-hydroxy-5-[(1-{[(2S)-morpholin-2-yl]acetyl}azetidin-3-yl)oxy]-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

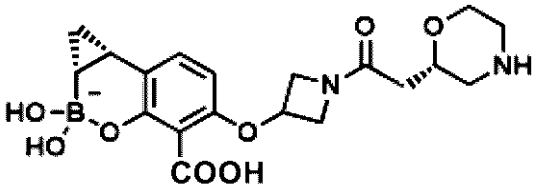
[Chemical Formula 870]



,

(2S,4R)-5,5-dihydroxy-9-(1-{[(2S)-morpholin-2-yl]acetyl}azetidin-3-yl)oxy-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

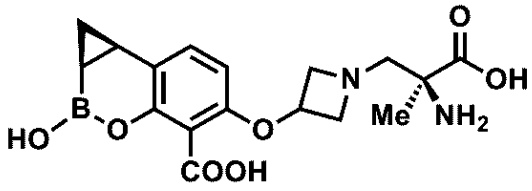
[Chemical Formula 871]



,

(1aS,7bR)-5-({1-[(2S)-2-amino-2-carboxypropyl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

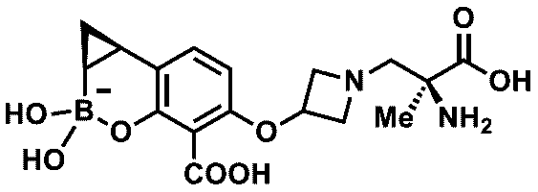
[Chemical Formula 872]



,

(2R,4S)-9-[1-[propyl (2S)-2-amino-2-carboxylate]azetidin-3-yl]oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

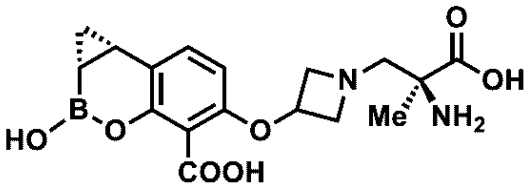
[Chemical Formula 873]



,

(1aR,7bS)-5-({1-[(2S)-2-amino-2-carboxypropyl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

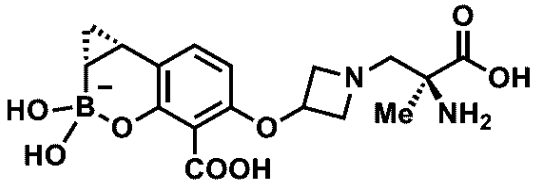
[Chemical Formula 874]



,

(2S,4R)-9-[1-[propyl (2S)-2-amino-2-carboxylate]azetidin-3-yl]oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

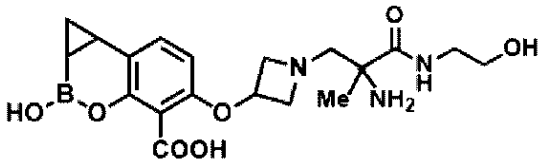
[Chemical Formula 875]



,

5-({1-[2-amino-2-carboxypropyl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

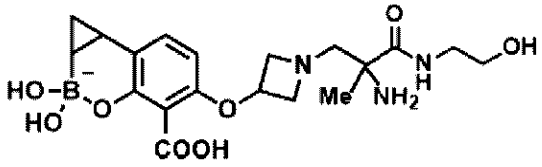
[Chemical Formula 876]



,

9-(1-{2-amino-3-[(2-hydroxyethyl)amino]-2-methyl-3-oxopropyl}azetidin-3-yl)oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

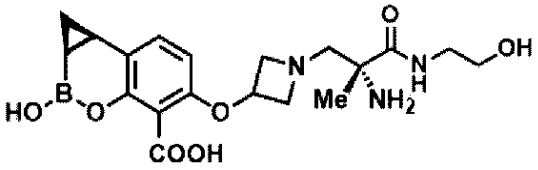
[Chemical Formula 877]



,

(1aS,7bR)-5-[(1-{(2R)-2-amino-3-[(2-hydroxyethyl)amino]-2-methyl-3-oxopropyl}azetidin-3-yl)oxy]-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

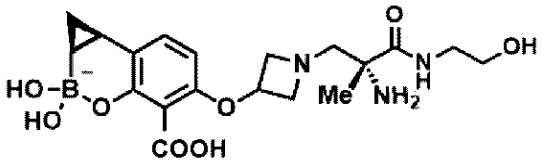
[Chemical Formula 878]



,

(2R,4S)-9-(1-{(2R)-2-amino-3-[(2-hydroxyethyl)amino]-2-methyl-3-oxopropyl}azetidin-3-yl)oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

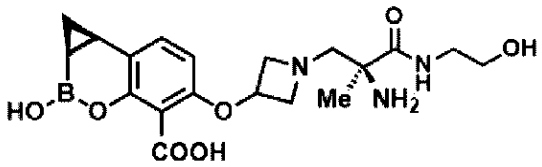
[Chemical Formula 879]



,

(1aS,7bR)-5-[(1-{(2S)-2-amino-3-[(2-hydroxyethyl)amino]-2-methyl-3-oxopropyl}azetidin-3-yl)oxy]-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

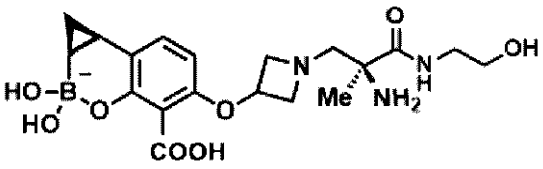
[Chemical Formula 880]



,

(2R,4S)-9-(1-{(2S)-2-amino-3-[(2-hydroxyethyl)amino]-2-methyl-3-oxopropyl}azetidin-3-yl)oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

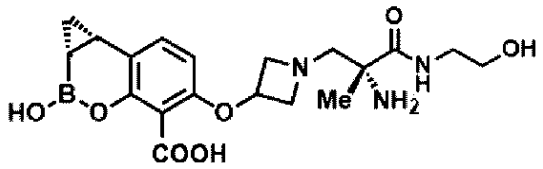
[Chemical Formula 881]



,

(1aR,7bS)-5-[(1-{(2R)-2-amino-3-[(2-hydroxyethyl)amino]-2-methyl-3-oxopropyl}azetidin-3-yl)oxy]-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

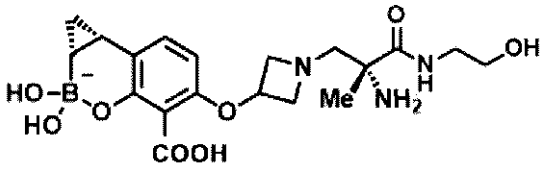
[Chemical Formula 882]



,

(2S,4R)-9-(1-{(2R)-2-amino-3-[(2-hydroxyethyl)amino]-2-methyl-3-oxopropyl}azetidin-3-yl)oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

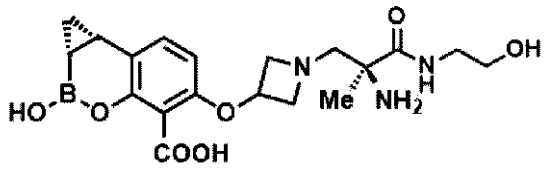
[Chemical Formula 883]



,

(1aR,7bS)-5-[(1-{(2S)-2-amino-3-[(2-hydroxyethyl)amino]-2-methyl-3-oxopropyl}azetidin-3-yl)oxy]-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

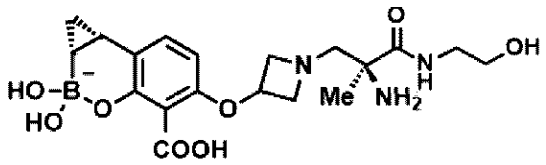
[Chemical Formula 884]



,

(2S,4R)-9-(1-{(2S)-2-amino-3-[(2-hydroxyethyl)amino]-2-methyl-3-oxopropyl}azetidin-3-yl)oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

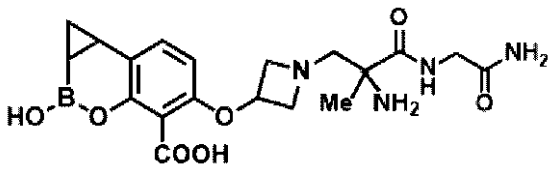
[Chemical Formula 885]



,

5-[(1-{2-amino-3-[(2-amino-2-oxoethyl)amino]-2-methyl-3-oxo-propyl}azetidin-3-yl)oxy]-2-hydroxy-1,1a,2,7b-tetrahydrocyclo-propa[c][1,2]benzoxaborinine-4-carboxylic acid

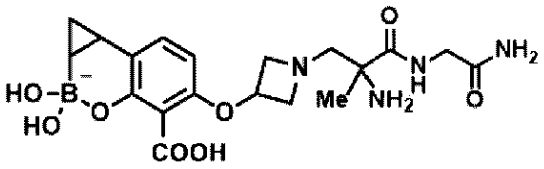
[Chemical Formula 886]



,

9-(1-{2-amino-3-[(2-amino-2-oxoethyl)amino]-2-methyl-3-oxopropyl}-azetidin-3-yl)oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo-[5.4.0.$0^{2,4}$]-undeca-1(7),8,10-triene-8-carboxylate

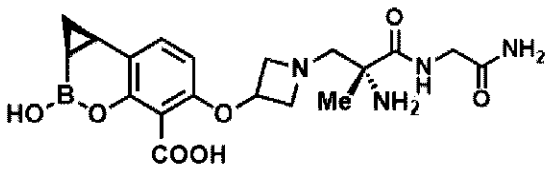
[Chemical Formula 887]



,

(1aS,7bR)-5-[(1-{(2R)-2-amino-3-[(2-amino-2-oxoethyl)amino]-2-methyl-3-oxopropyl}azetidin-3-yl)oxy]-2-hydroxy-1,1a,2,7b-tetra-hydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

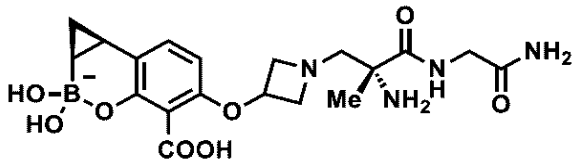
[Chemical Formula 888]



,

(2R,4S)-9-(1-{(2R)-2-amino-3-[(2-amino-2-oxoethyl)amino]-2-methyl-3-oxopropyl}azetidin-3-yl)oxy-5,5-dihydroxy-6-oxa-5-boranuidatri-cyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

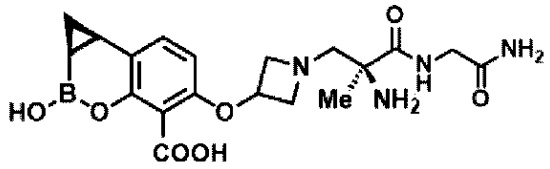
[Chemical Formula 889]



,

(1aS,7bR)-5-[(1-{(2S)-2-amino-3-[(2-amino-2-oxoethyl)amino]-2-methyl-3-oxopropyl}azetidin-3-yl)oxy]-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

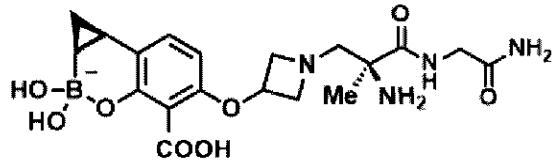
[Chemical Formula 890]



,

(2R,4S)-9-(1-{(2S)-2-amino-3-[(2-amino-2-oxoethyl)amino]-2-methyl-3-oxopropyl}azetidin-3-yl)oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

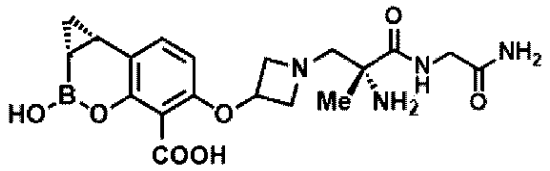
[Chemical Formula 891]



,

(1aR,7bS)-5-[(1-{(2R)-2-amino-3-[(2-amino-2-oxoethyl)amino]-2-methyl-3-oxopropyl}azetidin-3-yl)oxy]-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

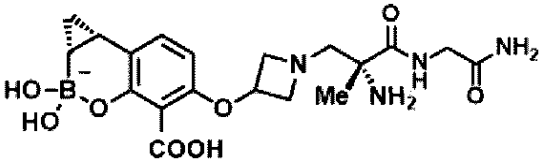
[Chemical Formula 892]



,

(2S,4R)-9-(1-{(2R)-2-amino-3-[(2-amino-2-oxoethyl)amino]-2-methyl-3-oxopropyl}azetidin-3-yl)oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

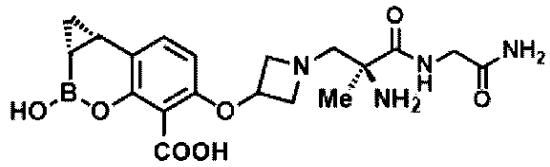
[Chemical Formula 893]



,

(1aR,7bS)-5-[(1-{(2S)-2-amino-3-[(2-amino-2-oxoethyl)amino]-2-methyl-3-oxopropyl}azetidin-3-yl)oxy]-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

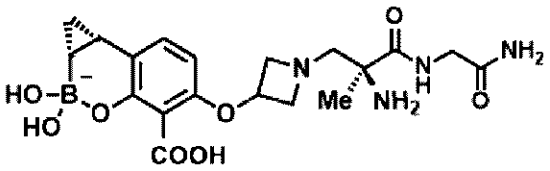
[Chemical Formula 894]



,

(2S,4R)-9-(1-{(2S)-2-amino-3-[(2-amino-2-oxoethyl)amino]-2-methyl-3-oxopropyl}azetidin-3-yl)oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

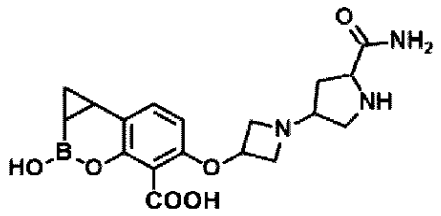
[Chemical Formula 895]



,

5-({1-[5-carbamoylpyrrolidin-3-yl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

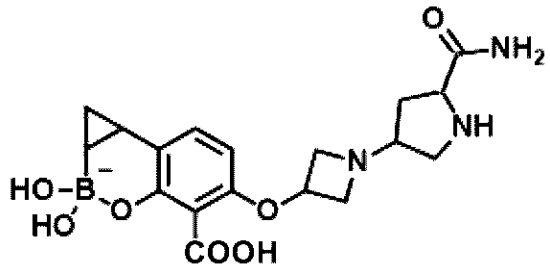
[Chemical Formula 896]



,

9-{1-[5-carbamoylpyrrolidin-3-yl]azetidin-3-yl}oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

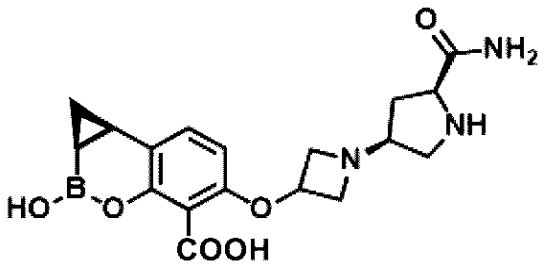
[Chemical Formula 897]



,

(1aS,7bR)-5-({1-[(3S,5S)-5-carbamoylpyrrolidin-3-yl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

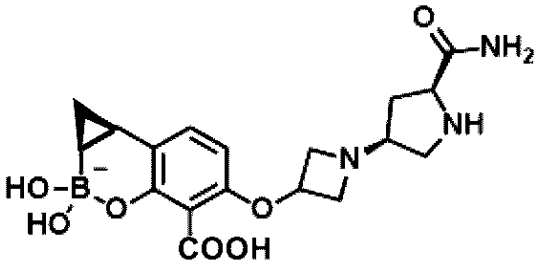
[Chemical Formula 898]



,

(2R,4S)-9-{1-[(3S,5S)-5-carbamoylpyrrolidin-3-yl]azetidin-3-yl}oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

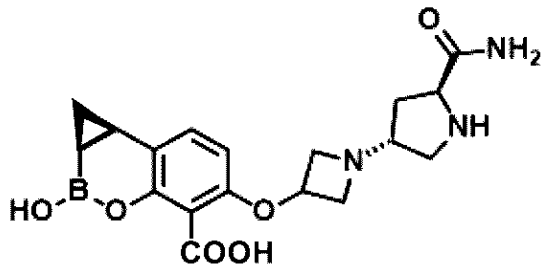
[Chemical Formula 899]



,

(1aS,7bR)-5-({1-[(3R,5S)-5-carbamoylpyrrolidin-3-yl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

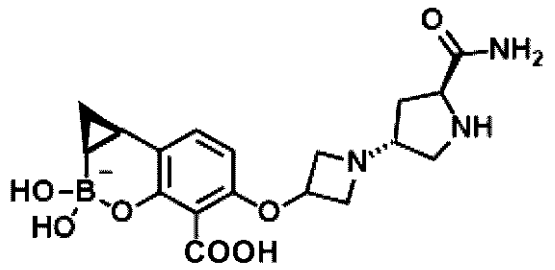
[Chemical Formula 900]



,

(2R,4S)-9-{1-[(3R,5S)-5-carbamoylpyrrolidin-3-yl]azetidin-3-yl}oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

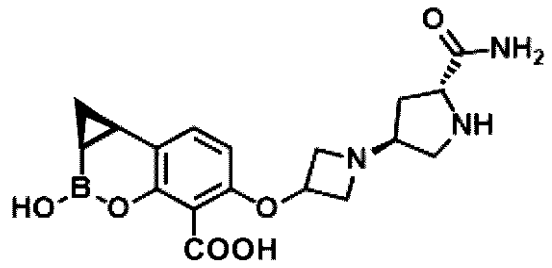
[Chemical Formula 901]



,

(1aS,7bR)-5-({1-[(3S,5R)-5-carbamoylpyrrolidin-3-yl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

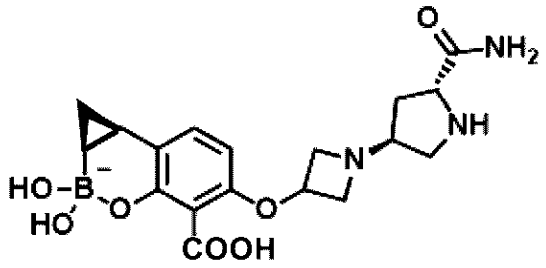
[Chemical Formula 902]



,

(2R,4S)-9-{1-[(3S,5R)-5-carbamoylpyrrolidin-3-yl]azetidin-3-yl}oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

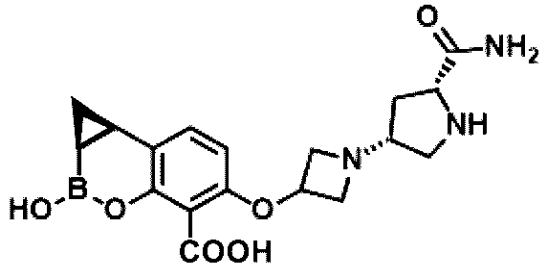
[Chemical Formula 903]



,

(1aS,7bR)-5-({1-[(3R,5R)-5-carbamoylpyrrolidin-3-yl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

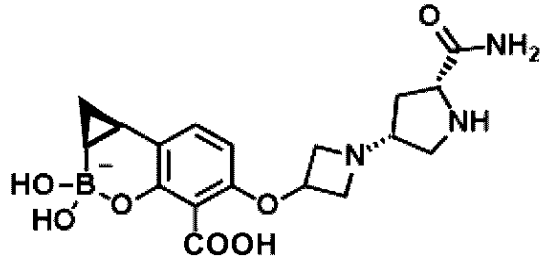
[Chemical Formula 904]



,

(2R,4S)-9-{1-[(3R,5R)-5-carbamoylpyrrolidin-3-yl]azetidin-3-yl}oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

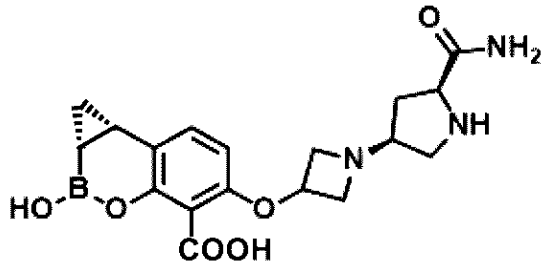
[Chemical Formula 905]



,

(1aR,7bS)-5-({1-[(3S,5S)-5-carbamoylpyrrolidin-3-yl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

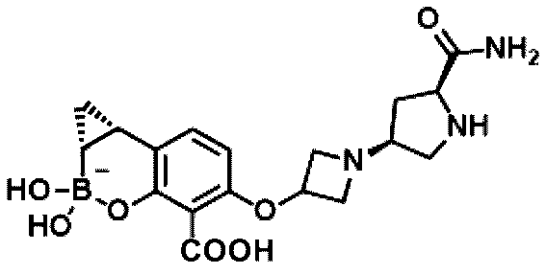
[Chemical Formula 906]



,

(2S,4R)-9-{1-[(3S,5S)-5-carbamoylpyrrolidin-3-yl]azetidin-3-yl}oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

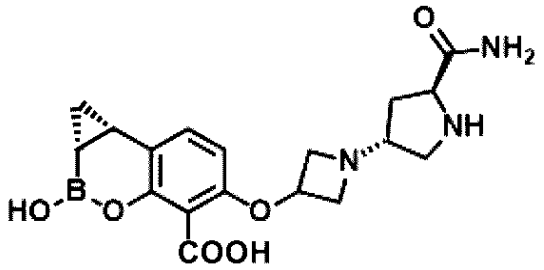
[Chemical Formula 907]



,

(1aR,7bS)-5-({1-[(3R,5S)-5-carbamoylpyrrolidin-3-yl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid.

