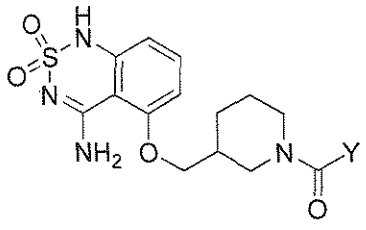
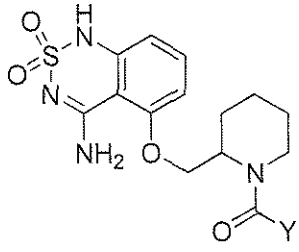
In another aspect, the present disclosure provides a compound having structural Formula (Ib) or Formula (Id):



(Ib), or a salt thereof, or



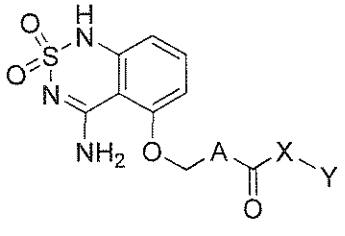
(Id),

or a salt or solvate thereof; wherein

Y is alkyl, substituted alkyl, carbocyclyl, substituted carbocyclyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, aralkyl, substituted aralkyl, heteroarylalkyl, or substituted heteroarylalkyl,

wherein the substituents are selected from the group consisting of -$\mathbf{R}^a$, halo, =O, -O$\mathbf{R}^b$, -S$\mathbf{R}^b$, =S, -N$\mathbf{R}^c\mathbf{R}^c$, =N$\mathbf{R}^b$, =N-O$\mathbf{R}^b$, trihalomethyl, -CF_3, -CN, -OCN, -SCN, -NO, -NO_2, =N_2, -N_3, -S(O)$_2\mathbf{R}^b$, -S(O)$_2$O$\mathbf{R}^b$, -OS(O)$_2\mathbf{R}^b$, -OS(O)$_2$O$\mathbf{R}^b$, -P(O)(O$\mathbf{R}^b$)(O$\mathbf{R}^b$), -C(O)$\mathbf{R}^b$, -C(S)$\mathbf{R}^b$, -C(N$\mathbf{R}^b$)R^b, -C(O)O$\mathbf{R}^b$, -C(S)O$\mathbf{R}^b$, -C(O)N$\mathbf{R}^c\mathbf{R}^c$, -C(N$\mathbf{R}^b$)N$\mathbf{R}^c\mathbf{R}^c$, -OC(O)$\mathbf{R}^b$, -OC(S)$\mathbf{R}^b$, -OC(O)O$\mathbf{R}^b$, -OC(S)O$\mathbf{R}^b$, -N$\mathbf{R}^b$C(O)$\mathbf{R}^b$, -N$\mathbf{R}^b$C(S)$\mathbf{R}^b$, -N$\mathbf{R}^b$C(O)O$\mathbf{R}^b$, -N$\mathbf{R}^b$C(S)O$\mathbf{R}^b$, -N$\mathbf{R}^b$C(O)N$\mathbf{R}^c\mathbf{R}^c$, -N$\mathbf{R}^b$C(N$\mathbf{R}^b$)$\mathbf{R}^b$ and -NR^{b}C(N$\mathbf{R}^b$)N$\mathbf{R}^c\mathbf{R}^c$, where $\mathbf{R}^a$ is selected from the group consisting of alkyl, cycloalkyl, cycloheteroalkyl, aryl, arylalkyl, heteroaryl and heteroarylalkyl; each $\mathbf{R}^b$ is independently hydrogen or $\mathbf{R}^a$; and each $\mathbf{R}^c$ is independently $\mathbf{R}^b$ or alternatively, the two $\mathbf{R}^c$s may be taken together with the nitrogen atom to which they are bonded form a 4-, 5-, 6- or 7-membered cycloheteroalkyl which may optionally include from 1 to 4 of the same or different additional heteroatoms selected from the group consisting of O (oxygen), N (nitrogen) and S (sulfur)

In another aspect, the present disclosure provides a compound having structural Formula (I):



(I),

or a salt or solvate thereof; wherein

A is an optionally substituted four to eight-membered azacyclic ring;

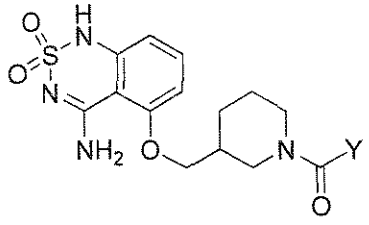
X is a covalent bond or –NR^1–;