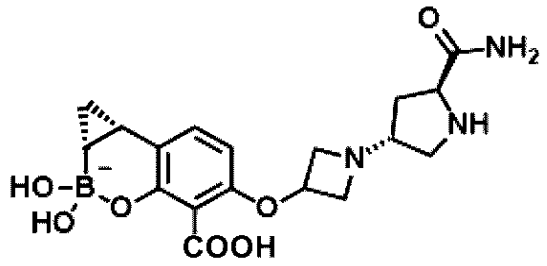
[Chemical Formula 908]



,

(2S,4R)-9-{1-[(3R,5S)-5-carbamoylpyrrolidin-3-yl]azetidin-3-yl}oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

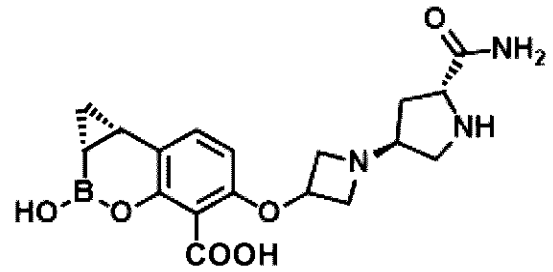
[Chemical Formula 909]



,

(1aR,7bS)-5-({1-[(3S,5R)-5-carbamoylpyrrolidin-3-yl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

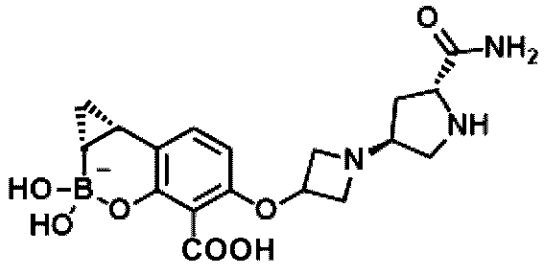
[Chemical Formula 910]



,

(2S,4R)-9-{1-[(3S,5R)-5-carbamoylpyrrolidin-3-yl]azetidin-3-yl}oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

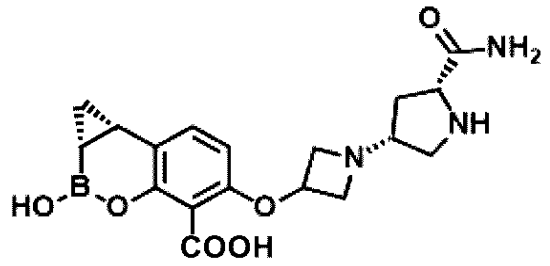
[Chemical Formula 911]



,

(1aR,7bS)-5-({1-[(3R,5R)-5-carbamoylpyrrolidin-3-yl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

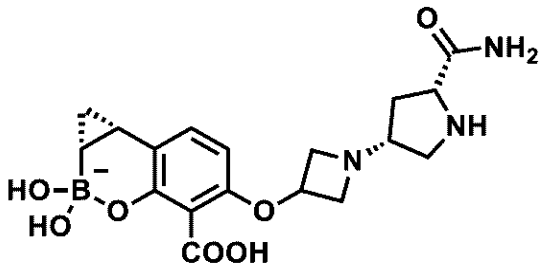
[Chemical Formula 912]



,

(2S,4R)-9-{1-[(3R,5R)-5-carbamoylpyrrolidin-3-yl]azetidin-3-yl}oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

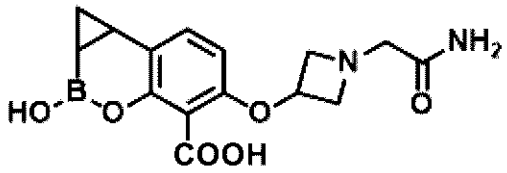
[Chemical Formula 913]



,

5-{[1-(2-amino-2-oxoethyl)azetidin-3-yl]oxy}-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

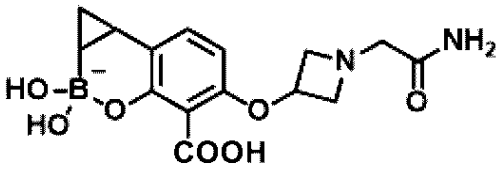
[Chemical Formula 914]



,

9-[1-(2-amino-2-oxoethyl)azetidin-3-yl]oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

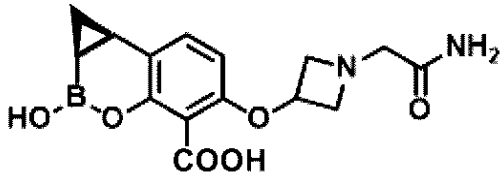
[Chemical Formula 915]



,

(1aS,7bR)-5-{[1-(2-amino-2-oxoethyl)azetidin-3-yl]oxy}-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

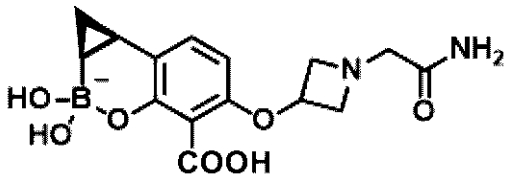
[Chemical Formula 916]



,

(2R,4S)-9-[1-(2-amino-2-oxoethyl)azetidin-3-yl]oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.0^{2,4}]undeca-1(7),8,10-triene-8-carboxylate

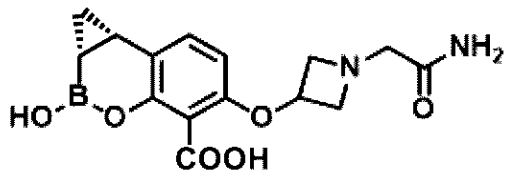
[Chemical Formula 917]



,

(1aR,7bS)-5-{[1-(2-amino-2-oxoethyl)azetidin-3-yl]oxy}-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

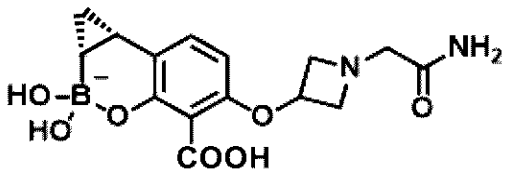
[Chemical Formula 918]



,

(2S,4R)-9-[1-(2-amino-2-oxoethyl)azetidin-3-yl]oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.0^{2,4}]undeca-1(7),8,10-triene-8-carboxylate

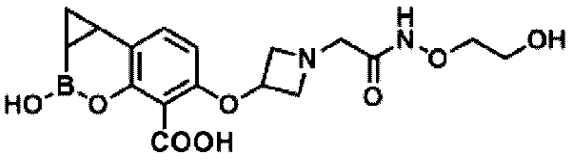
[Chemical Formula 919]



,

2-hydroxy-5-[(1-{2-[(2-hydroxyethoxy)amino]-2-oxoethyl}azetidin-3-yl)oxy]-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

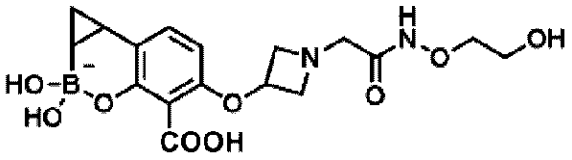
[Chemical Formula 920]



,

5,5-dihydroxy-9-(1-{2-[(2-hydroxyethoxy)amino]-2-oxoethyl}-azetidin-3-yl)oxy-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

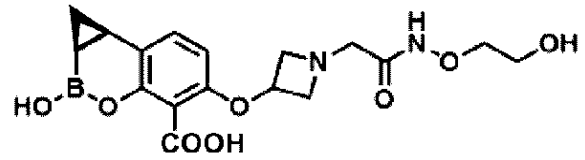
[Chemical Formula 921]



,

(1aS,7bR)-2-hydroxy-5-[(1-{2-[(2-hydroxyethoxy)amino]-2-oxoethyl}-azetidin-3-yl)oxy]-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

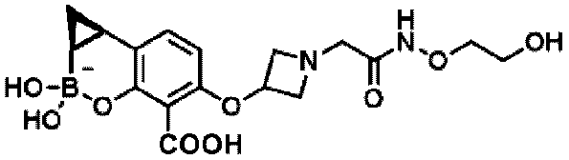
[Chemical Formula 922]



,

(2R,4S)-5,5-dihydroxy-9-(1-{2-[(2-hydroxyethoxy)amino]-2-oxoethyl}azetidin-3-yl)oxy-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

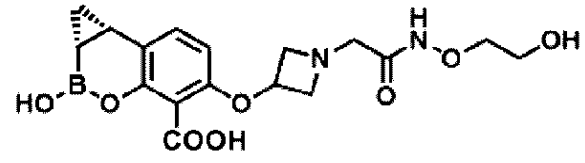
[Chemical Formula 923]



,

(1aR,7bS)-2-hydroxy-5-[(1-{2-[(2-hydroxyethoxy)amino]-2-oxoethyl}azetidin-3-yl)oxy]-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

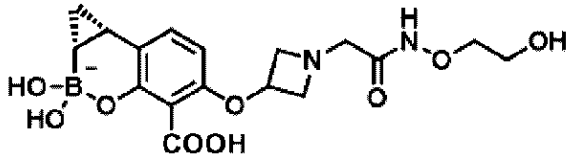
[Chemical Formula 924]



,

(2S,4R)-5,5-dihydroxy-9-(1-{2-[(2-hydroxyethoxy)amino]-2-oxo-ethyl}azetidin-3-yl)oxy-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

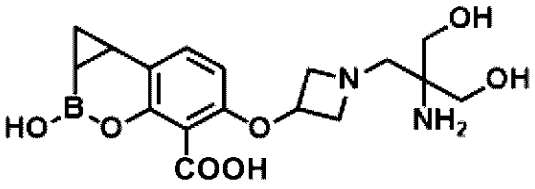
[Chemical Formula 925]



,

5-({1-[2-amino-3-hydroxy-2-(hydroxymethyl)propyl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

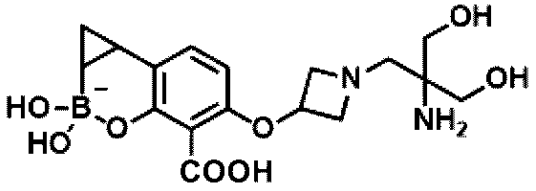
[Chemical Formula 926]



,

9-{1-[2-amino-3-hydroxy-2-(hydroxymethyl)propyl]azetidin-3-yl}oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

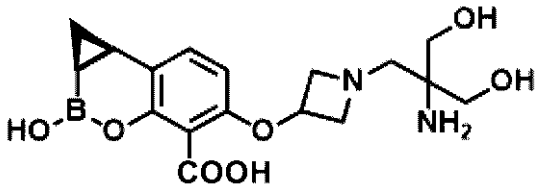
[Chemical Formula 927]



,

(1aS,7bR)-5-({1-[2-amino-3-hydroxy-2-(hydroxymethyl)propyl]-azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

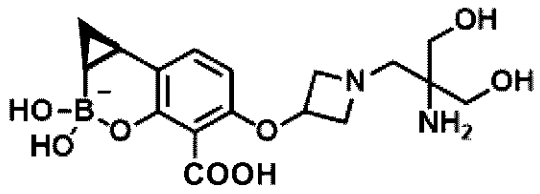
[Chemical Formula 928]



,

(2R,4S)-9-{1-[2-amino-3-hydroxy-2-(hydroxymethyl)propyl]azetidin-3-yl}oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

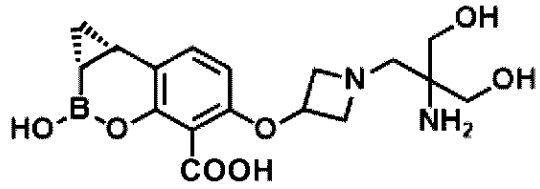
[Chemical Formula 929]



,

(1aR,7bS)-5-({1-[2-amino-3-hydroxy-2-(hydroxymethyl)propyl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

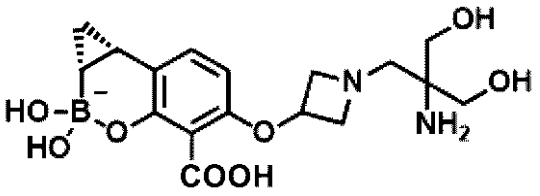
[Chemical Formula 930]



,

(2S,4R)-9-{1-[2-amino-3-hydroxy-2-(hydroxymethyl)propyl]azetidin-3-yl}oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

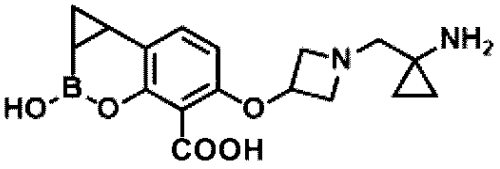
[Chemical Formula 931]



,

5-({1-[(1-aminocyclopropyl)methyl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

[Chemical Formula 932]

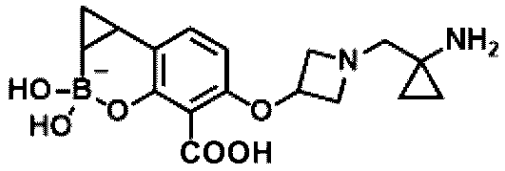


,

9-{1-[(1-aminocyclopropyl)methyl]azetidin-3-yl}oxy-5,5-dihydroxy-

6-oxa-5-boranuidatricyclo[5.4.0.0^{2,4}]undeca-1(7),8,10-triene-8-carboxylate

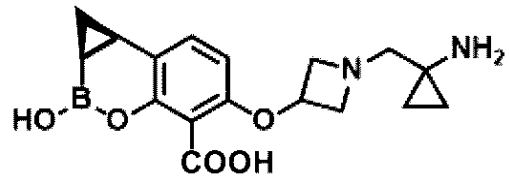
[Chemical Formula 933]



,

(1aS,7bR)-5-({1-[(1-aminocyclopropyl)methyl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

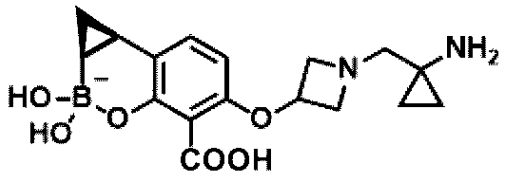
[Chemical Formula 934]



,

(2R,4S)-9-{1-[(1-aminocyclopropyl)methyl]azetidin-3-yl}oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.0^{2,4}]undeca-1(7),8,10-triene-8-carboxylate

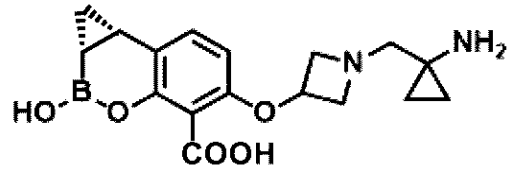
[Chemical Formula 935]



,

(1aR,7bS)-5-({1-[(1-aminocyclopropyl)methyl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

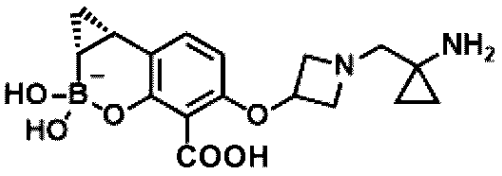
[Chemical Formula 936]



,

(2S,4R)-9-{1-[(1-aminocyclopropyl)methyl]azetidin-3-yl}oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.0^{2,4}]undeca-1(7),8,10-triene-8-carboxylate

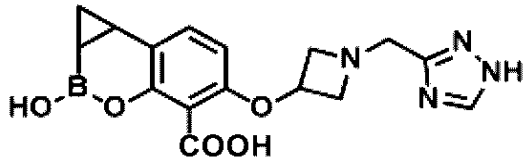
[Chemical Formula 937]



,

2-hydroxy-5-({1-[(1H-1,2,4-triazol-3-yl)methyl]azetidin-3-yl}oxy)-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

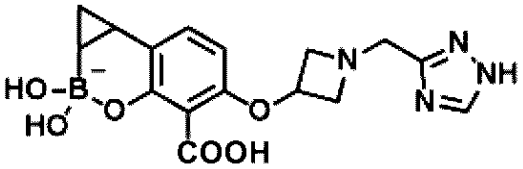
[Chemical Formula 938]



,

5,5-dihydroxy-9-{1-[(1H-1,2,4-triazol-3-yl)methyl]azetidin-3-yl}oxy-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

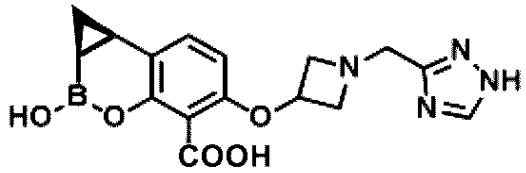
[Chemical Formula 939]



,

(1aS,7bR)-2-hydroxy-5-({1-[(1H-1,2,4-triazol-3-yl)methyl]azetidin-3-yl}oxy)-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

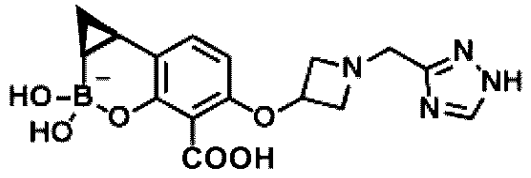
[Chemical Formula 940]



,

(2R,4S)-5,5-dihydroxy-9-{1-[(1H-1,2,4-triazol-3-yl)methyl]-azetidin-3-yl}oxy-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

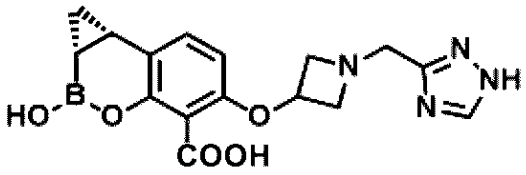
[Chemical Formula 941]



,

(1aR,7bS)-2-hydroxy-5-({1-[(1H-1,2,4-triazol-3-yl)methyl]azetidin-3-yl}oxy)-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

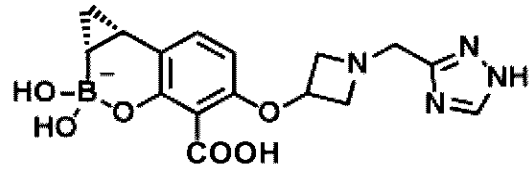
[Chemical Formula 942]



,

(2S,4R)-5,5-dihydroxy-9-{1-[(1H-1,2,4-triazol-3-yl)methyl]-azetidin-3-yl}oxy-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

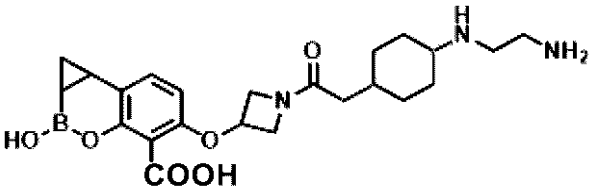
[Chemical Formula 943]



,

5-{[1-({4-[(2-aminoethyl)amino]cyclohexyl}acetyl)azetidin-3-yl]oxy}-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

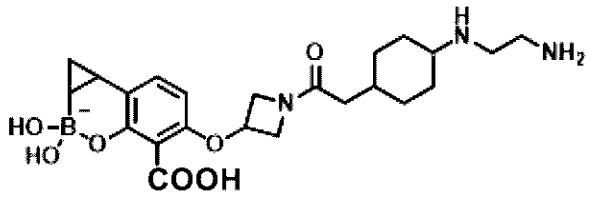
[Chemical Formula 944]



,

9-[1-({4-[(2-aminoethyl)amino]cyclohexyl}acetyl)azetidin-3-yl]oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

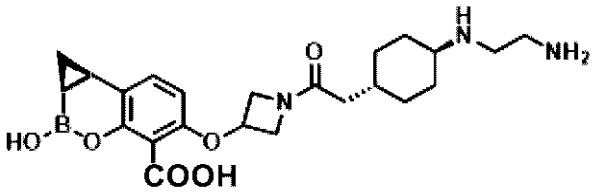
[Chemical Formula 945]



,

(1aS,7bR)-5-{[1-({(1r,4r)-4-[(2-aminoethyl)amino]cyclohexyl}-acetyl)azetidin-3-yl]oxy}-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

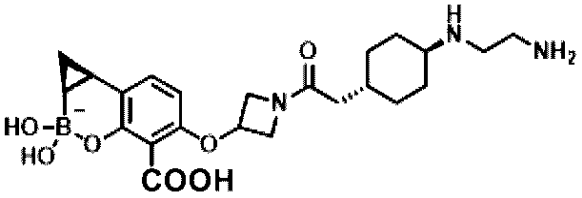
[Chemical Formula 946]



,

(2R,4S)-9-[1-({(1r,4r)-4-[(2-aminoethyl)amino]cyclohexyl}acetyl)azetidin-3-yl]oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

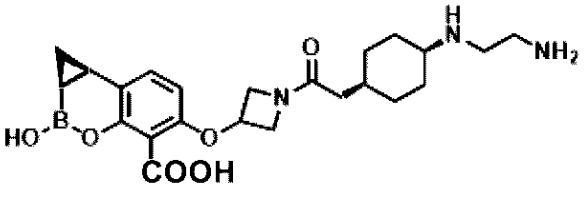
[Chemical Formula 947]



,

(1aS,7bR)-5-{[1-({(1s,4r)-4-[(2-aminoethyl)amino]cyclohexyl}-acetyl)azetidin-3-yl]oxy}-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

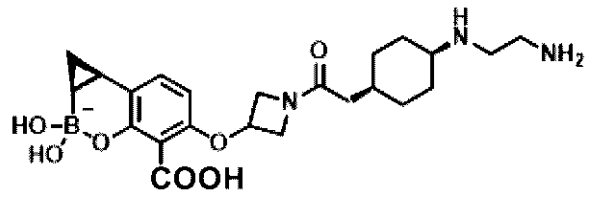
[Chemical Formula 948]



,

(2R,4S)-9-[1-({(1s,4r)-4-[(2-aminoethyl)amino]cyclohexyl}acetyl)-azetidin-3-yl]oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo-[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

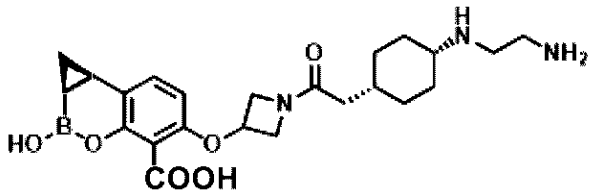
[Chemical Formula 949]



,

(1aS,7bR)-5-{[1-({(1r,4s)-4-[(2-aminoethyl)amino]cyclohexyl}-acetyl)azetidin-3-yl]oxy}-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

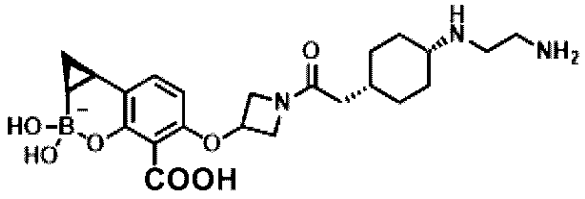
[Chemical Formula 950]



,

(2R,4S)-9-[1-({(1r,4s)-4-[(2-aminoethyl)amino]cyclohexyl}acetyl)-azetidin-3-yl]oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo-[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

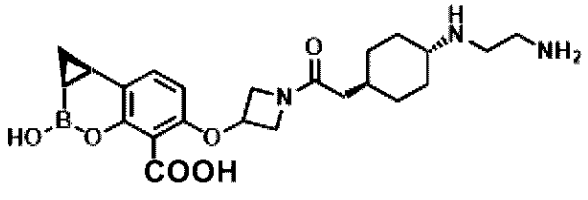
[Chemical Formula 951]



,

(1aS,7bR)-5-{[1-({(1s,4s)-4-[(2-aminoethyl)amino]cyclohexyl}-acetyl)azetidin-3-yl]oxy}-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

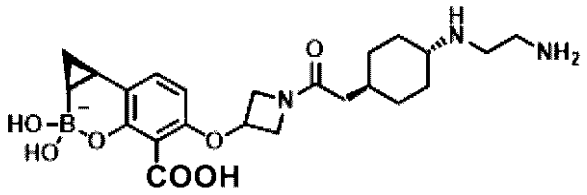
[Chemical Formula 952]



,

(2R,4S)-9-[1-({(1s,4s)-4-[(2-aminoethyl)amino]cyclohexyl}acetyl)-azetidin-3-yl]oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo-[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

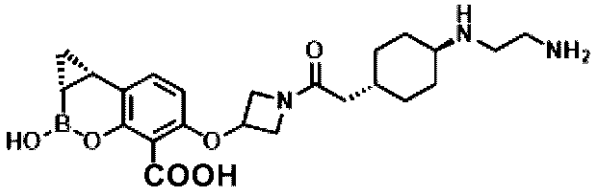
[Chemical Formula 953]



,

(1aR,7bS)-5-{[1-({(1r,4r)-4-[(2-aminoethyl)amino]cyclohexyl}-acetyl)azetidin-3-yl]oxy}-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

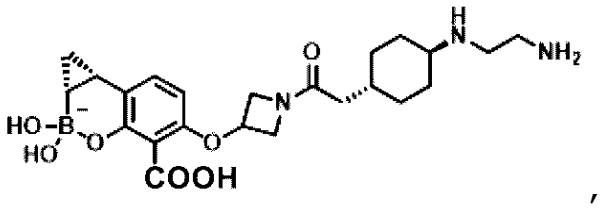
[Chemical Formula 954]



,

(2S,4R)-9-[1-({(1r,4r)-4-[(2-aminoethyl)amino]cyclohexyl}acetyl)-azetidin-3-yl]oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo-[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

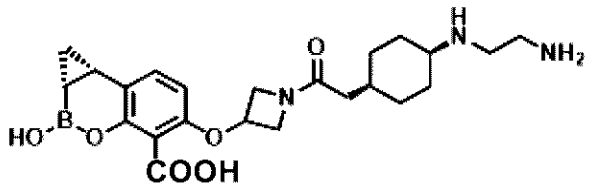
[Chemical Formula 955]



,

(1aR,7bS)-5-{[1-({(1s,4r)-4-[(2-aminoethyl)amino]cyclohexyl}-acetyl)azetidin-3-yl]oxy}-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

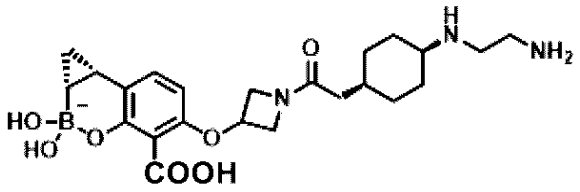
[Chemical Formula 956]



,

(2S,4R)-9-[1-({(1s,4r)-4-[(2-aminoethyl)amino]cyclohexyl}acetyl)-azetidin-3-yl]oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo-[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

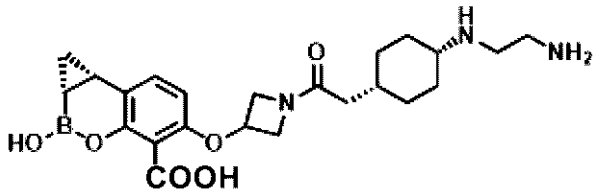
[Chemical Formula 957]



,

(1aR,7bS)-5-{[1-({(1r,4s)-4-[(2-aminoethyl)amino]cyclohexyl}-acetyl)azetidin-3-yl]oxy}-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

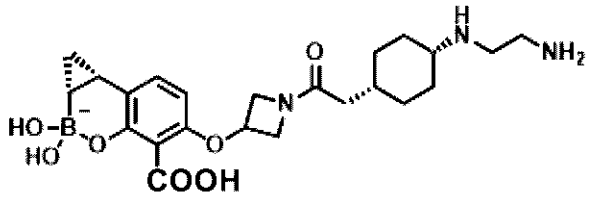
[Chemical Formula 958]



,

(2S,4R)-9-[1-({(1r,4s)-4-[(2-aminoethyl)amino]cyclohexyl}acetyl)-azetidin-3-yl]oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo-[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

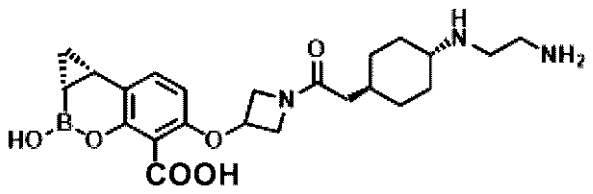
[Chemical Formula 959]



,

(1aR,7bS)-5-{[1-({(1s,4s)-4-[(2-aminoethyl)amino]cyclohexyl}-acetyl)azetidin-3-yl]oxy}-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

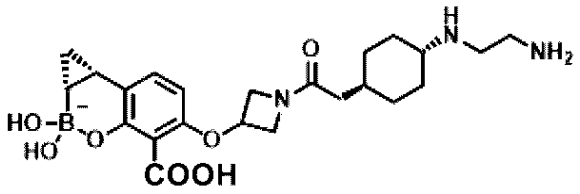
[Chemical Formula 960]



,

(2S,4R)-9-[1-({(1s,4s)-4-[(2-aminoethyl)amino]cyclohexyl}acetyl)-azetidin-3-yl]oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo-[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

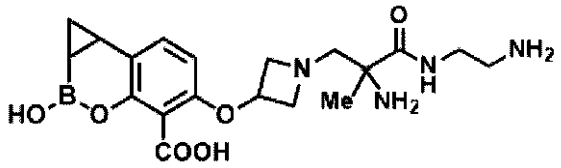
[Chemical Formula 961]



,

5-[(1-{2-amino-3-[(2-aminoethyl)amino]-2-methyl-3-oxopropyl}-azetidin-3-yl)oxy]-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa-[c][1,2]benzoxaborinine-4-carboxylic acid

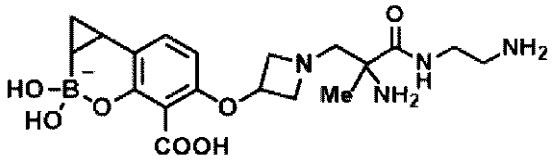
[Chemical Formula 962]



,

9-(1-{2-amino-3-[(2-aminoethyl)amino]-2-methyl-3-oxopropyl}-azetidin-3-yl)oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo-[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

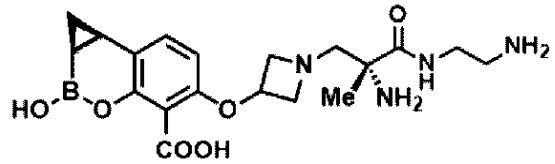
[Chemical Formula 963]



,

(1aS,7bR)-5-[(1-{(2R)-2-amino-3-[(2-aminoethyl)amino]-2-methyl-3-oxopropyl}azetidin-3-yl)oxy]-2-hydroxy-1,1a,2,7b-tetrahydrocyclo-propa[c][1,2]benzoxaborinine-4-carboxylic acid

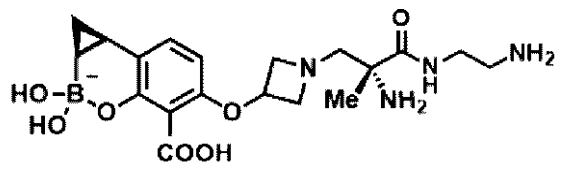
[Chemical Formula 964]



,

(2R,4S)-9-(1-{(2R)-2-amino-3-[(2-aminoethyl)amino]-2-methyl-3-oxopropyl}azetidin-3-yl)oxy-5,5-dihydroxy-6-oxa-5-boranuidatri-cyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

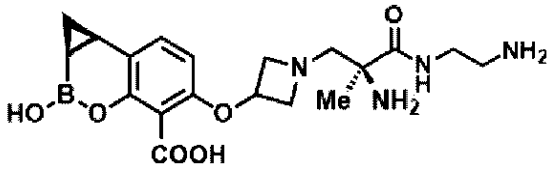
[Chemical Formula 965]



,

(1aS,7bR)-5-[(1-{(2S)-2-amino-3-[(2-aminoethyl)amino]-2-methyl-3-oxopropyl}azetidin-3-yl)oxy]-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

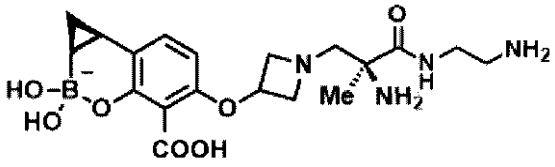
[Chemical Formula 966]



,

(2R,4S)-9-(1-{(2S)-2-amino-3-[(2-aminoethyl)amino]-2-methyl-3-oxopropyl}azetidin-3-yl)oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

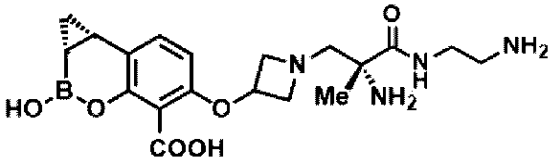
[Chemical Formula 967]



,

(1aR,7bS)-5-[(1-{(2R)-2-amino-3-[(2-aminoethyl)amino]-2-methyl-3-oxopropyl}azetidin-3-yl)oxy]-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

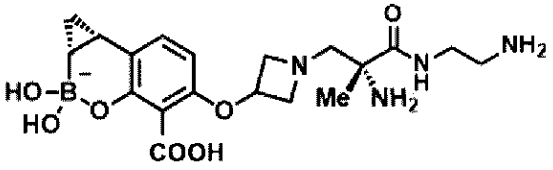
[Chemical Formula 968]



,

(2S,4R)-9-(1-{(2R)-2-amino-3-[(2-aminoethyl)amino]-2-methyl-3-oxopropyl}azetidin-3-yl)oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

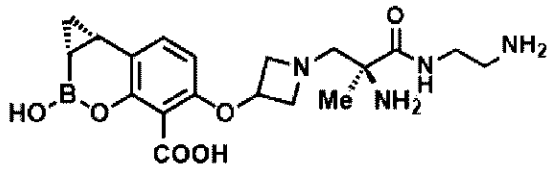
[Chemical Formula 969]



,

(1aR,7bS)-5-[(1-{(2S)-2-amino-3-[(2-aminoethyl)amino]-2-methyl-3-oxopropyl}azetidin-3-yl)oxy]-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

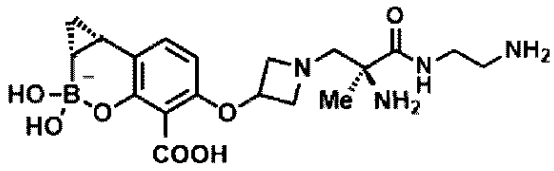
[Chemical Formula 970]



,

(2S,4R)-9-(1-{(2S)-2-amino-3-[(2-aminoethyl)amino]-2-methyl-3-oxopropyl}azetidin-3-yl)oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylate

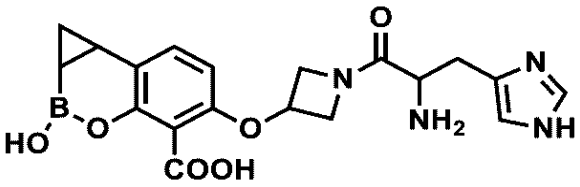
[Chemical Formula 971]



,

5-[(1-histidylazetidin-3-yl)oxy]-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

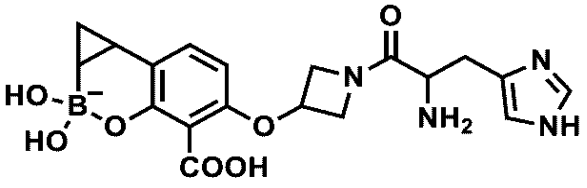
[Chemical Formula 972]



,

9-(1-histidylazetidin-3-yl)oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylic acid

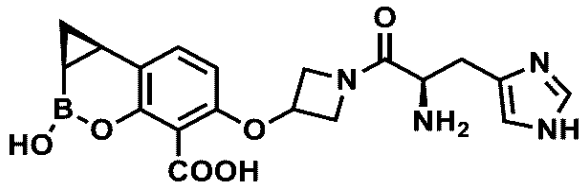
[Chemical Formula 973]



,

(1aS,7bR)-5-[(1-D-histidylazetidin-3-yl)oxy]-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

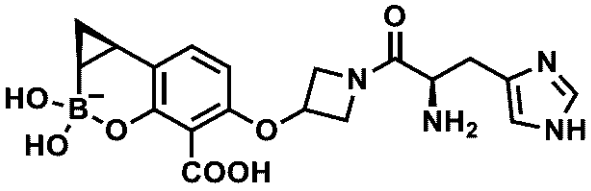
[Chemical Formula 974]



,

(2R,4S)-9-(1-D-histidylazetidin-3-yl)oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylic acid

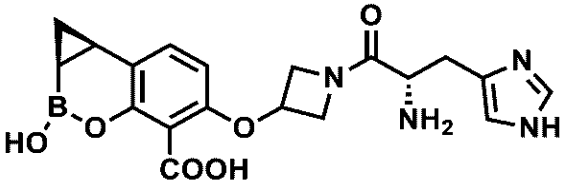
[Chemical Formula 975]



,

(1aS,7bR)-5-[(1-L-histidylazetidin-3-yl)oxy]-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

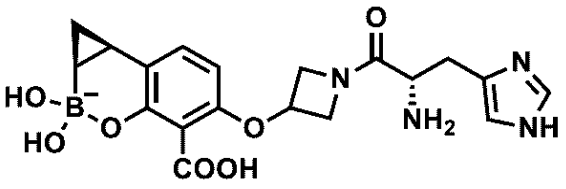
[Chemical Formula 976]



,

(2R,4S)-9-(1-L-histidylazetidin-3-yl)oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylic acid

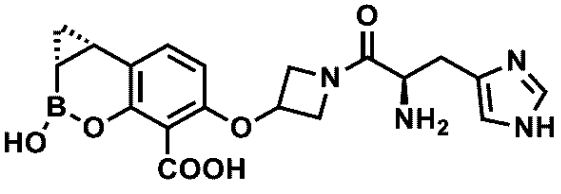
[Chemical Formula 977]



,

(1aR,7bS)-5-[(1-D-histidylazetidin-3-yl)oxy]-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

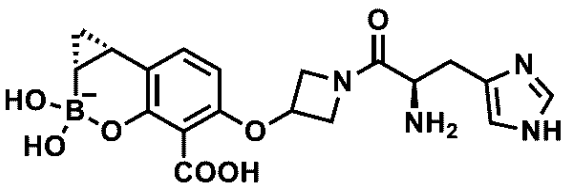
[Chemical Formula 978]



,

(2S,4R)-9-(1-D-histidylazetidin-3-yl)oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.0^{2,4}]undeca-1(7),8,10-triene-8-carboxylic acid

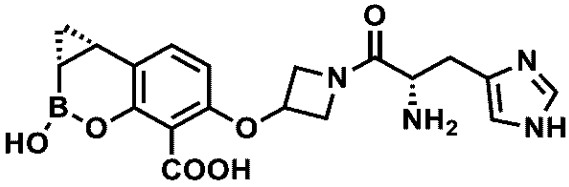
[Chemical Formula 979]



,

(1aR,7bS)-5-[(1-L-histidylazetidin-3-yl)oxy]-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

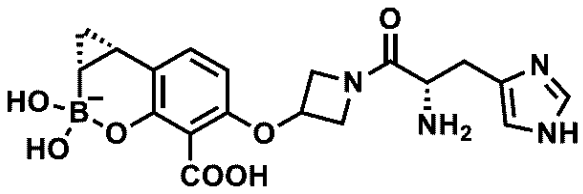
[Chemical Formula 980]



,

(2S,4R)-9-(1-L-histidylazetidin-3-yl)oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.0^{2,4}]undeca-1(7),8,10-triene-8-carboxylic acid

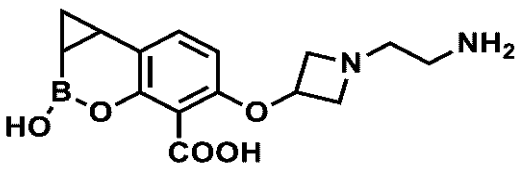
[Chemical Formula 981]



,

5-{[1-(2-aminoethyl)azetidin-3-yl]oxy}-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

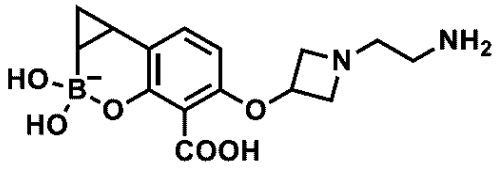
[Chemical Formula 982]



,

9-[1-(2-aminoethyl)azetidin-3-yl]oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.0^{2,4}]undeca-1(7),8,10-triene-8-carboxylic acid

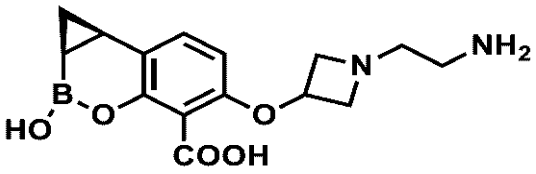
[Chemical Formula 983]



,

(1aS,7bR)-5-{[1-(2-aminoethyl)azetidin-3-yl]oxy}-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

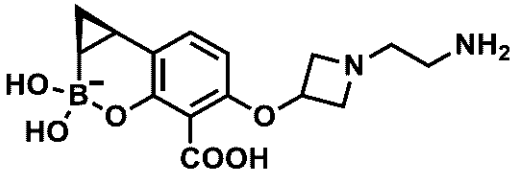
[Chemical Formula 984]



,

(2R,4S)-9-[1-(2-aminoethyl)azetidin-3-yl]oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylic acid

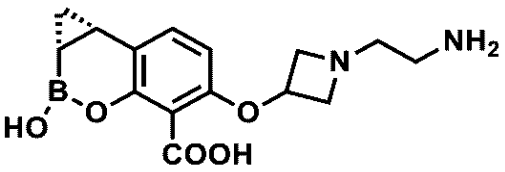
[Chemical Formula 985]



,

(1aR,7bS)-5-{[1-(2-aminoethyl)azetidin-3-yl]oxy}-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

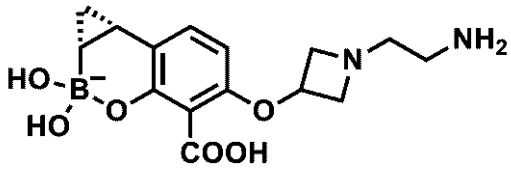
[Chemical Formula 986]



,

(2S,4R)-9-[1-(2-aminoethyl)azetidin-3-yl]oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylic acid

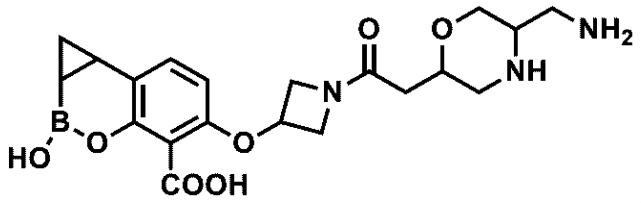
[Chemical Formula 987]



,

5-[(1-{[5-(aminomethyl)morpholin-2-yl]acetyl}azetidin-3-yl)oxy]-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

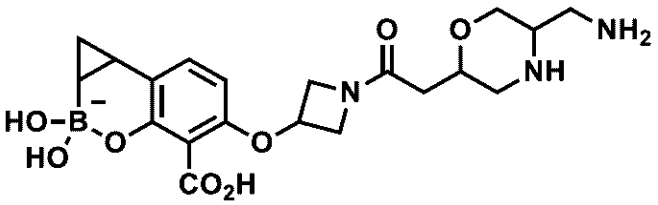
[Chemical Formula 988]



,

9-(1-{[5-(aminomethyl)morpholin-2-yl]acetyl}azetidin-3-yl)oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylic acid

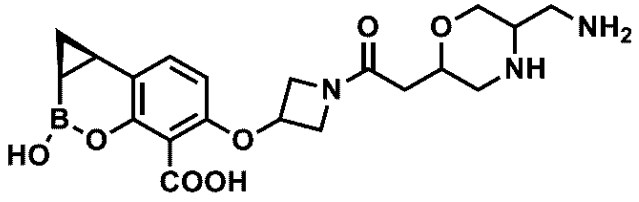
[Chemical Formula 989]



,

(1aS,7bR)-5-[(1-{[5-(aminomethyl)morpholin-2-yl]acetyl}azetidin-3-yl)oxy]-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

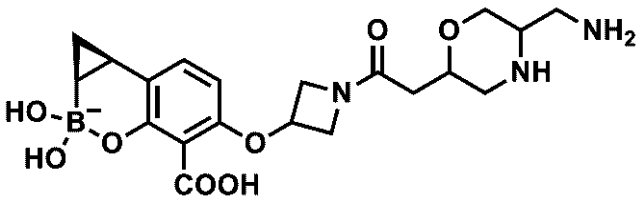
[Chemical Formula 990]



,

(2R,4S)-9-(1-{[5-(aminomethyl)morpholin-2-yl]acetyl}azetidin-3-yl)oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylic acid

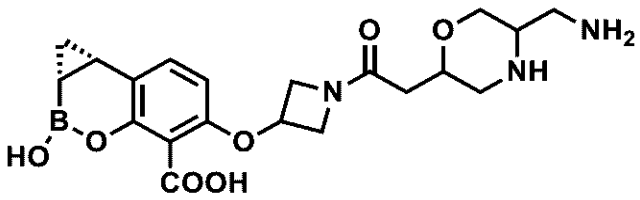
[Chemical Formula 991]



,

(1aR,7bS)-5-[(1-{[5-(aminomethyl)morpholin-2-yl]acetyl}azetidin-3-yl)oxy]-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

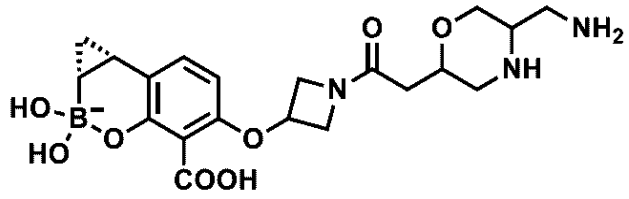
[Chemical Formula 992]



,

(2S,4R)-9-(1-{[5-(aminomethyl)morpholin-2-yl]acetyl}azetidin-3-yl)oxy-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylic acid

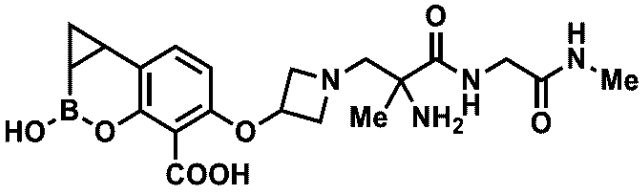
[Chemical Formula 993]