R^1 is hydrogen or C1 to C6 alkyl; and

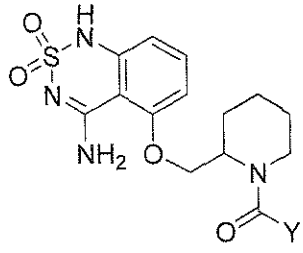
Y is carbocyclyl, substituted carbocyclyl, heterocyclyl, substituted heterocyclyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, aralkyl, substituted aralkyl, heteroarylalkyl, or substituted heteroarylalkyl,

wherein the substituents are selected from the group consisting of -$\mathbf{R}^a$, halo, =O, -O$\mathbf{R}^b$, -S$\mathbf{R}^b$, =S, -N$\mathbf{R}^c\mathbf{R}^c$, =N$\mathbf{R}^b$, =N-O$\mathbf{R}^b$, trihalomethyl, -CF_3, -CN, -OCN, -SCN, -C(O)$\mathbf{R}^b$, -C(S)$\mathbf{R}^b$, -C(N$\mathbf{R}^b$)$\mathbf{R}^b$, -C(O)O$\mathbf{R}^b$, -C(S)O$\mathbf{R}^b$, -C(O)N$\mathbf{R}^c\mathbf{R}^c$, -C(N$\mathbf{R}^b$)N$\mathbf{R}^c\mathbf{R}^c$, -OC(O)$\mathbf{R}^b$, -OC(S)$\mathbf{R}^b$, -OC(O)O$\mathbf{R}^b$, -OC(S)O$\mathbf{R}^b$, -N$\mathbf{R}^b$C(O)$\mathbf{R}^b$, -N$\mathbf{R}^b$C(S)$\mathbf{R}^b$, -N$\mathbf{R}^b$C(O)O$\mathbf{R}^b$, -N$\mathbf{R}^b$C(S)O$\mathbf{R}^b$, -N$\mathbf{R}^b$C(O)N$\mathbf{R}^c\mathbf{R}^c$, -N$\mathbf{R}^b$C(N$\mathbf{R}^b$)$\mathbf{R}^b$ and -N$\mathbf{R}^b$C(N$\mathbf{R}^b$)N$\mathbf{R}^c\mathbf{R}^c$, where $\mathbf{R}^a$ is selected from the group consisting of alkyl, cycloalkyl, cycloheteroalkyl, aryl, arylalkyl, heteroaryl and heteroarylalkyl; each $\mathbf{R}^b$ is independently hydrogen or $\mathbf{R}^a$; and each $\mathbf{R}^c$ is independently $\mathbf{R}^b$ or alternatively, the two $\mathbf{R}^c$s may be taken together with the nitrogen atom to which they are bonded form a 4-, 5-, 6- or 7-membered cycloheteroalkyl which may optionally include from 1 to 4 of the same or different additional heteroatoms selected from the group consisting of O (oxygen), N (nitrogen) and S (sulfur).

In another aspect, the present disclosure provides a compound having structural Formula (Ib) or Formula (Id):



(Ib), or a salt thereof, or



(Id),

or a salt or solvate thereof; wherein

Y is alkyl, substituted alkyl, carbocyclyl, substituted carbocyclyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, aralkyl, substituted aralkyl, heteroarylalkyl, or substituted heteroarylalkyl,