,

5-({1-[2-amino-2-methyl-3-{[2-(methylamino)-2-oxoethyl]amino}-3-oxopropyl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

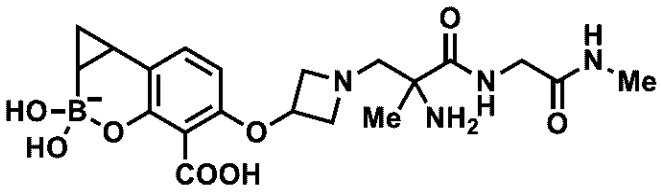
[Chemical Formula 994]



,

9-({1-[2-amino-2-methyl-3-{[2-(methylamino)-2-oxoethyl]amino}-3-oxopropyl]azetidin-3-yl}oxy)-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylic acid

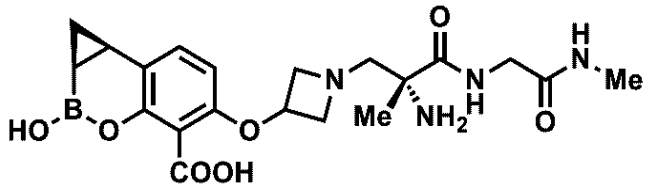
[Chemical Formula 995]



,

(1aS,7bR)-5-({1-[(2R)-2-amino-2-methyl-3-{[2-(methylamino)-2-oxo ethyl]amino}-3-oxopropyl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

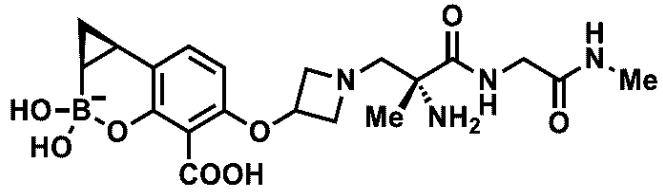
[Chemical Formula 996]



,

(2R,4S)-9-({1-[(2R)-2-amino-2-methyl-3-{[2-(methylamino)-2-oxo ethyl]amino}-3-oxopropyl]azetidin-3-yl}oxy)-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylic acid

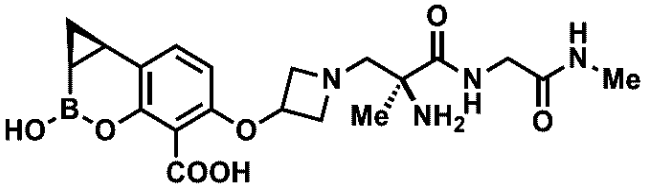
[Chemical Formula 997]



,

(1aS,7bR)-5-({1-[(2S)-2-amino-2-methyl-3-{[2-(methylamino)-2-oxo ethyl]amino}-3-oxopropyl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

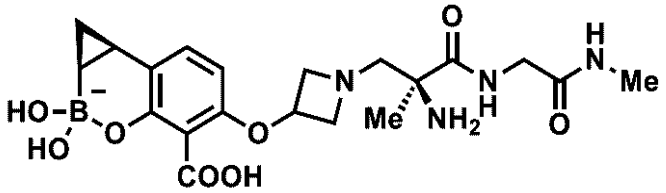
[Chemical Formula 998]



,

(2R,4S)-9-({1-[(2S)-2-amino-2-methyl-3-{[2-(methylamino)-2-oxo ethyl]amino}-3-oxopropyl]azetidin-3-yl}oxy)-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylic acid

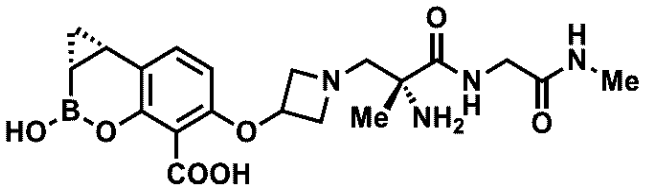
[Chemical Formula 999]



,

(1aR,7bS)-5-({1-[(2R)-2-amino-2-methyl-3-{[2-(methylamino)-2-oxo ethyl]amino}-3-oxopropyl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

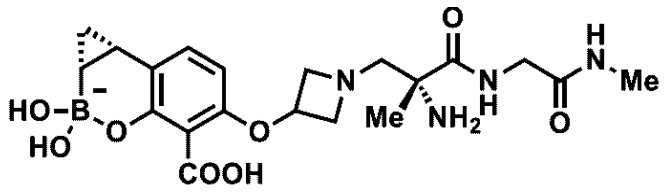
[Chemical Formula 1000]



,

(2S,4R)-9-({1-[(2R)-2-amino-2-methyl-3-{[2-(methylamino)-2-oxo ethyl]amino}-3-oxopropyl]azetidin-3-yl}oxy)-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylic acid

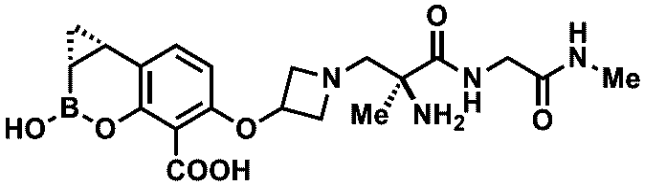
[Chemical Formula 1001]



,

(1aR,7bS)-5-({1-[(2S)-2-amino-2-methyl-3-{[2-(methylamino)-2-oxo ethyl]amino}-3-oxopropyl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

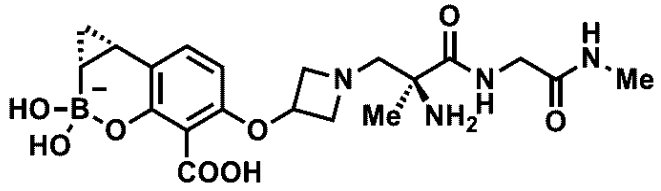
[Chemical Formula 1002]



,

(2S,4R)-9-({1-[(2S)-2-amino-2-methyl-3-{[2-(methylamino)-2-oxo ethyl]amino}-3-oxopropyl]azetidin-3-yl}oxy)-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylic acid

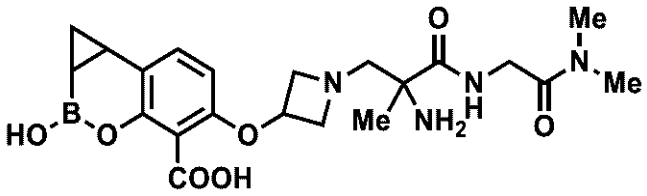
[Chemical Formula 1003]



,

5-({1-[2-amino-3-{[2-(dimethylamino)-2-oxoethyl]amino}-2-methyl-3-oxopropyl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

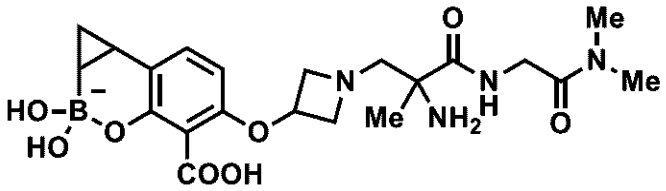
[Chemical Formula 1004]



,

9-({1-[2-amino-3-{[2-(dimethylamino)-2-oxoethyl]amino}-2-methyl-3-oxopropyl]azetidin-3-yl}oxy)-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylic acid

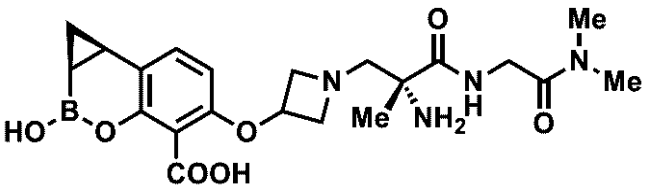
[Chemical Formula 1005]



,

(1aS,7bR)-5-({1-[(2R)-2-amino-3-{[2-(dimethylamino)-2-oxoethyl]-amino}-2-methyl-3-oxopropyl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

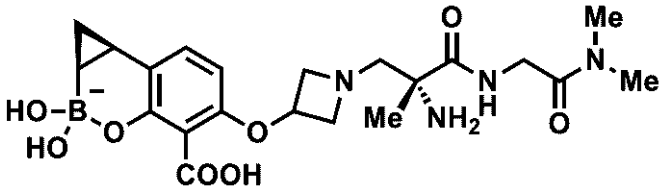
[Chemical Formula 1006]



,

(2R,4S)-9-({1-[(2R)-2-amino-3-{[2-(dimethylamino)-2-oxoethyl]-amino}-2-methyl-3-oxopropyl]azetidin-3-yl}oxy)-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylic acid

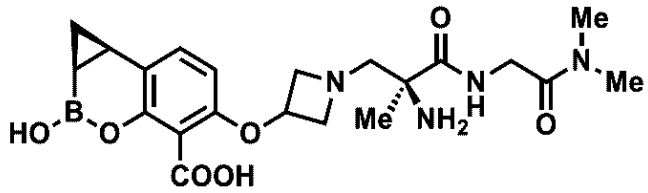
[Chemical Formula 1007]



,

(1aS,7bR)-5-({1-[(2S)-2-amino-3-{[2-(dimethylamino)-2-oxoethyl]-amino}-2-methyl-3-oxopropyl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

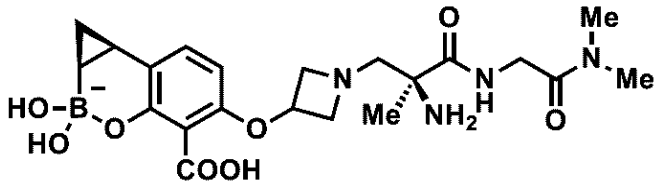
[Chemical Formula 1008]



,

(2R,4S)-9-({1-[(2S)-2-amino-3-{[2-(dimethylamino)-2-oxoethyl]-amino}-2-methyl-3-oxopropyl]azetidin-3-yl}oxy)-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylic acid

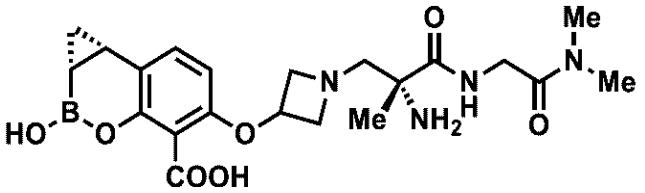
[Chemical Formula 1009]



,

(1aR,7bS)-5-({1-[(2R)-2-amino-3-{[2-(dimethylamino)-2-oxoethyl]-amino}-2-methyl-3-oxopropyl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

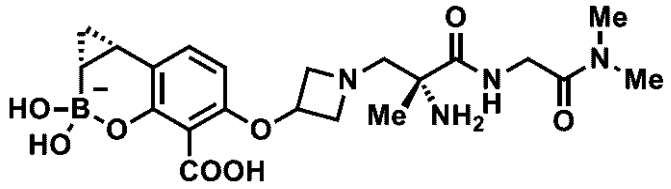
[Chemical Formula 1010]



,

(2S,4R)-9-({1-[(2R)-2-amino-3-{[2-(dimethylamino)-2-oxoethyl]-amino}-2-methyl-3-oxopropyl]azetidin-3-yl}oxy)-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylic acid

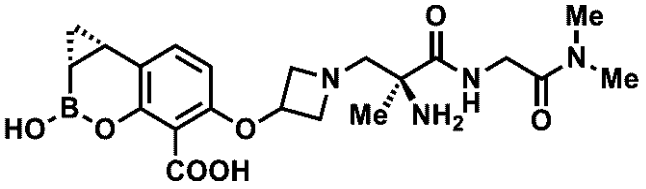
[Chemical Formula 1011]



,

(1aR,7bS)-5-({1-[(2S)-2-amino-3-{[2-(dimethylamino)-2-oxoethyl]-amino}-2-methyl-3-oxopropyl]azetidin-3-yl}oxy)-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

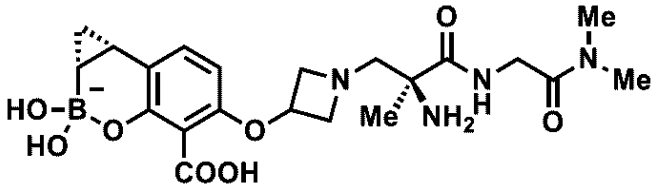
[Chemical Formula 1012]



,

(2S,4R)-9-({1-[(2S)-2-amino-3-{[2-(dimethylamino)-2-oxoethyl]-amino}-2-methyl-3-oxopropyl]azetidin-3-yl}oxy)-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylic acid

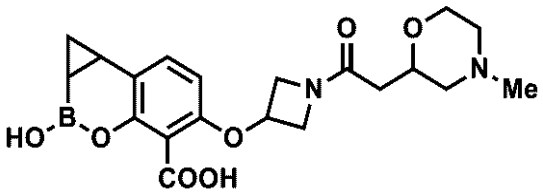
[Chemical Formula 1013]



,

2-hydroxy-5-[(1-{[4-methylmorpholin-2-yl]acetyl}azetidin-3-yl)oxy]-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

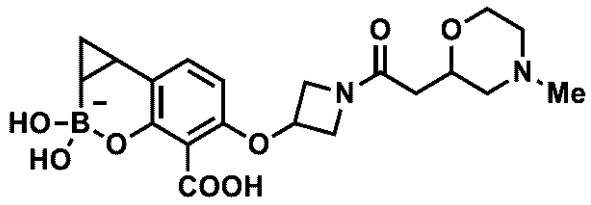
[Chemical Formula 1014]



,

5,5-dihydroxy-9-[(1-{[(4-methylmorpholin-2-yl]acetyl}azetidin-3-yl)oxy]-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

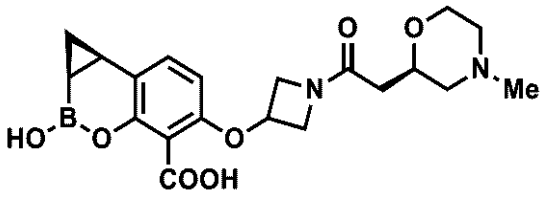
[Chemical Formula 1015]



,

(1aS,7bR)-2-hydroxy-5-[(1-{[(2R)-4-methylmorpholin-2-yl]acetyl}-azetidin-3-yl)oxy]-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

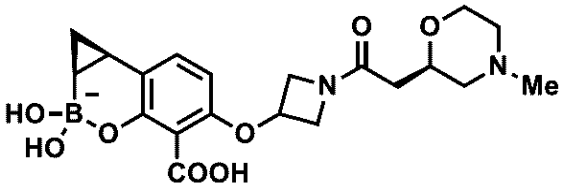
[Chemical Formula 1016]



,

(2R,4S)-5,5-dihydroxy-9-[(1-{[(2R)-4-methylmorpholin-2-yl]acetyl}-azetidin-3-yl)oxy]-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

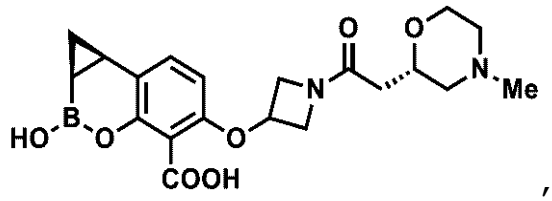
[Chemical Formula 1017]



,

(1aS,7bR)-2-hydroxy-5-[(1-{[(2S)-4-methylmorpholin-2-yl]acetyl}-azetidin-3-yl)oxy]-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

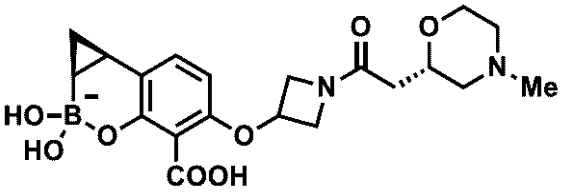
[Chemical Formula 1018]



,

(2R,4S)-5,5-dihydroxy-9-[(1-{[(2S)-4-methylmorpholin-2-yl]acetyl}-azetidin-3-yl)oxy]-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

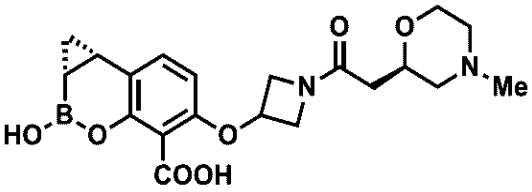
[Chemical Formula 1019]



,

(1aR,7bS)-2-hydroxy-5-[(1-{[(2R)-4-methylmorpholin-2-yl]acetyl}-azetidin-3-yl)oxy]-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

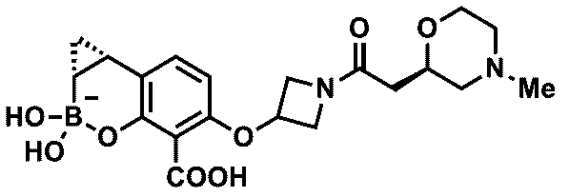
[Chemical Formula 1020]



,

(2S,4R)-5,5-dihydroxy-9-[(1-{[(2R)-4-methylmorpholin-2-yl]acetyl}-azetidin-3-yl)oxy]-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

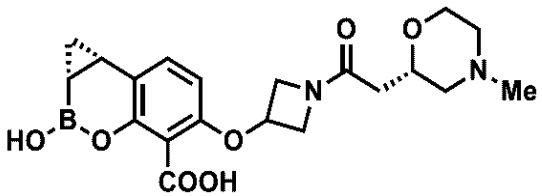
[Chemical Formula 1021]



,

(1aR,7bS)-2-hydroxy-5-[(1-{[(2S)-4-methylmorpholin-2-yl]acetyl}-azetidin-3-yl)oxy]-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylic acid

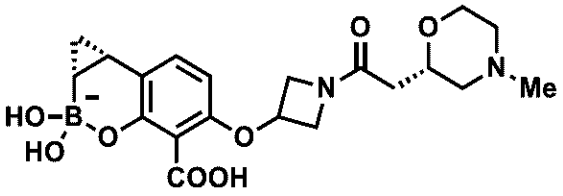
[Chemical Formula 1022]



,

(2S,4R)-5,5-dihydroxy-9-[(1-{[(2R)-4-methylmorpholin-2-yl]acetyl}-azetidin-3-yl)oxy]-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

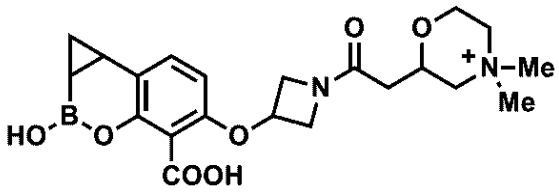
[Chemical Formula 1023]



,

5-[(1-{[4,4-dimethylmorpholin-4-ium-2-yl]acetyl}azetidin-3-yl)oxy]-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c][1,2]benzoxaborinine-4-carboxylate

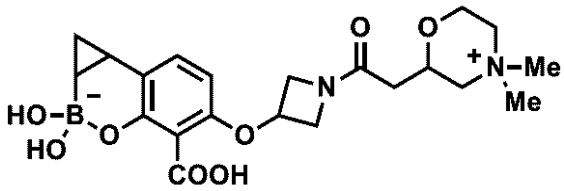
[Chemical Formula 1024]



,

9-[(1-{[4,4-dimethylmorpholin-4-ium-2-yl]acetyl}azetidin-3-yl)oxy]-5,5-dihydroxy-6-oxa-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylic acid

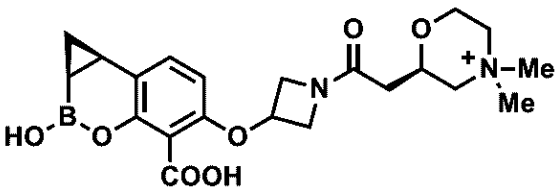
[Chemical Formula 1025]



,

(1aS,7bR)-5-[(1-{[(2R)-4,4-dimethylmorpholin-4-ium-2-yl]acetyl}-azetidin-3-yl)oxy]-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa-[c][1,2]benzoxaborinine-4-carboxylate

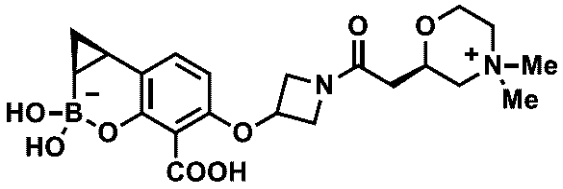
[Chemical Formula 1026]



,

(2R,4S)-9-[(1-{[(2R)-4,4-dimethylmorpholin-4-ium-2-yl]acetyl}-azetidin-3-yl)oxy]-5,5-dihydroxy-6-oxa-5-boranuidatricyclo-[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylic acid

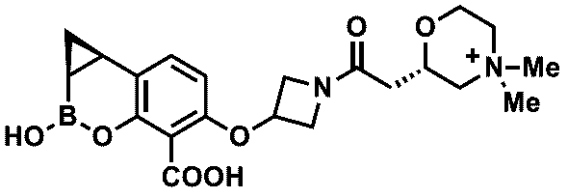
[Chemical Formula 1027]



,

(1aS,7bR)-5-[(1-{[(2S)-4,4-dimethylmorpholin-4-ium-2-yl]acetyl}-azetidin-3-yl)oxy]-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c]-[1,2]benzoxaborinine-4-carboxylate

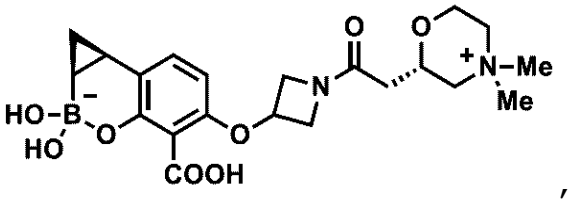
[Chemical Formula 1028]



,

(2R,4S)-9-[(1-{[(2S)-4,4-dimethylmorpholin-4-ium-2-yl]acetyl}-azetidin-3-yl)oxy]-5,5-dihydroxy-6-oxa-5-boranuidatricyclo-[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylic acid

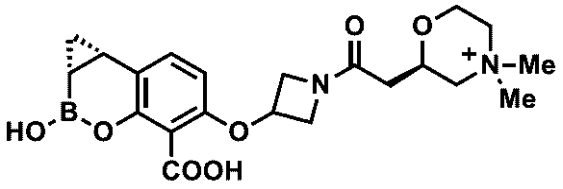
[Chemical Formula 1029]



,

(1aR,7bS)-5-[(1-{[(2R)-4,4-dimethylmorpholin-4-ium-2-yl]acetyl}-azetidin-3-yl)oxy]-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c]-[1,2]benzoxaborinine-4-carboxylate

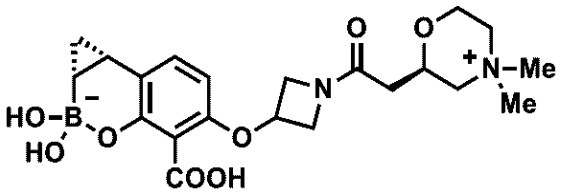
[Chemical Formula 1030]



,

(2S,4R)-9-[(1-{[(2R)-4,4-dimethylmorpholin-4-ium-2-yl]acetyl}-azetidin-3-yl)oxy]-5,5-dihydroxy-6-oxa-5-boranuidatricyclo-[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylic acid

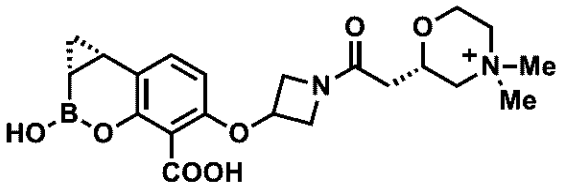
[Chemical Formula 1031]



,

(1aR,7bS)-5-[(1-{[(2S)-4,4-dimethylmorpholin-4-ium-2-yl]acetyl}-azetidin-3-yl)oxy]-2-hydroxy-1,1a,2,7b-tetrahydrocyclopropa[c]-[1,2]benzoxaborinine-4-carboxylate

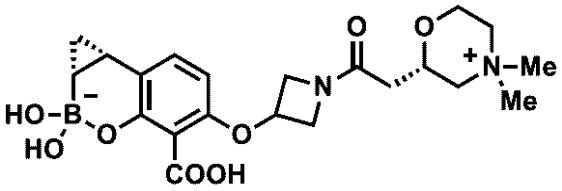
[Chemical Formula 1032]



,

(2S,4R)-9-[(1-{[(2S)-4,4-dimethylmorpholin-4-ium-2-yl]acetyl}-azetidin-3-yl)oxy]-5,5-dihydroxy-6-oxa-5-boranuidatricyclo-[5.4.0.$0^{2,4}$]undeca-1(7),8,10-triene-8-carboxylic acid

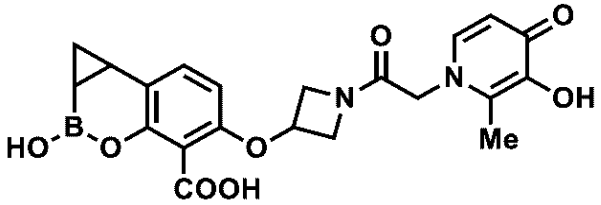
[Chemical Formula 1033]



,

2-hydroxy-5-({1-[(3-hydroxy-2-methyl-4-oxopyridin-1(4H)-yl) acetyl]azetidin-3-yl}oxy)-1,1a,2,7b-tetrahydrocyclopropa[c] [1,2]benzoxaborinine-4-carboxylic acid

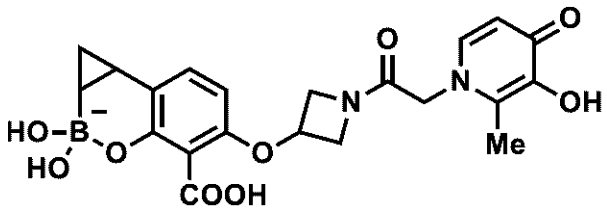
[Chemical Formula 1034]



,

5,5-dihydroxy-9-({1-[(3-hydroxy-2-methyl-4-oxopyridin-1(4H)-yl)-acetyl]azetidin-3-yl}oxy)-5-boranuidatricyclo[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

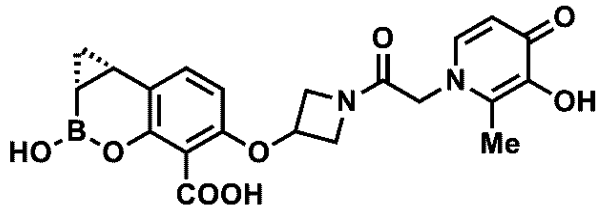
[Chemical Formula 1035]



,

(1aR,7bS)-2-hydroxy-5-({1-[(3-hydroxy-2-methyl-4-oxopyridin-1(4H)-yl)acetyl]azetidin-3-yl}oxy)-1,1a,2,7b-tetrahydrocyclopropa[c]-[1,2]benzoxaborinine-4-carboxylic acid

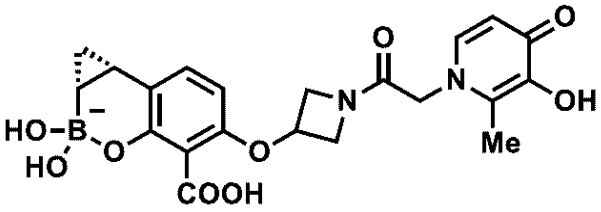
[Chemical Formula 1036]



,

(2S,4R)-5,5-dihydroxy-9-({1-[(3-hydroxy-2-methyl-4-oxopyridin-1(4H)-yl)acetyl]azetidin-3-yl}oxy)-5-boranuidatricyclo-[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

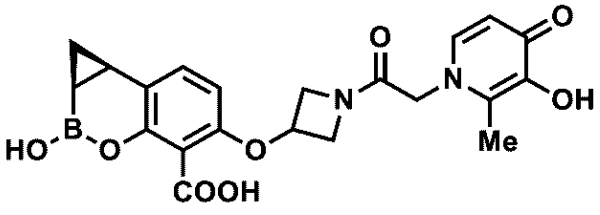
[Chemical Formula 1037]



,

(1aS,7bR)-2-hydroxy-5-({1-[(3-hydroxy-2-methyl-4-oxopyridin-1(4H)-yl)acetyl]azetidin-3-yl}oxy)-1,1a,2,7b-tetrahydrocyclopropa[c]-[1,2]benzoxaborinine-4-carboxylic acid

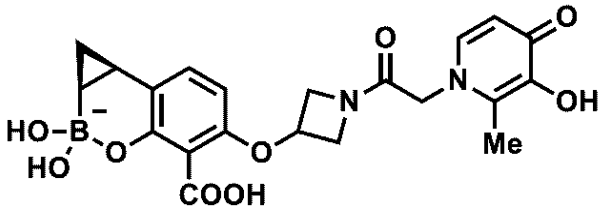
[Chemical Formula 1038]



, and

(2R,4S)-5,5-dihydroxy-9-({1-[(3-hydroxy-2-methyl-4-oxopyridin-1(4H)-yl)acetyl]azetidin-3-yl}oxy)-5-boranuidatricyclo-[5.4.0.$0^{2,4}$]undeca-1(11),7,9-triene-8-carboxylic acid

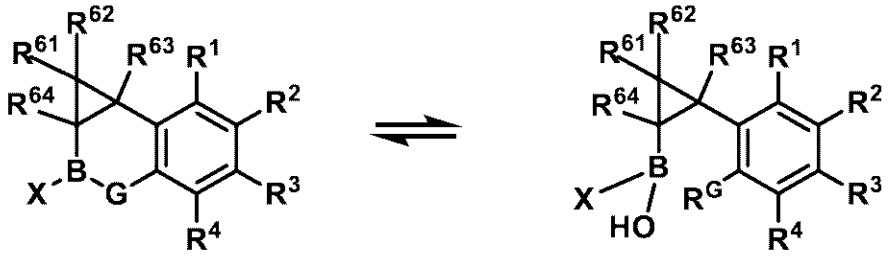
[Chemical Formula 1039]



.

47. A compound represented by formula (11):

[Chemical Formula 1040]



(1a) (11)

or a pharmaceutically acceptable salt thereof,

wherein R^G is a hydroxyl group, a thiol group, or $-NHR^{a1}$,

G is an oxygen atom, a sulfur atom, or $-NR^{a1}-$,

X is a hydroxyl group, an optionally substituted alkoxy group, or $-NR^{a2}R^{b1}$,

R^{a1}, R^{a2}, and R^{b1} are the same or different, each independently a hydrogen atom, a hydroxyl group, an optionally substituted hydrocarbyl group, or an optionally substituted heterohydrocarbyl group,

wherein R^{a2} and R^{b1} together may form an optionally substituted nitrogen-containing non-aryl heterocycle,

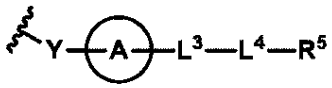
L^1 is a single bond, an oxygen atom, a sulfur atom, -SO-, $-SO_2-$, an optionally substituted hydrocarbylene group, or an optionally substituted heterohydrocarbylene group,

L^2 is a single bond or an optionally substituted hydrocarbylene group,

Z is a hydrogen atom, a hydroxyl group, an optionally substituted hydrocarbyl group, or an optionally substituted heterohydrocarbyl group,

one of R^1, R^2, and R^3 is represented by formula (2):

[Chemical Formula 734]



(2)

wherein

Y is an oxygen atom, a sulfur atom, or $-NR^j-$, and R^j is a hydrogen atom, a hydroxyl group, or an optionally substituted hydrocarbyl group,

ring A is an optionally substituted non-aryl heterocycle,

L^3 is an oxygen atom, a sulfur atom, an optionally substituted hydrocarbylene group, an optionally substituted heterohydrocarbylene group, optionally substituted -NH-, optionally substituted $-NH-SO_2-$, $-S(=O)-$, or $-S(=O)_2-$,

L^4 is a single bond, an optionally substituted hydrocarbylene group, an optionally substituted heterohydrocarbylene group, or $-C(=N-OR^{h1})-$,

R^{h1} is

1) a hydrogen atom,

2) a C_{1-6} alkyl group,

3) a C_{3-10} alicyclic group,

4) C_{6-10} aryl,

5) 5- or 6-membered heteroaryl, or

6) a 4- to 10-membered non-aryl heterocycle,

(wherein each substituent from 2) to 6) is optionally substituted),

R^5 is a hydrogen atom, a hydroxyl group, an optionally substituted hydrocarbyl group, an optionally substituted heterohydrocarbyl group, optionally substituted -NHOH, a sulfo group (sulfonic acid group), optionally substituted $-SO_2H$, optionally substituted $-SO_2-NH_2$, optionally substituted $-S(=O)(=NH)H$, optionally substituted $-NH-SO_2-H$, optionally substituted $-NH-SO_2-NH_2$, optionally substituted $-N=S(=O)H_2$, or optionally substituted $-NH_2$,

the remaining two (without the structure of formula (2) among R^1, R^2, and R^3) are the same or different, each independently a hydrogen atom, halogen, a hydroxyl group, an optionally substituted hydrocarbyl group, or an optionally substituted heterohydrocarbyl group,

R^4 is

1) $-C(=O)R^8$,

2) $-SO_2-L^6-R^8$,

(wherein R^8 in 1) and 2) is a hydroxyl group, an optionally substituted hydrocarbyl group, or an optionally substituted heterohydrocarbyl group, and L^6 is a single bond or an optionally substituted hydrocarbylene group),

3) $-NR^{a4}R^{b3}$,

4) $-B(OR^{m1})_2$,

5) $-PO(OR^{m1})(OR^{m2})$,

6) optionally substituted heteroaryl,

7) an optionally substituted non-aryl heterocycle, or

8) a bioisostere of one of 1) to 7),

(wherein the formulas of 1), 2), 4), 5), and 6) include a carboxylic acid isostere, and 8) may include them in duplicates),

R^{a4} and R^{b3} are the same or different, each independently having the same definition as R^{a1}, R^{a2}, and R^{b1}, wherein a combination of R^{a4} and R^{b3}, when attached to the same nitrogen atom, together may form an optionally substituted nitrogen-containing non-aryl heterocycle,

R^{m1} is a hydrogen atom or an optionally substituted hydrocarbyl group,

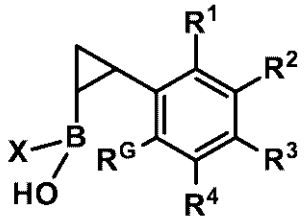
wherein if R^{m1} is attached to a boron atom via an oxygen atom, two R^{m1}, as alkylene, together with the boron atom and two oxygen atoms, may form a non-aryl heterocycle (wherein an alkylene moiety is optionally substituted in the non-aryl heterocycle),

R^{m2} is a hydrogen atom or an optionally substituted hydrocarbyl group, and

R^{61}, R^{62}, R^{63}, and R^{64} are each independently a hydrogen atom, halogen, an optionally substituted alkyl group, or $-L^1-L^2-Z$.

48. The compound or the pharmaceutically acceptable salt thereof according to claim 47, wherein the compound of formula (11) is represented by formula (12):

[Chemical Formula 1041]

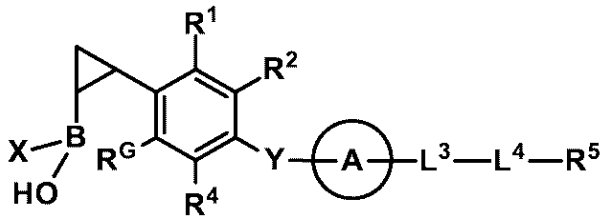


(12)

wherein X, R^1, R^2, R^3, and R^4 are defined the same as the definition according to claim 47.

49. The compound or the pharmaceutically acceptable salt thereof according to claim 47, wherein the compound of formula (11) or formula (12) is represented by formula (13):

[Chemical Formula 1042]

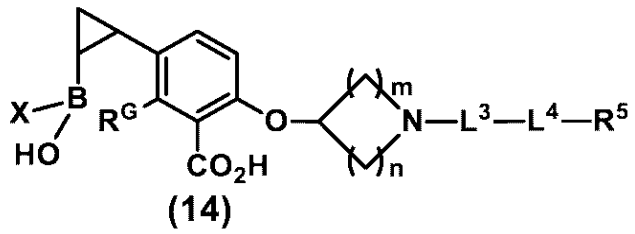


(13)

wherein X, Y, ring A, L^3, L^4, R^1, R^2, R^4, and R^5 are defined the same as the definition according to claim 47.

50. The compound or the pharmaceutically acceptable salt thereof according to claim 49, wherein X and R^G are hydroxyl groups, R^4 is a carboxyl group, and ring A is an optionally substituted 4- to 6-membered nitrogen-containing non-aryl heterocycle.

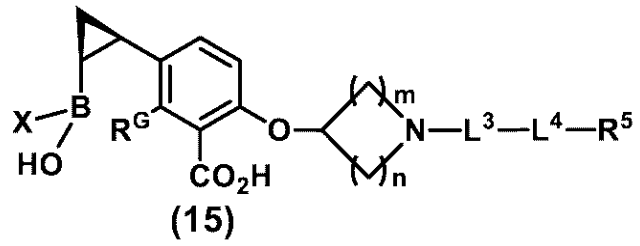
51. The compound or the pharmaceutically acceptable salt thereof according to claim 47, wherein the compound of formula (11), formula (12), or formula (13) is represented by formula (14):
[Chemical Formula 1043]



(14)

wherein X, L^3, L^4, m, n, and R^5 are defined the same as the definition according to claim 1.

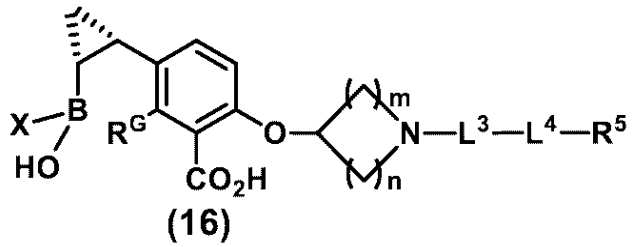
52. The compound or the pharmaceutically acceptable salt thereof according to claim 51, wherein the compound of formula (14) is one of the enantiomers represented by formula (15):
[Chemical Formula 1044]



(15)

and

formula (16):
[Chemical Formula 1045]



(16)

wherein X, L^3, L^4, m, n, and R^5 are defined the same as the definition according to claim 1.

53. The compound or the pharmaceutically acceptable salt thereof according to claim 47, wherein R^G is a hydroxyl group.

54. The compound or the pharmaceutically acceptable salt thereof according to claim 47, wherein X is a hydroxyl group.

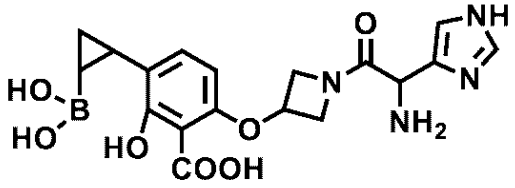
55. The compound or the pharmaceutically acceptable salt thereof according to claim 47, wherein m is 1, and n is 1.

56. The compound or the pharmaceutically acceptable salt thereof according to claim 47, wherein L^4 and R^5 are defined the same as the definition according to claim 27.

57. The compound or the pharmaceutically acceptable salt thereof according to claim 48, selected from the group consisting of the compounds represented by the following names or structural formulas:

6-({1-[amino(1H-imidazol-4-yl)acetyl]azetidin-3-yl}oxy)-3-(2-boronocyclopropyl)-2-hydroxybenzoic acid

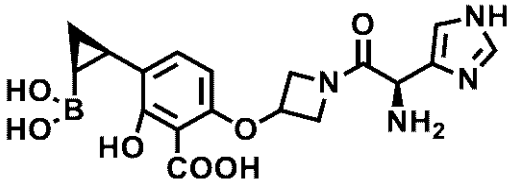
[Chemical Formula 1046]



,

6-({1-[(2R)-2-amino-2-(1H-imidazol-4-yl)acetyl]azetidin-3-yl}oxy)-3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxybenzoic acid

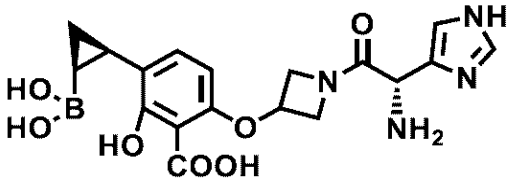
[Chemical Formula 1047]



,

6-({1-[(2S)-2-amino-2-(1H-imidazol-4-yl)acetyl]azetidin-3-yl}oxy)-3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxybenzoic acid

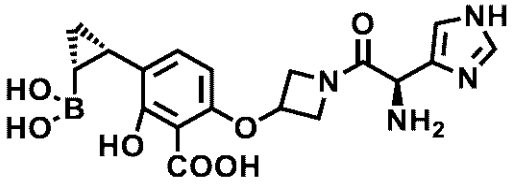
[Chemical Formula 1048]



,

6-({1-[(2R)-2-amino-2-(1H-imidazol-4-yl)acetyl]azetidin-3-yl}oxy)-3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxybenzoic acid

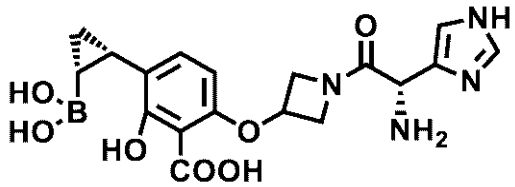
[Chemical Formula 1049]



,

6-({1-[(2S)-2-amino-2-(1H-imidazol-4-yl)acetyl]azetidin-3-yl}oxy)-3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxybenzoic acid

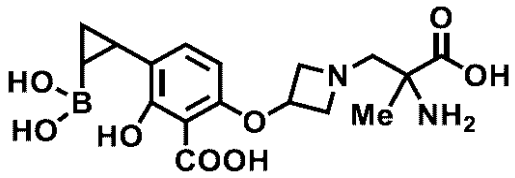
[Chemical Formula 1050]



,

6-({1-(2-amino-2-carboxypropyl)azetidin-3-yl}oxy)-3-(2-boronocyclopropyl)-2-hydroxybenzoic acid

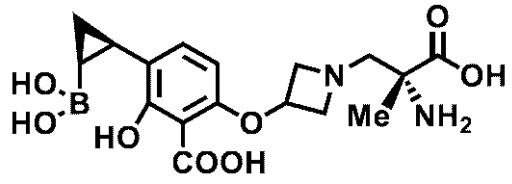
[Chemical Formula 1051]



,

6-({1-[(2R)-2-amino-2-carboxypropyl]azetidin-3-yl}oxy)-3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxybenzoic acid

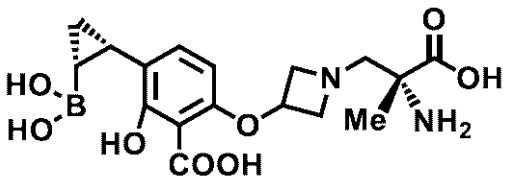
[Chemical Formula 1052]



,

6-({1-[(2R)-2-amino-2-carboxypropyl]azetidin-3-yl}oxy)-3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxybenzoic acid

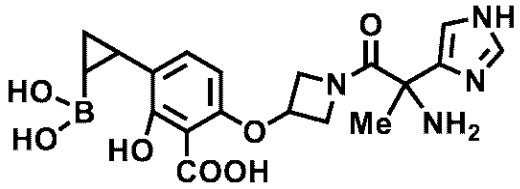
[Chemical Formula 1053]



,

6-({1-[2-amino-2-(1H-imidazol-4-yl)propanoyl]azetidin-3-yl}oxy)-3-(2-boronocyclopropyl)-2-hydroxybenzoic acid

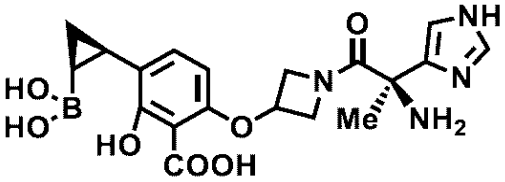
[Chemical Formula 1054]



,

6-({1-[(2R)-2-amino-2-(1H-imidazol-4-yl)propanoyl]azetidin-3-yl}-oxy)-3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxybenzoic acid

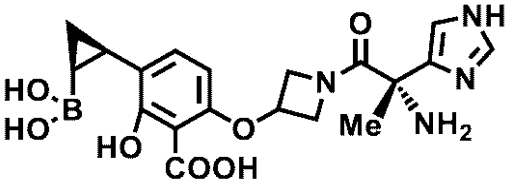
[Chemical Formula 1055]



,

6-({1-[(2S)-2-amino-2-(1H-imidazol-4-yl)propanoyl]azetidin-3-yl}-oxy)-3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxybenzoic acid

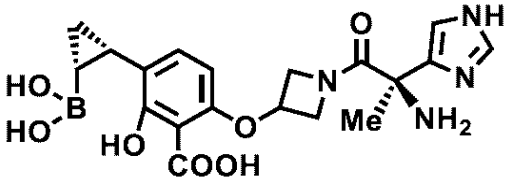
[Chemical Formula 1056]



,

6-({1-[(2R)-2-amino-2-(1H-imidazol-4-yl)propanoyl]azetidin-3-yl}-oxy)-3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxybenzoic acid

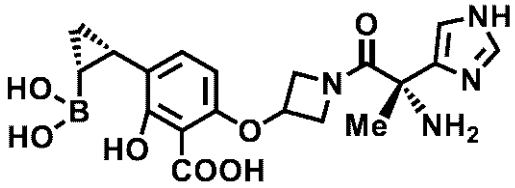
[Chemical Formula 1057]



, and

6-({1-[(2S)-2-amino-2-(1H-imidazol-4-yl)propanoyl]azetidin-3-yl}-oxy)-3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxybenzoic acid

[Chemical Formula 1058]

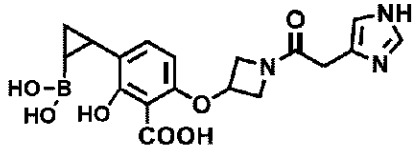


.