wherein the substituents are selected from the group consisting of -$\mathbf{R}^a$, halo, =O, -O$\mathbf{R}^b$, -S$\mathbf{R}^b$, =S, -N$\mathbf{R}^c\mathbf{R}^c$, =N$\mathbf{R}^b$, =N-O$\mathbf{R}^b$, trihalomethyl, -CF_3, -CN, -OCN, -SCN, -C(O)$\mathbf{R}^b$, -C(S)$\mathbf{R}^b$, -C(N$\mathbf{R}^b$)R^b, -C(O)O$\mathbf{R}^b$, -C(S)O$\mathbf{R}^b$, -C(O)N$\mathbf{R}^c\mathbf{R}^c$, -C(N$\mathbf{R}^b$)N$\mathbf{R}^c\mathbf{R}^c$, -OC(O)$\mathbf{R}^b$, -OC(S)$\mathbf{R}^b$, -OC(O)O$\mathbf{R}^b$, -OC(S)O$\mathbf{R}^b$, -N$\mathbf{R}^b$C(O)$\mathbf{R}^b$, -N$\mathbf{R}^b$C(S)$\mathbf{R}^b$, -N$\mathbf{R}^b$C(O)O$\mathbf{R}^b$, -N$\mathbf{R}^b$C(S)O$\mathbf{R}^b$, -N$\mathbf{R}^b$C(O)N$\mathbf{R}^c\mathbf{R}^c$, -N$\mathbf{R}^b$C(N$\mathbf{R}^b$)$\mathbf{R}^b$ and -NR^bC(N$\mathbf{R}^b$)N$\mathbf{R}^c\mathbf{R}^c$, where $\mathbf{R}^a$ is selected from the group consisting of alkyl, cycloalkyl, cycloheteroalkyl, aryl, arylalkyl, heteroaryl and heteroarylalkyl; each $\mathbf{R}^b$ is independently hydrogen or $\mathbf{R}^a$; and each $\mathbf{R}^c$ is independently $\mathbf{R}^b$ or alternatively, the two $\mathbf{R}^c$s may be taken together with the nitrogen atom to which they are bonded form a 4-, 5-, 6- or 7-membered cycloheteroalkyl which may

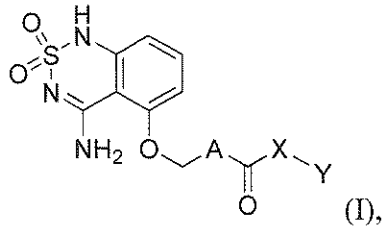
optionally include from 1 to 4 of the same or different additional heteroatoms selected from the group consisting of O (oxygen), N (nitrogen) and S (sulfur).

DETAILED DESCRIPTION OF THE INVENTION

These and other embodiments, advantages, and features of the present invention are provided in the sections below. Unless defined otherwise, all technical and scientific terms

CLAIMS

1. A compound having structural Formula (I):



(I),

or a salt or solvate thereof; wherein

A is an optionally substituted four to eight-membered azacyclic ring;

X is a covalent bond or $-NR^1-$;

R^1 is hydrogen or C1 to C6 alkyl; and

Y is carbocyclyl, substituted carbocyclyl, heterocyclyl, substituted heterocyclyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, aralkyl, substituted aralkyl, heteroarylalkyl, or substituted heteroarylalkyl,

wherein the substituents are selected from the group consisting of $-\mathbf{R}^a$, halo, =O, $-O\mathbf{R}^b$, $-S\mathbf{R}^b$, =S, $-N\mathbf{R}^c\mathbf{R}^c$, $=N\mathbf{R}^b$, $=N-O\mathbf{R}^b$, trihalomethyl, $-CF_3$, -CN, -OCN, -SCN, $-C(O)\mathbf{R}^b$, $-C(S)\mathbf{R}^b$, $-C(N\mathbf{R}^b)\mathbf{R}^b$, $-C(O)O\mathbf{R}^b$, $-C(S)O\mathbf{R}^b$, $-C(O)N\mathbf{R}^c\mathbf{R}^c$, $-C(N\mathbf{R}^b)N\mathbf{R}^c\mathbf{R}^c$, $-OC(O)\mathbf{R}^b$, $-OC(S)\mathbf{R}^b$, $-OC(O)O\mathbf{R}^b$, $-OC(S)O\mathbf{R}^b$, $-N\mathbf{R}^bC(O)\mathbf{R}^b$, $-N\mathbf{R}^bC(S)\mathbf{R}^b$, $-N\mathbf{R}^bC(O)O\mathbf{R}^b$, $-N\mathbf{R}^bC(S)O\mathbf{R}^b$, $-N\mathbf{R}^bC(O)N\mathbf{R}^c\mathbf{R}^c$, $-N\mathbf{R}^bC(N\mathbf{R}^b)\mathbf{R}^b$ and $-N\mathbf{R}^bC(N\mathbf{R}^b)N\mathbf{R}^c\mathbf{R}^c$, where $\mathbf{R}^a$ is selected from the group consisting of alkyl, cycloalkyl, cycloheteroalkyl, aryl, arylalkyl, heteroaryl and heteroarylalkyl; each $\mathbf{R}^b$ is independently hydrogen or $\mathbf{R}^a$; and each $\mathbf{R}^c$ is independently $\mathbf{R}^b$ or alternatively, the two $\mathbf{R}^c$s may be taken together with the nitrogen atom to which they are bonded form a 4-, 5-, 6- or 7-membered cycloheteroalkyl which may optionally include from 1 to 4 of the same or different additional heteroatoms selected from the group consisting of O (oxygen), N (nitrogen) and S (sulfur).