58. The compound or the pharmaceutically acceptable salt thereof according to claim 47, selected from the group consisting of the compounds represented by the following names or structural formulas:

3-(2-boronocyclopropyl)-2-hydroxy-6-({1-[(1H-imidazol-4-yl)acetyl]azetidin-3-yl}oxy)benzoic acid

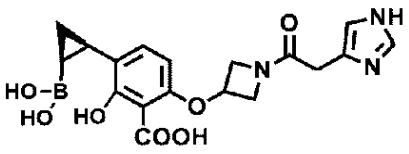
[Chemical Formula 1059]



,

3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxy-6-({1-[(1H-imidazol-4-yl)acetyl]azetidin-3-yl}oxy)benzoic acid

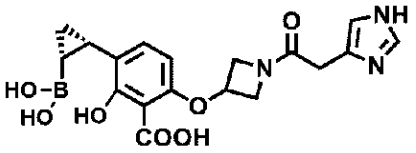
[Chemical Formula 1060]



,

3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxy-6-({1-[(1H-imidazol-4-yl)acetyl]azetidin-3-yl}oxy)benzoic acid

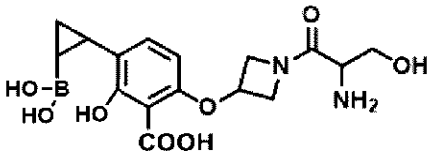
[Chemical Formula 1061]



,

3-[2-boronocyclopropyl]-2-hydroxy-6-[(1-serylazetidin-3-yl)oxy] benzoic acid

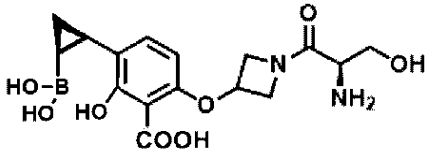
[Chemical Formula 1062]



,

3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxy-6-[(1-D-serylazetidin-3-yl)oxy]benzoic acid

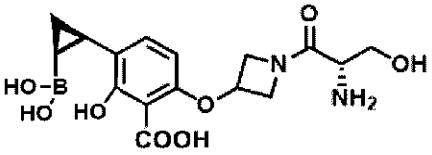
[Chemical Formula 1063]



,

3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxy-6-[(1-L-serylazetidin-3-yl)oxy]benzoic acid

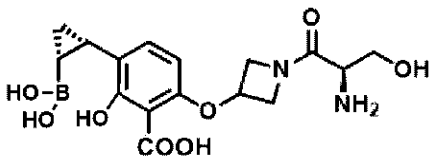
[Chemical Formula 1064]



,

3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxy-6-[(1-D-serylazetidin-3-yl)oxy]benzoic acid

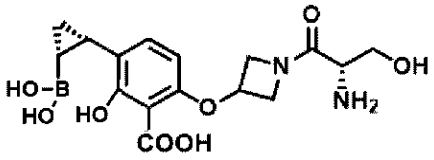
[Chemical Formula 1065]



,

3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxy-6-[(1-L-serylazetidin-3-yl)oxy]benzoic acid

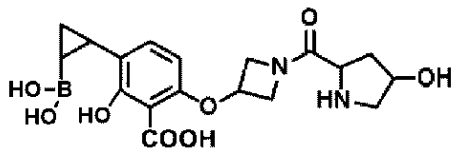
[Chemical Formula 1066]



,

3-[2-boronocyclopropyl]-2-hydroxy-6-({1-[4-hydroxy-L-prolyl] azetidine-3-yl}oxy)benzoic acid

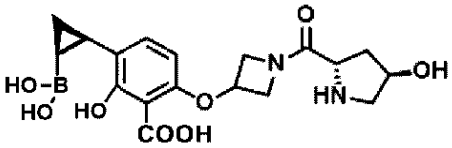
[Chemical Formula 1067]



,

3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxy-6-({1-[(4R)-4-hydroxy-L-prolyl]azetidin-3-yl}oxy)benzoic acid

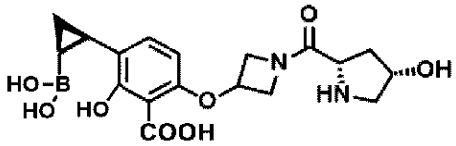
[Chemical Formula 1068]



,

3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxy-6-({1-[(4S)-4-hydroxy-L-prolyl]azetidin-3-yl}oxy)benzoic acid

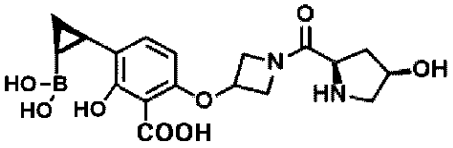
[Chemical Formula 1069]



,

3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxy-6-({1-[(4R)-4-hydroxy-D-prolyl]azetidin-3-yl}oxy)benzoic acid

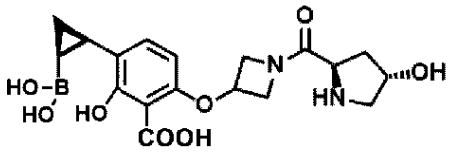
[Chemical Formula 1070]



,

3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxy-6-({1-[(4S)-4-hydroxy-D-prolyl]azetidin-3-yl}oxy)benzoic acid

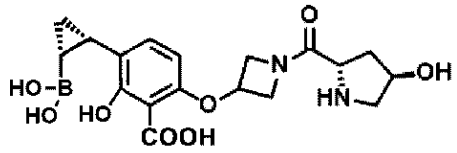
[Chemical Formula 1071]



,

3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxy-6-({1-[(4R)-4-hydroxy-L-prolyl]azetidin-3-yl}oxy)benzoic acid

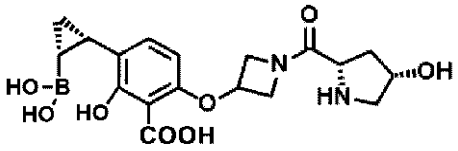
[Chemical Formula 1072]



,

3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxy-6-({1-[(4S)-4-hydroxy-L-prolyl]azetidin-3-yl}oxy)benzoic acid

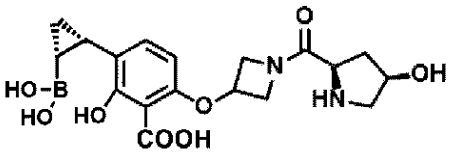
[Chemical Formula 1073]



,

3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxy-6-({1-[(4R)-4-hydroxy-D-prolyl]azetidin-3-yl}oxy)benzoic acid

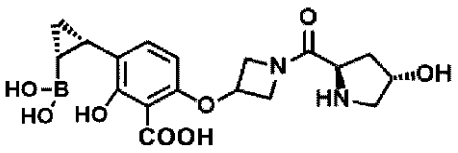
[Chemical Formula 1074]



,

3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxy-6-({1-[(4S)-4-hydroxy-D-prolyl]azetidin-3-yl}oxy)benzoic acid

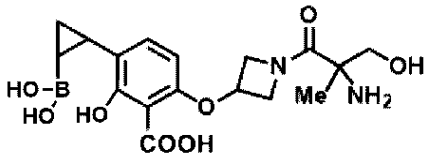
[Chemical Formula 1075]



,

3-[2-boronocyclopropyl]-2-hydroxy-6-{[1-(2-methyl-seryl)azetidin-3-yl]oxy}benzoic acid

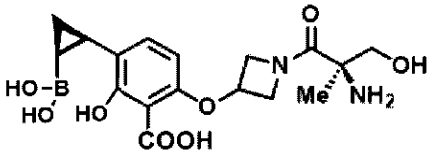
[Chemical Formula 1076]



,

3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxy-6-{[1-(2-methyl-D-seryl)azetidin-3-yl]oxy}benzoic acid

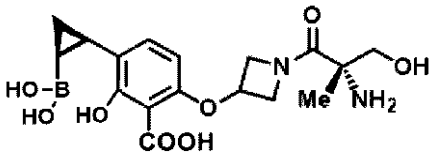
[Chemical Formula 1077]



,

3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxy-6-{[1-(2-methyl-L-seryl)azetidin-3-yl]oxy}benzoic acid

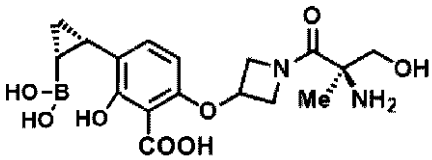
[Chemical Formula 1078]



,

3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxy-6-{[1-(2-methyl-D-seryl)azetidin-3-yl]oxy}benzoic acid

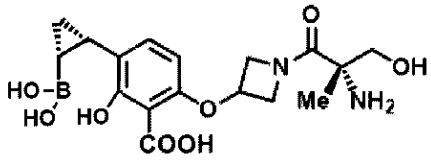
[Chemical Formula 1079]



,

3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxy-6-{[1-(2-methyl-L-seryl)azetidin-3-yl]oxy}benzoic acid

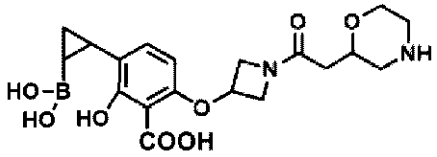
[Chemical Formula 1080]



,

3-[(2-boronocyclopropyl]-2-hydroxy-6-[(1-{[morpholin-2-yl]acetyl}azetidin-3-yl)oxy]benzoic acid

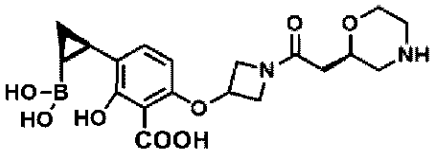
[Chemical Formula 1081]



,

3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxy-6-[(1-{[(2R)-morpholin-2-yl]acetyl}azetidin-3-yl)oxy]benzoic acid

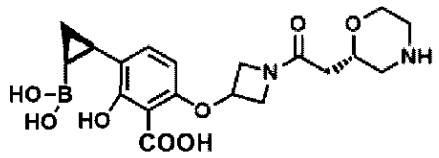
[Chemical Formula 1082]



,

3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxy-6-[(1-{[(2S)-morpholin-2-yl]acetyl}azetidin-3-yl)oxy]benzoic acid

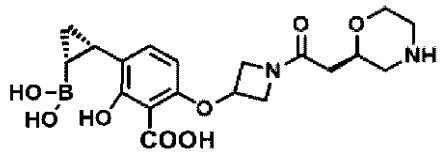
[Chemical Formula 1083]



,

3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxy-6-[(1-{[(2R)-morpholin-2-yl]acetyl}azetidin-3-yl)oxy]benzoic acid

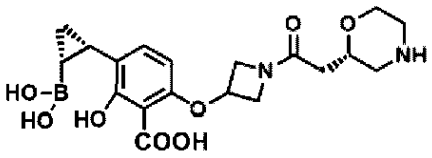
[Chemical Formula 1084]



,

3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxy-6-[(1-{[(2S)-morpholin-2-yl]acetyl}azetidin-3-yl)oxy]benzoic acid

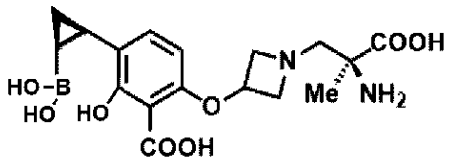
[Chemical Formula 1085]



,

6-({1-[(2S)-2-amino-2-carboxypropyl]azetidin-3-yl}oxy)-3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxybenzoic acid

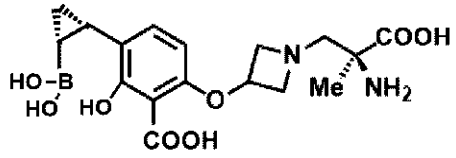
[Chemical Formula 1086]



,

6-({1-[(2S)-2-amino-2-carboxypropyl]azetidin-3-yl}oxy)-3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxybenzoic acid

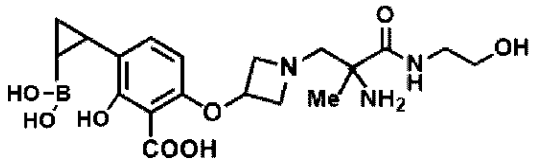
[Chemical Formula 1087]



,

6-[(1-{2-amino-3-[(2-hydroxyethyl)amino]-2-methyl-3-oxopropyl}azetidin-3-yl)oxy]-3-[2-boronocyclopropyl]-2-hydroxybenzoic acid

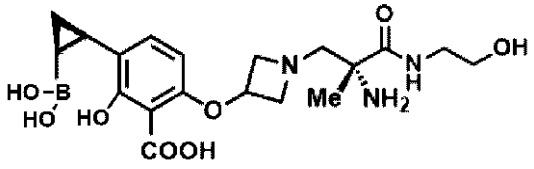
[Chemical Formula 1088]



,

6-[(1-{(2R)-2-amino-3-[(2-hydroxyethyl)amino]-2-methyl-3-oxopropyl}azetidin-3-yl)oxy]-3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxybenzoic acid

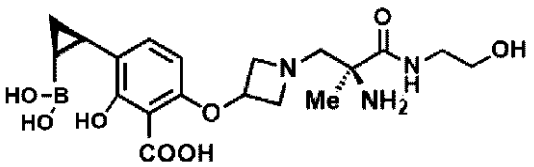
[Chemical Formula 1089]



,

6-[(1-{(2S)-2-amino-3-[(2-hydroxyethyl)amino]-2-methyl-3-oxopropyl}azetidin-3-yl)oxy]-3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxybenzoic acid

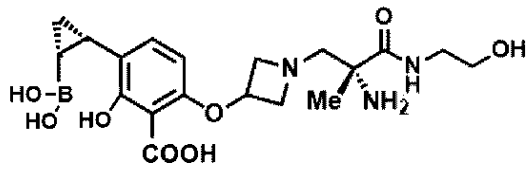
[Chemical Formula 1090]



,

6-[(1-{(2R)-2-amino-3-[(2-hydroxyethyl)amino]-2-methyl-3-oxo propyl}azetidin-3-yl)oxy]-3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxybenzoic acid

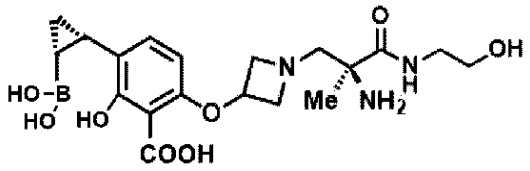
[Chemical Formula 1091]



,

6-[(1-{(2S)-2-amino-3-[(2-hydroxyethyl)amino]-2-methyl-3-oxo propyl}azetidin-3-yl)oxy]-3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxybenzoic acid

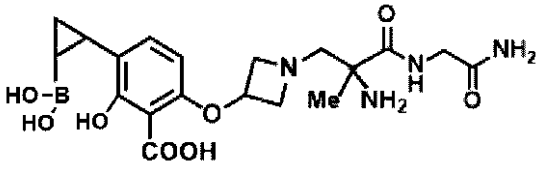
[Chemical Formula 1092]



,

6-[(1-{2-amino-3-[(2-amino-2-oxoethyl)amino]-2-methyl-3-oxo propyl}azetidin-3-yl)oxy]-3-[2-boronocyclopropyl]-2-hydroxybenzoic acid

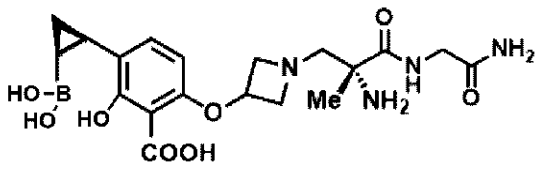
[Chemical Formula 1093]



,

6-[(1-{(2R)-2-amino-3-[(2-amino-2-oxoethyl)amino]-2-methyl-3-oxo propyl}azetidin-3-yl)oxy]-3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxybenzoic acid

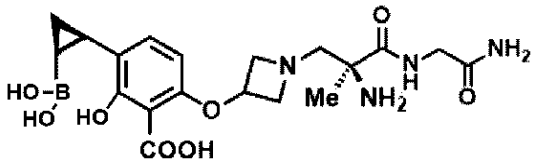
[Chemical Formula 1094]



,

6-[(1-{(2S)-2-amino-3-[(2-amino-2-oxoethyl)amino]-2-methyl-3-oxo propyl}azetidin-3-yl)oxy]-3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxybenzoic acid

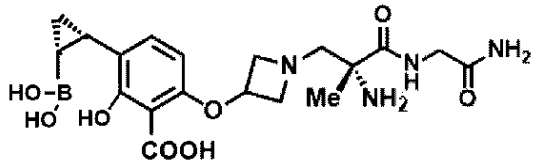
[Chemical Formula 1095]



,

6-[(1-{(2R)-2-amino-3-[(2-amino-2-oxoethyl)amino]-2-methyl-3-oxo propyl}azetidin-3-yl)oxy]-3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxybenzoic acid

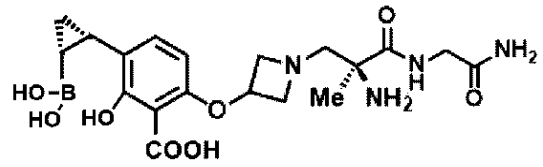
[Chemical Formula 1096]



,

6-[(1-{(2S)-2-amino-3-[(2-amino-2-oxoethyl)amino]-2-methyl-3-oxo propyl}azetidin-3-yl)oxy]-3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxybenzoic acid

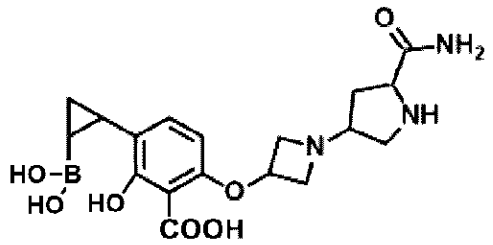
[Chemical Formula 1097]



,

3-[2-boronocyclopropyl]-6-({1-[(5-carbamoylpyrrolidin-3-yl] azetidin-3-yl}oxy)-2-hydroxybenzoic acid

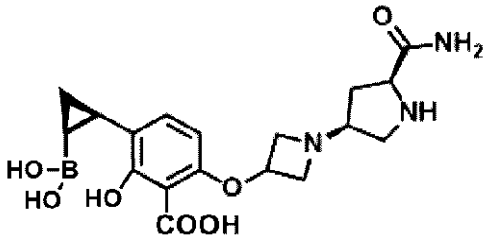
[Chemical Formula 1098]



,

3-[(1R,2S)-2-boronocyclopropyl]-6-({1-[(3S,5S)-5-carbamoyl pyrrolidin-3-yl]azetidin-3-yl}oxy)-2-hydroxybenzoic acid

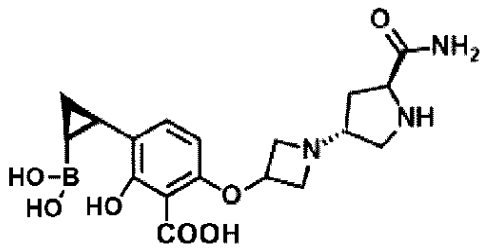
[Chemical Formula 1099]



,

3-[(1R,2S)-2-boronocyclopropyl]-6-({1-[(3R,5S)-5-carbamoyl pyrrolidine-3-yl]azetidin-3-yl}oxy)-2-hydroxybenzoic acid

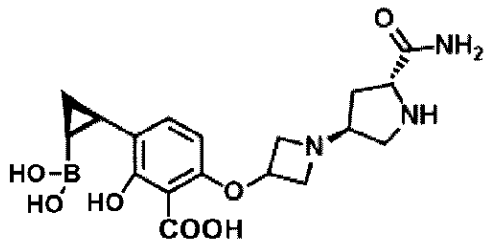
[Chemical Formula 1100]



,

3-[(1R,2S)-2-boronocyclopropyl]-6-({1-[(3S,5R)-5-carbamoyl pyrrolidin-3-yl]azetidin-3-yl}oxy)-2-hydroxybenzoic acid

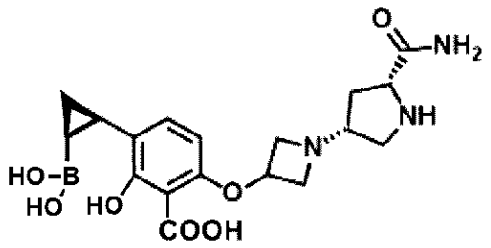
[Chemical Formula 1101]



,

3-[(1R,2S)-2-boronocyclopropyl]-6-({1-[(3R,5R)-5-carbamoyl pyrrolidin-3-yl]azetidin-3-yl}oxy)-2-hydroxybenzoic acid

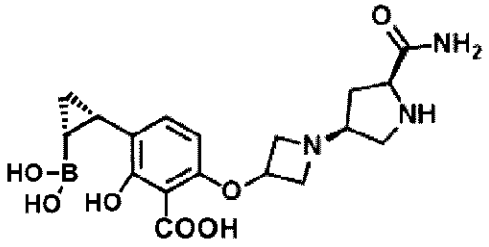
[Chemical Formula 1102]



,

3-[(1S,2R)-2-boronocyclopropyl]-6-({1-[(3S,5S)-5-carbamoyl pyrrolidin-3-yl]azetidin-3-yl}oxy)-2-hydroxybenzoic acid

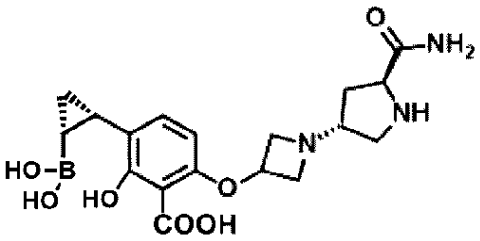
[Chemical Formula 1103]



,

3-[(1S,2R)-2-boronocyclopropyl]-6-({1-[(3R,5S)-5-carbamoyl pyrrolidin-3-yl]azetidin-3-yl}oxy)-2-hydroxybenzoic acid

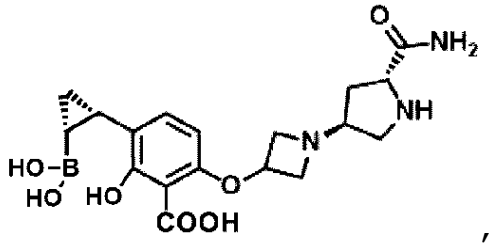
[Chemical Formula 1104]



,

3-[(1S,2R)-2-boronocyclopropyl]-6-({1-[(3S,5R)-5-carbamoyl pyrrolidin-3-yl]azetidin-3-yl}oxy)-2-hydroxybenzoic acid

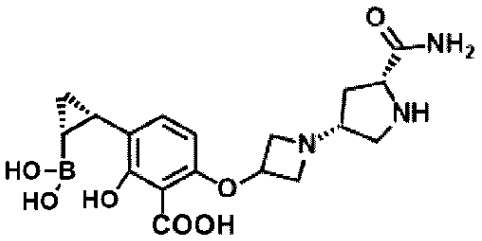
[Chemical Formula 1105]



,

3-[(1S,2R)-2-boronocyclopropyl]-6-({1-[(3R,5R)-5-carbamoyl pyrrolidin-3-yl]azetidin-3-yl}oxy)-2-hydroxybenzoic acid

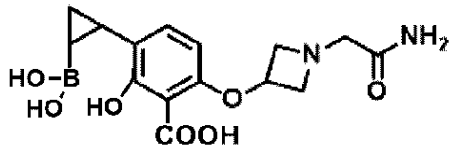
[Chemical Formula 1106]



,

6-{[1-(2-amino-2-oxoethyl)azetidin-3-yl]oxy}-3-[2-boronocyclo-propyl]-2-hydroxybenzoic acid

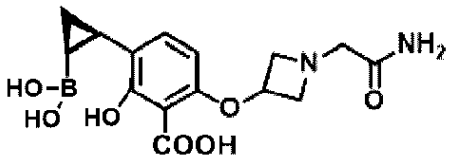
[Chemical Formula 1107]



,

6-{[1-(2-amino-2-oxoethyl)azetidin-3-yl]oxy}-3-[(1R,2S)-2-borono-cyclopropyl]-2-hydroxybenzoic acid

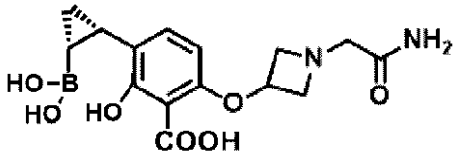
[Chemical Formula 1108]



,

6-{[1-(2-amino-2-oxoethyl)azetidin-3-yl]oxy}-3-[(1S,2R)-2-borono-cyclopropyl]-2-hydroxybenzoic acid

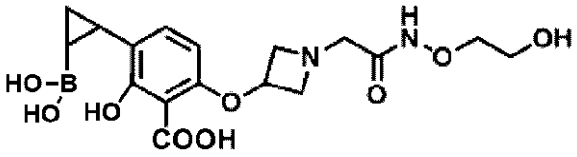
[Chemical Formula 1109]



,

3-[(2-boronocyclopropyl]-2-hydroxy-6-[(1-{2-[(2-hydroxyethoxy)amino]-2-oxoethyl}azetidin-3-yl)oxy]benzoic acid

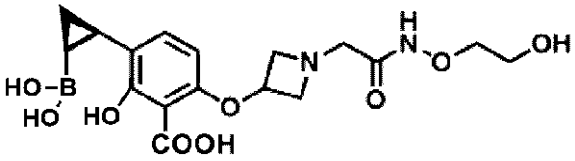
[Chemical Formula 1110]



,

3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxy-6-[(1-{2-[(2-hydroxy-ethoxy)amino]-2-oxoethyl}azetidin-3-yl)oxy]benzoic acid

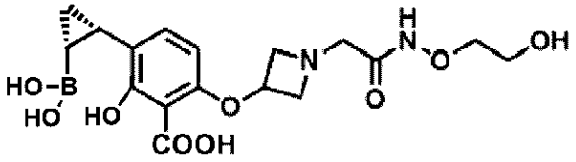
[Chemical Formula 1111]



,

3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxy-6-[(1-{2-[(2-hydroxy-ethoxy)amino]-2-oxoethyl}azetidin-3-yl)oxy]benzoic acid

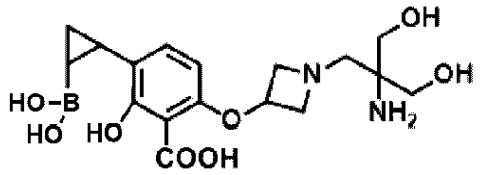
[Chemical Formula 1112]



,

6-({1-[2-amino-3-hydroxy-2-(hydroxymethyl)propyl]azetidin-3-yl}oxy)-3-[2-boronocyclopropyl]-2-hydroxybenzoic acid

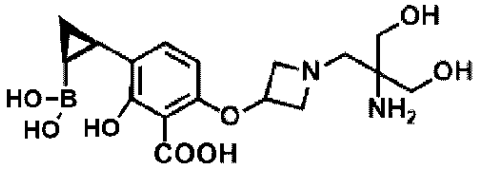
[Chemical Formula 1113]



,

6-({1-[2-amino-3-hydroxy-2-(hydroxymethyl)propyl]azetidin-3-yl}oxy)-3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxybenzoic acid

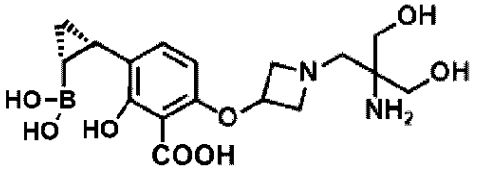
[Chemical Formula 1114]



,

6-({1-[2-amino-3-hydroxy-2-(hydroxymethyl)propyl]azetidin-3-yl}oxy)-3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxybenzoic acid

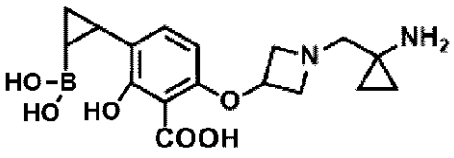
[Chemical Formula 1115]



,

6-({1-[(1-aminocyclopropyl)methyl]azetidin-3-yl}oxy)-3-[2-boronocyclopropyl]-2-hydroxybenzoic acid

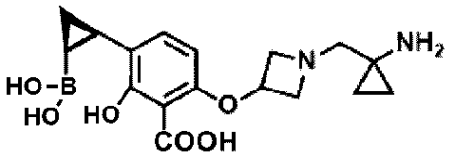
[Chemical Formula 1116]



,

6-({1-[(1-aminocyclopropyl)methyl]azetidin-3-yl}oxy)-3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxybenzoic acid

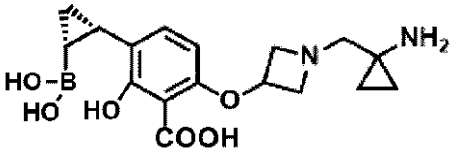
[Chemical Formula 1117]



,

6-({1-[(1-aminocyclopropyl)methyl]azetidin-3-yl}oxy)-3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxybenzoic acid

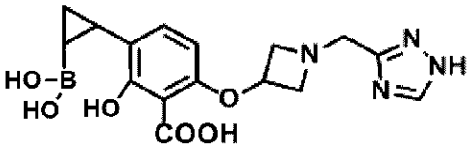
[Chemical Formula 1118]



,

3-[2-boronocyclopropyl]-2-hydroxy-6-({1-[(1H-1,2,4-triazol-3-yl)methyl]azetidin-3-yl}oxy)benzoic acid

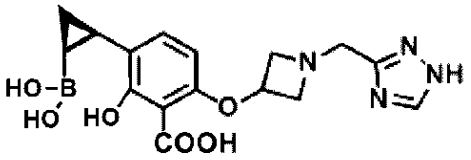
[Chemical Formula 1119]



,

3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxy-6-({1-[(1H-1,2,4-triazol-3-yl)methyl]azetidin-3-yl}oxy)benzoic acid

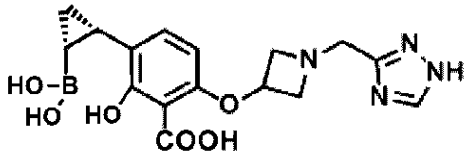
[Chemical Formula 1120]



,

3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxy-6-({1-[(1H-1,2,4-triazol-3-yl)methyl]azetidin-3-yl}oxy)benzoic acid

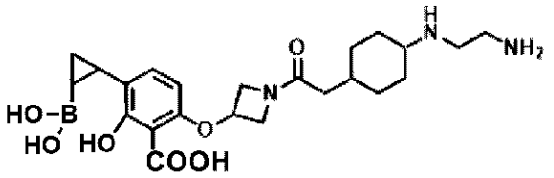
[Chemical Formula 1121]



,

6-{[1-({4-[(2-aminoethyl)amino]cyclohexyl}acetyl)azetidin-3-yl]oxy}-3-[2-boronocyclopropyl]-2-hydroxybenzoic acid

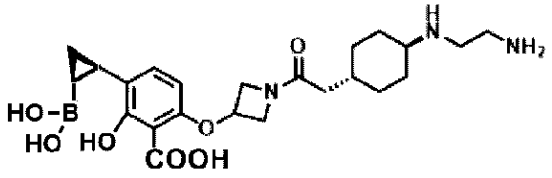
[Chemical Formula 1122]



,

6-{[1-({(1r,4r)-4-[(2-aminoethyl)amino]cyclohexyl}acetyl)azetidin-3-yl]oxy}-3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxybenzoic acid

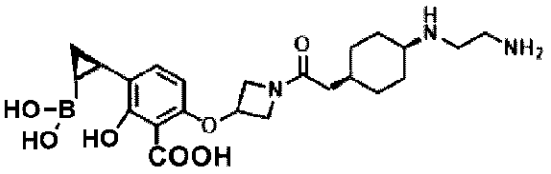
[Chemical Formula 1123]



,

6-{[1-({(1s,4r)-4-[(2-aminoethyl)amino]cyclohexyl}acetyl)azetidin-3-yl]oxy}-3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxybenzoic acid

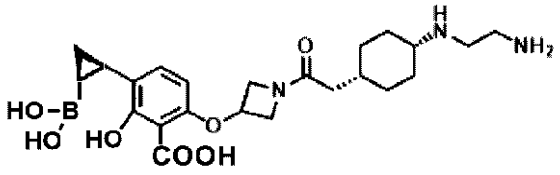
[Chemical Formula 1124]



,

6-{[1-({(1r,4s)-4-[(2-aminoethyl)amino]cyclohexyl}acetyl)azetidin-3-yl]oxy}-3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxybenzoic acid

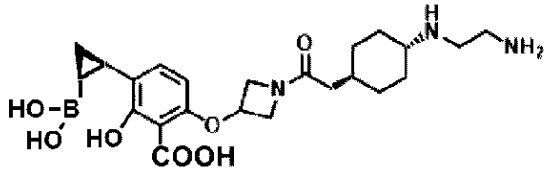
[Chemical Formula 1125]



,

6-{[1-({(1s,4s)-4-[(2-aminoethyl)amino]cyclohexyl}acetyl)azetidin-3-yl]oxy}-3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxybenzoic acid

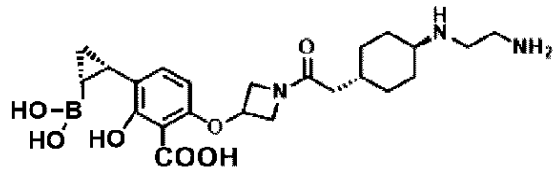
[Chemical Formula 1126]



,

6-{[1-({(1r,4r)-4-[(2-aminoethyl)amino]cyclohexyl}acetyl)azetidin-3-yl]oxy}-3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxybenzoic acid

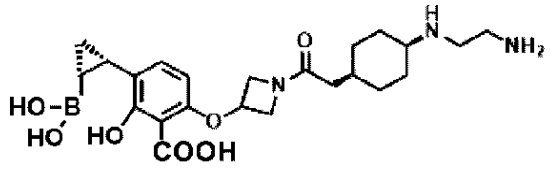
[Chemical Formula 1127]



,

6-{[1-({(1s,4r)-4-[(2-aminoethyl)amino]cyclohexyl}acetyl)azetidin-3-yl]oxy}-3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxybenzoic acid

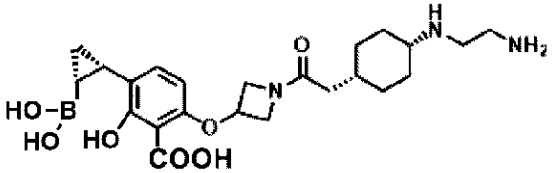
[Chemical Formula 1128]



,

6-{[1-({(1r,4s)-4-[(2-aminoethyl)amino]cyclohexyl}acetyl)azetidin-3-yl]oxy}-3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxybenzoic acid

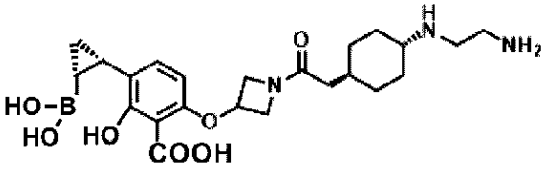
[Chemical Formula 1129]



,

6-{[1-({(1s,4s)-4-[(2-aminoethyl)amino]cyclohexyl}acetyl)azetidin-3-yl]oxy}-3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxybenzoic acid

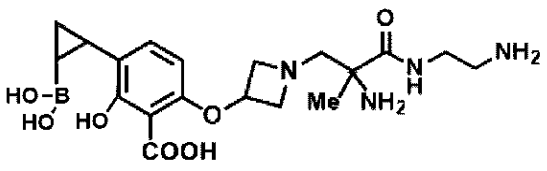
[Chemical Formula 1130]



,

6-[(1-{2-amino-3-[(2-aminoethyl)amino]-2-methyl-3-oxopropyl}azetidin-3-yl)oxy]-3-[2-boronocyclopropyl]-2-hydroxybenzoic acid

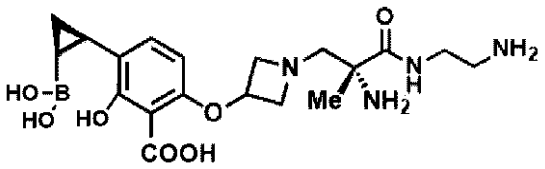
[Chemical Formula 1131]



,

6-[(1-{(2R)-2-amino-3-[(2-aminoethyl)amino]-2-methyl-3-oxopropyl}azetidin-3-yl)oxy]-3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxy-benzoic acid

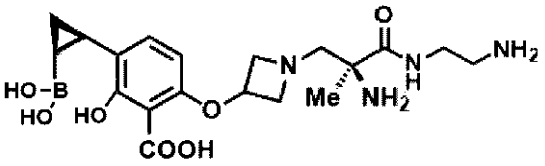
[Chemical Formula 1132]



,

6-[(1-{(2S)-2-amino-3-[(2-aminoethyl)amino]-2-methyl-3-oxopropyl}azetidin-3-yl)oxy]-3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxy-benzoic acid

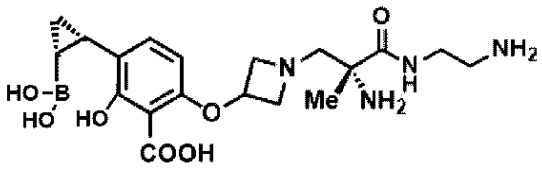
[Chemical Formula 1133]



,

6-[(1-{(2R)-2-amino-3-[(2-aminoethyl)amino]-2-methyl-3-oxopropyl}azetidin-3-yl)oxy]-3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxy-benzoic acid

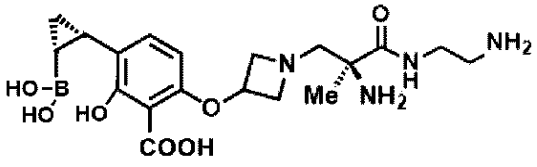
[Chemical Formula 1134]



,

6-[(1-{(2S)-2-amino-3-[(2-aminoethyl)amino]-2-methyl-3-oxopropyl}azetidin-3-yl)oxy]-3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxy-benzoic acid

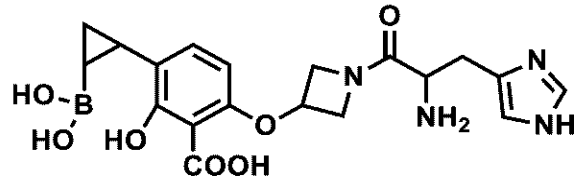
[Chemical Formula 1135]



,

3-(2-boronocyclopropyl)-6-[(1-histidylazetidin-3-yl)oxy]-2-hydroxy-benzoic acid

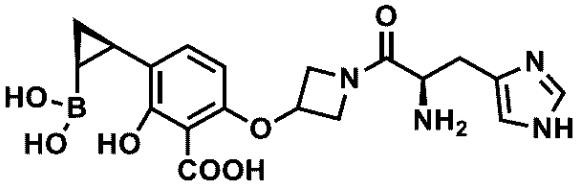
[Chemical Formula 1136]



,

3-[(1R,2S)-2-boronocyclopropyl]-6-[(1-D-histidylazetidin-3-yl)oxy]-2-hydroxybenzoic acid

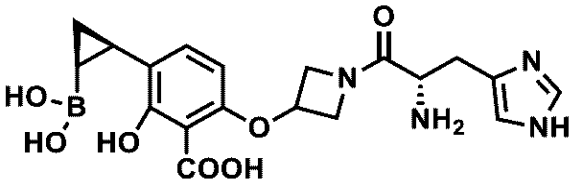
[Chemical Formula 1137]



,

3-[(1R,2S)-2-boronocyclopropyl]-6-[(1-L-histidylazetidin-3-yl)oxy]-2-hydroxybenzoic acid

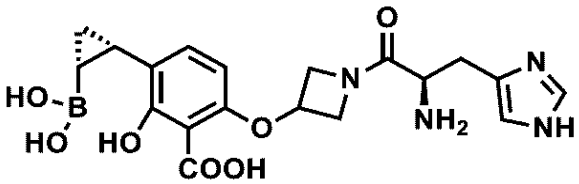
[Chemical Formula 1138]



,

3-[(1S,2R)-2-boronocyclopropyl]-6-[(1-D-histidylazetidin-3-yl)oxy]-2-hydroxybenzoic acid

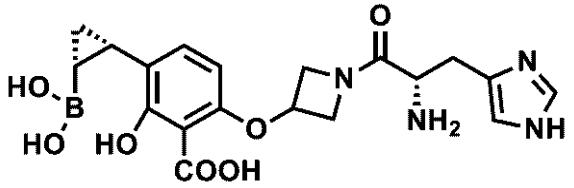
[Chemical Formula 1139]



,

3-[(1S,2R)-2-boronocyclopropyl]-6-[(1-L-histidylazetidin-3-yl)oxy]-2-hydroxybenzoic acid

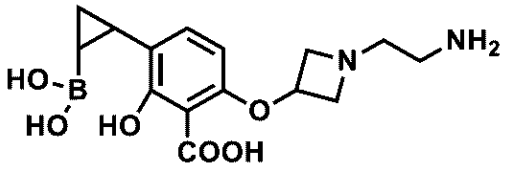
[Chemical Formula 1140]



,

6-{[1-(2-aminoethyl)azetidin-3-yl]oxy}-3-(2-boronocyclopropyl)-2-hydroxybenzoic acid

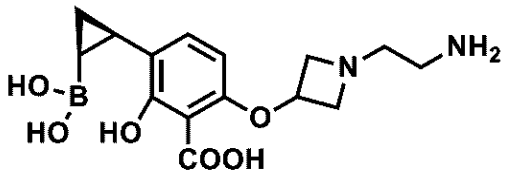
[Chemical Formula 1141]



,

6-{[1-(2-aminoethyl)azetidin-3-yl]oxy}-3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxybenzoic acid

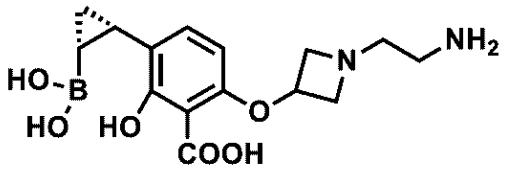
[Chemical Formula 1142]



,

6-{[1-(2-aminoethyl)azetidin-3-yl]oxy}-3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxybenzoic acid

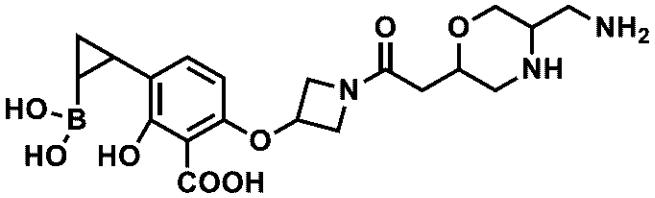
[Chemical Formula 1143]



,

6-[(1-{[5-(aminomethyl)morpholin-2-yl]acetyl}azetidin-3-yl)oxy]-3-(2-boronocyclopropyl)-2-hydroxybenzoic acid

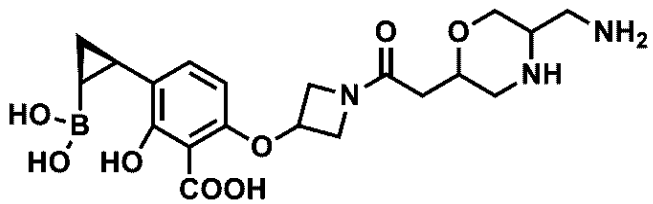
[Chemical Formula 1144]



,

6-[(1-{[5-(aminomethyl)morpholin-2-yl]acetyl}azetidin-3-yl)oxy]-3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxybenzoic acid

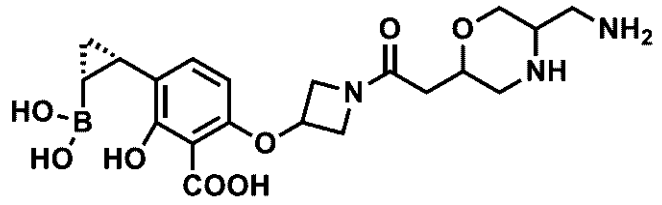
[Chemical Formula 1145]



,

6-[(1-{[5-(aminomethyl)morpholin-2-yl]acetyl}azetidin-3-yl)oxy]-3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxybenzoic acid

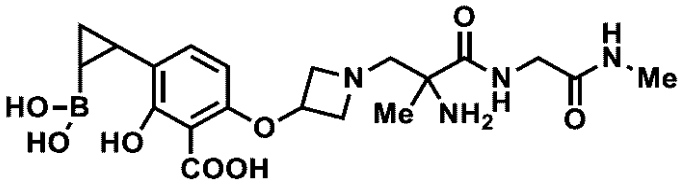
[Chemical Formula 1146]



,

6-({1-[2-amino-2-methyl-3-{[2-(methylamino)-2-oxoethyl]amino}-3-oxopropyl]azetidin-3-yl}oxy)-3-[2-boronocyclopropyl]-2-hydroxybenzoic acid

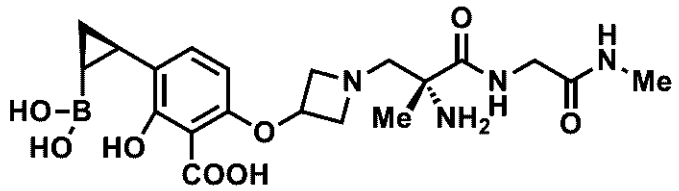
[Chemical Formula 1147]



,

6-({1-[(2R)-2-amino-2-methyl-3-{[2-(methylamino)-2-oxoethyl]amino}-3-oxopropyl]azetidin-3-yl}oxy)-3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxybenzoic acid

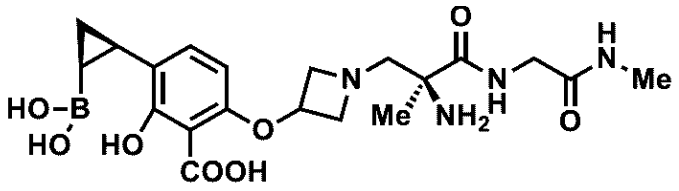
[Chemical Formula 1148]



,

6-({1-[(2S)-2-amino-2-methyl-3-{[2-(methylamino)-2-oxoethyl]amino}-3-oxopropyl]azetidin-3-yl}oxy)-3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxybenzoic acid

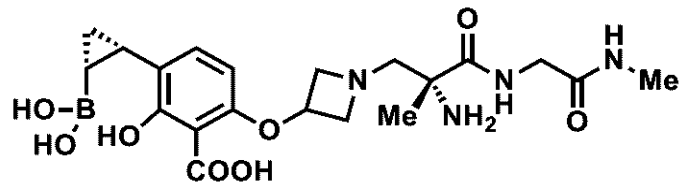
[Chemical Formula 1149]



,

6-({1-[(2R)-2-amino-2-methyl-3-{[2-(methylamino)-2-oxoethyl]amino}-3-oxopropyl]azetidin-3-yl}oxy)-3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxybenzoic acid

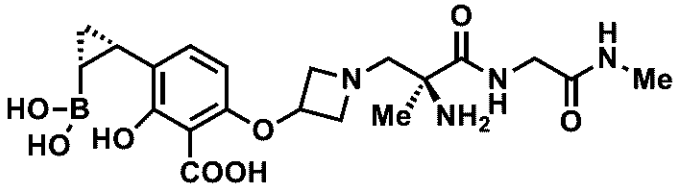
[Chemical Formula 1150]



,

6-({1-[(2S)-2-amino-2-methyl-3-{[2-(methylamino)-2-oxoethyl]amino}-3-oxopropyl]azetidin-3-yl}oxy)-3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxybenzoic acid

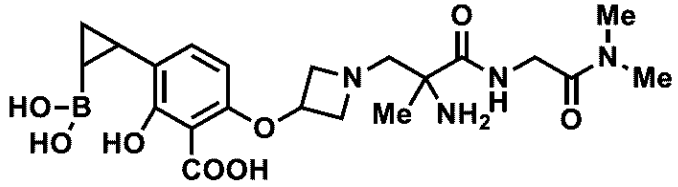
[Chemical Formula 1151]



,

6-({1-[2-amino-3-{[2-(dimethylamino)-2-oxoethyl]amino}-2-methyl-3-oxopropyl]azetidin-3-yl}oxy)-3-[2-boronocyclopropyl]-2-hydroxybenzoic acid

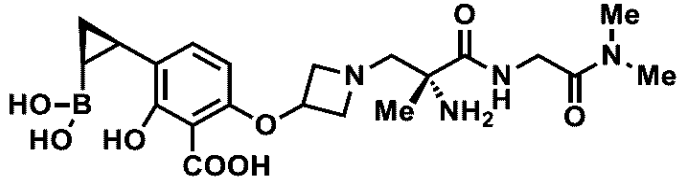
[Chemical Formula 1152]



,

6-({1-[(2R)-2-amino-3-{[2-(dimethylamino)-2-oxoethyl]amino}-2-methyl-3-oxopropyl]azetidin-3-yl}oxy)-3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxybenzoic acid

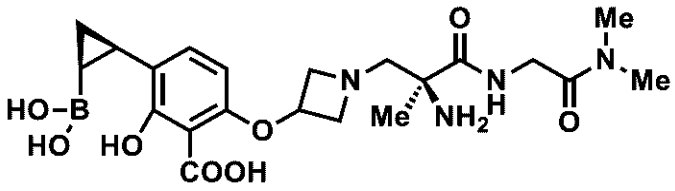
[Chemical Formula 1153]



,

6-({1-[(2S)-2-amino-3-{[2-(dimethylamino)-2-oxoethyl]amino}-2-methyl-3-oxopropyl]azetidin-3-yl}oxy)-3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxybenzoic acid

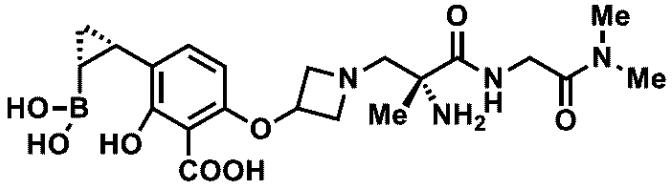
[Chemical Formula 1154]



,

6-({1-[(2R)-2-amino-3-{[2-(dimethylamino)-2-oxoethyl]amino}-2-methyl-3-oxopropyl]azetidin-3-yl}oxy)-3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxybenzoic acid

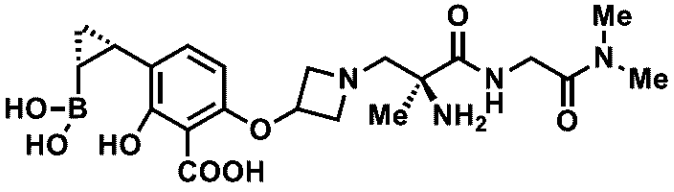
[Chemical Formula 1155]



,

6-({1-[(2S)-2-amino-3-{[2-(dimethylamino)-2-oxoethyl]amino}-2-methyl-3-oxopropyl]azetidin-3-yl}oxy)-3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxybenzoic acid

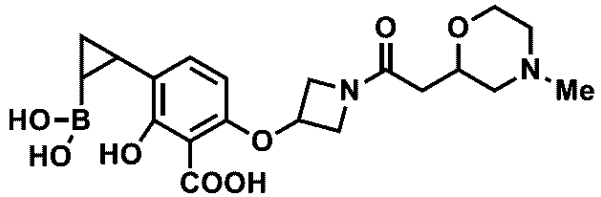
[Chemical Formula 1156]



,

3-[2-boronocyclopropyl]-2-hydroxy-6-[(1-{[4-methylmorpholin-2-yl]acetyl}azetidin-3-yl)oxy]benzoic acid

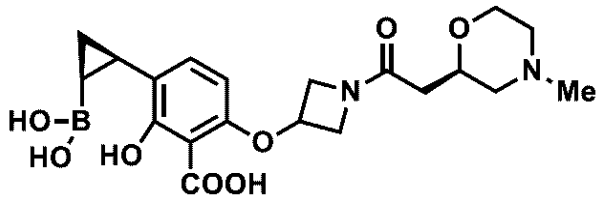
[Chemical Formula 1157]



,

3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxy-6-[(1-{[(2R)-4-methylmorpholin-2-yl]acetyl}azetidin-3-yl)oxy]benzoic acid

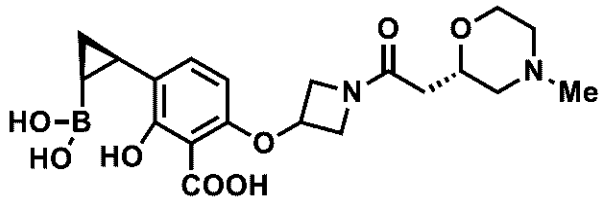
[Chemical Formula 1158]



,

3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxy-6-[(1-{[(2S)-4-methyl morpholin-2-yl]acetyl}azetidin-3-yl)oxy]benzoic acid

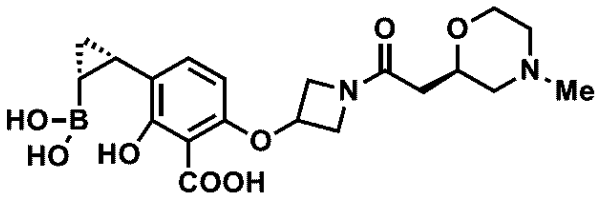
[Chemical Formula 1159]



,

3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxy-6-[(1-{[(2R)-4-methyl morpholin-2-yl]acetyl}azetidin-3-yl)oxy]benzoic acid

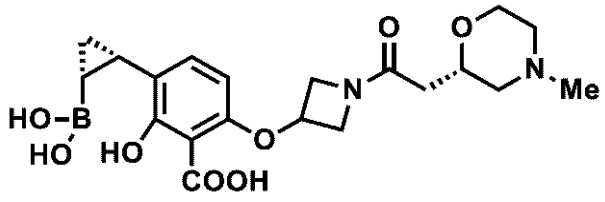
[Chemical Formula 1160]



,

3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxy-6-[(1-{[(2S)-4-methyl morpholin-2-yl]acetyl}azetidin-3-yl)oxy]benzoic acid

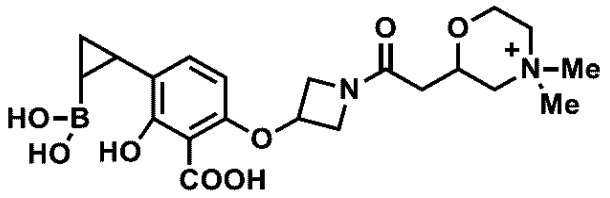
[Chemical Formula 1161]



,

3-[2-boronocyclopropyl]-6-[(1-{[4,4-dimethylmorpholin-4-ium-2-yl] acetyl}azetidin-3-yl)oxy]-2-hydroxybenzoate

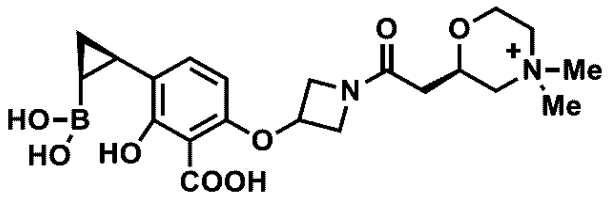
[Chemical Formula 1162]



,

3-[(1R,2S)-2-boronocyclopropyl]-6-[(1-{[(2R)-4,4-dimethyl morpholin-4-ium-2-yl]acetyl}azetidin-3-yl)oxy]-2-hydroxybenzoate

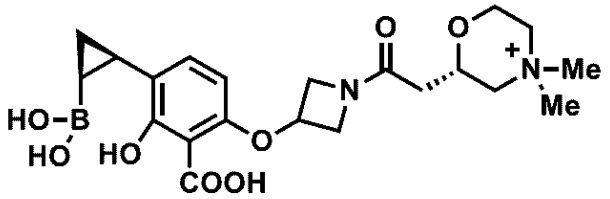
[Chemical Formula 1163]



,

3-[(1R,2S)-2-boronocyclopropyl]-6-[(1-{[(2S)-4,4-dimethylmorpholin-4-ium-2-yl]acetyl}azetidin-3-yl)oxy]-2-hydroxybenzoate

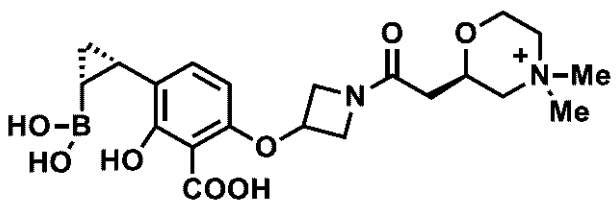
[Chemical Formula 1164]



,

3-[(1S,2R)-2-boronocyclopropyl]-6-[(1-{[(2R)-4,4-dimethylmorpholin-4-ium-2-yl]acetyl}azetidin-3-yl)oxy]-2-hydroxybenzoate

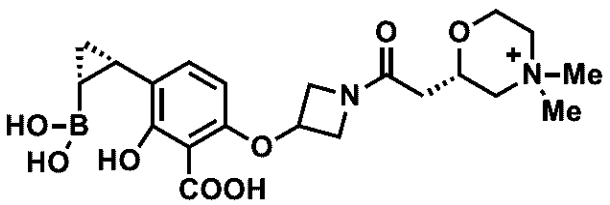
[Chemical Formula 1165]



,

3-[(1S,2R)-2-boronocyclopropyl]-6-[(1-{[(2S)-4,4-dimethylmorpholin-4-ium-2-yl]acetyl}azetidin-3-yl)oxy]-2-hydroxybenzoate

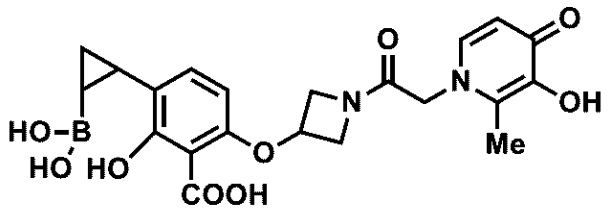
[Chemical Formula 1166]



,

3-(2-boronocyclopropyl)-2-hydroxy-6-({1-[(3-hydroxy-2-methyl-4-oxopyridin-1(4H)-yl)acetyl]azetidin-3-yl}oxy)benzoic acid

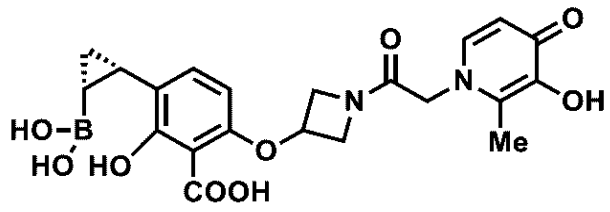
[Chemical Formula 1167]



,

3-[(1S,2R)-2-boronocyclopropyl]-2-hydroxy-6-({1-[(3-hydroxy-2-methyl-4-oxopyridin-1(4H)-yl)acetyl]azetidin-3-yl}oxy)benzoic acid

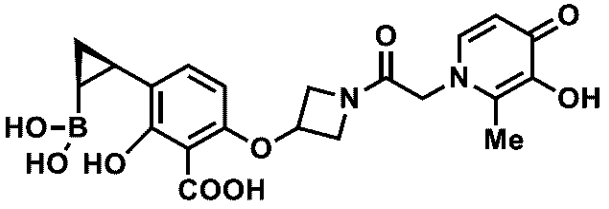
[Chemical Formula 1168]



, and

3-[(1R,2S)-2-boronocyclopropyl]-2-hydroxy-6-({1-[(3-hydroxy-2-methyl-4-oxopyridin-1(4H)-yl)acetyl]azetidin-3-yl}oxy)benzoic acid

[Chemical Formula 1169]



.

59. A medicament comprising the compound or the pharmaceutically acceptable salt thereof according to claim 1.

60. The medicament according to claim 58, which is a therapeutic drug or a prophylactic drug for a bacterial infection.

61. An agent for inhibiting β-lactamase, comprising the compound or the pharmaceutically acceptable salt thereof according to claim 1 as an active ingredient.

62. A pharmaceutical composition comprising the compound or the pharmaceutically acceptable salt thereof according claim 1 and a pharmaceutically acceptable carrier.

63. The pharmaceutical composition according to claim 62, further comprising an additional agent.

64. The pharmaceutical composition according to claim 63, wherein the additional agent is selected from the group consisting of an antibacterial agent, an antifungal agent, an antiviral agent, an anti-inflammatory agent, and an anti-allergic agent.

65. The pharmaceutical composition according to claim 63, wherein the additional agent is a β-lactam agent.

66. The pharmaceutical composition according to claim 64, wherein a β-lactam agent, which is the additional agent, is selected from the group consisting of amoxicillin, ampicillin (pivampicillin, hetacillin, bacampicillin, metampicillin, and talampicillin), epicillin, carbenicillin (carindacillin), ticarcillin, temocillin, azlocillin, piperacillin, mezlocillin, mecillinam (pivmecillinam), sulbenicillin, benzylpenicillin (G), clometocillin, benzathine benzylpenicillin, procaine benzylpenicillin, azidocillin, penamecillin, phenoxymethyl penicillin (V), propicillin, benzathine phenoxymethylpenicillin, phenethicillin, cloxacillin (dicloxacillin and flucloxacillin), oxacillin, methicillin, nafcillin, faropenem, biapenem, doripenem, ertapenem, imipenem, meropenem, panipenem, tomopenem, razupenem, cefazolin, cefacetrile, cefadroxil, cephalexin, cefaloglycin, cefalonium, cefaloridine, cephalothin, cephapirin, cefatrizine, cefazedone, cefazaflur, cefradine, cefroxadine, ceftezole, cefaclor, cefamandole, cefminox, cefonicide, ceforanide, cefotiam, cefprozil, cefbuperazone, cefuroxime, cefuzonam, cefoxitin, cefotetan, cefmetazole,

loracarbef, cefixime, ceftazidime, ceftriaxone, cefcapene, cefdaloxime, cefdinir, cefditoren, cefetamet, cefmenoxime, cefodizime, cefoperazone, cefotaxime, cefpimizole, cefpiramide, cefpodoxime, cefsulodin, cefteram, ceftibuten, ceftiolene, ceftizoxime, flomoxef, latamoxef, cefepime, cefozopran, cefpirome, cefquinome, ceftobiprole, ceftaroline, CXA-101, RWJ-54428, MC-04546, ME1036, BAL30072, SYN2416, ceftiofur, cefquinome, cefovecin, aztreonam, tigemonam, carumonam, RWJ-442831, RWJ-333441, and RWJ-333442.

67. The pharmaceutical composition according to claim 66, wherein the β-lactam agent is selected from ceftazidime, biapenem, doripenem, ertapenem, imipenem, meropenem, or panipenem.

68. The pharmaceutical composition according to claim 65, wherein the β-lactam agent is selected from aztreonam, tigemonam, BAL30072, SYN2416, or carumonam.

69. The pharmaceutical composition according to claim 63, characterized in that an additional agent is to be concomitantly administered.

70. The pharmaceutical composition according to claim 69, wherein the additional agent is selected from an antibacterial agent, an antifungal agent, an antiviral agent, an anti-inflammatory agent, or an anti-allergic agent.

71. The pharmaceutical composition according to claim 69, wherein the additional agent is a β-lactam agent.

72. The pharmaceutical composition according to claim 70, wherein a β-lactam agent, which is the additional agent, is selected from the group consisting of amoxicillin, ampicillin (pivampicillin,

hetacillin, bacampicillin, metampicillin, and talampicillin), epicillin, carbenicillin (carindacillin), ticarcillin, temocillin, azlocillin, piperacillin, mezlocillin, mecillinam (pivmecillinam), sulbenicillin, benzylpenicillin (G), clometocillin, benzathine benzylpenicillin, procaine benzylpenicillin, azidocillin, penamecillin, phenoxymethyl penicillin (V), propicillin, benzathine phenoxymethylpenicillin, phenethicillin, cloxacillin (dicloxacillin and flucloxacillin), oxacillin, methicillin, nafcillin, faropenem, biapenem, doripenem, ertapenem, imipenem, meropenem, panipenem, tomopenem, razupenem, cefazolin, cefacetrile, cefadroxil, cephalexin, cefaloglycin, cefalonium, cefaloridine, cephalothin, cephapirin, cefatrizine, cefazedone, cefazaflur, cefradine, cefroxadine, ceftezole, cefaclor, cefamandole, cefminox, cefonicide, ceforanide, cefotiam, cefprozil, cefbuperazone, cefuroxime, cefuzonam, cefoxitin, cefotetan, cefmetazole, loracarbef, cefixime, ceftazidime, ceftriaxone, cefcapene, cefdaloxime, cefdinir, cefditoren, cefetamet, cefmenoxime, cefodizime, cefoperazone, cefotaxime, cefpimizole, cefpiramide, cefpodoxime, cefsulodin, cefteram, ceftibuten, ceftiolene, ceftizoxime, flomoxef, latamoxef, cefepime, cefozopran, cefpirome, cefquinome, ceftobiprole, ceftaroline, CXA-101, RWJ-54428, MC-04546, ME1036, BAL30072, SYN2416, ceftiofur, cefquinome, cefovecin, aztreonam, tigemonam, carumonam, RWJ-442831, RWJ-333441, and RWJ-333442.

73. The pharmaceutical composition according to claim 71, wherein the β-lactam agent is selected from the group consisting of ceftazidime, biapenem, doripenem, ertapenem, imipenem, meropenem, and panipenem.

74. The pharmaceutical composition according to claim 71, wherein the β-lactam agent is selected from the group consisting of aztreonam, tigemonam, BAL30072, SYN2416, and carumonam.

75. The compound or the pharmaceutically acceptable salt thereof according to claim 1, wherein the bacterial infection is a bacterial infection in which a bacteria that can have a β-lactamase is involved.

76. The compound or the pharmaceutically acceptable salt thereof according to claim 75, wherein the bacterial infection is sepsis, febrile neutropenia, bacterial meningitis, bacterial endocarditis, otitis media, sinusitis, pneumonia, lung abscess, empyema, secondary infection of a chronic respiratory disease, pharyngolaryngitis, tonsillitis, osteomyelitis, arthritis, peritonitis, intraperitoneal abscess, cholecystitis, cholangitis, liver abscess, a deep skin infection, lymphangitis/lymphadenitis, secondary infection of trauma, burn injury, surgical wound, or the like, a urinary tract infection, a genital infection, an eye infection, or an odontogenic infection.

77. A medicament comprised of a combination of the compound or the pharmaceutically acceptable salt thereof according to claim 1 and at least one agent selected from the group consisting of therapeutic agents for sepsis, febrile neutropenia, bacterial meningitis, bacterial endocarditis, otitis media, sinusitis, pneumonia, lung abscess, empyema, secondary infection of a chronic respiratory disease, pharyngolaryngitis, tonsillitis, osteomyelitis, arthritis, peritonitis, intraperitoneal abscess, cholecystitis, cholangitis, liver abscess, a deep skin infection, lymphangitis/lymphadenitis, secondary infection of trauma, burn injury, surgical wound, or the like, a urinary tract infection, a genital infection, an eye infection, and an odontogenic infection.

78. A pharmaceutical composition comprising a β-lactam agent, wherein the pharmaceutical composition is to be administered with the compound or the pharmaceutically acceptable salt thereof.

according to claim 1.

79. A method for treating a bacterial infection, characterized in that a therapeutically effective amount of the compound or the pharmaceutically acceptable salt thereof according to claim 1 is to be administered to a patient in need thereof.

80. The method according to claim 79, wherein the bacterial infection is a bacterial infection in which a bacteria that can have a β-lactamase is involved.

81. The method according to claim 79, wherein the bacterial infection is sepsis, febrile neutropenia, bacterial meningitis, bacterial endocarditis, otitis media, sinusitis, pneumonia, lung abscess, empyema, secondary infection of a chronic respiratory disease, pharyngolaryngitis, tonsillitis, osteomyelitis, arthritis, peritonitis, intraperitoneal abscess, cholecystitis, cholangitis, liver abscess, a deep skin infection, lymphangitis/lymphadenitis, secondary infection of trauma, burn injury, surgical wound, or the like, a urinary tract infection, a genital infection, an eye infection, or an odontogenic infection.

82. The method according to claim 79, characterized in that an additional agent is to be concomitantly administered.