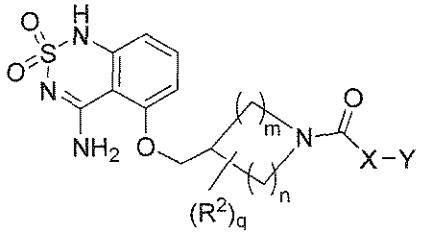
2. The compound of any one of claims 1, wherein X is NH.

3. The compound of any one of claims 1, wherein X is a covalent bond.

4. The compound of claim 1, wherein A is an optionally substituted five to seven-membered azacyclic ring.

5. The compound of claim 1, wherein A is an optionally substituted piperidine.

6. The compound of claim 1, which is represented by structural Formula (Ia):



(Ia),

or a salt or solvate thereof;

wherein,

m is 1, 2, 3, 4, 5, or 6;

n is 0, 1, 2, or 3; with the proviso that m+n is more than 1 and less than 7;

q is 0, 1, 2, 3, 4, 5, or 6; with the proviso that q is less than m+n;

X is a covalent bond or $-NR^1-$;

R^1 is hydrogen or C1 to C6 alkyl;

Y is carbocyclyl, substituted carbocyclyl, heterocyclyl, substituted heterocyclyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, aralkyl, substituted aralkyl, heteroarylalkyl, or substituted heteroarylalkyl; and

each R^2 is independently selected from the group consisting of alkyl, halo, and hydroxyl.

7. The compound of any one of claim 6, wherein X is NH.

8. The compound of any one of claim 6, wherein X is a covalent bond.

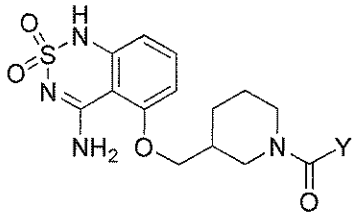
9. The compound of claim 6, wherein m is 1, 2, 3, or 4; and n is 0, 1, or 2.

10. The compound of claim 6, wherein q is 1, 2, or 3.

11. The compound of claim 6, wherein q is 0.

12. The compound of claim 9 or 11, wherein m is 4, and n is 0; or m is 3, and n is 1; or m and n are both 2.

13. The compound of claim 6 or 12, which is represented by structural Formula (Ib):



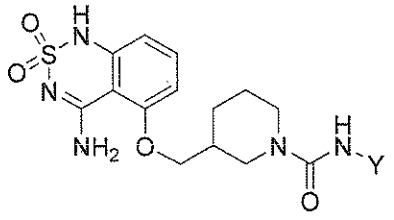
(Ib),

or a salt or solvate thereof;

wherein,

Y is carbocyclyl, substituted carbocyclyl, heterocyclyl, substituted heterocyclyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, aralkyl, substituted aralkyl, heteroarylalkyl, or substituted heteroarylalkyl.

14. The compound of claim 6 or 12, which is represented by structural Formula (Ic):



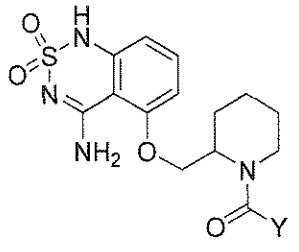
(Ic),

or a salt or solvate thereof;

wherein,

Y is carbocyclyl, substituted carbocyclyl, heterocyclyl, substituted heterocyclyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, aralkyl, substituted aralkyl, heteroarylalkyl, or substituted heteroarylalkyl.

15. The compound of claim 6 or 12, which is represented by structural Formula (Id):



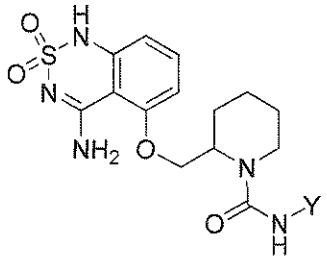
(Id),

or a salt or solvate thereof;

wherein,

Y is carbocyclyl, substituted carbocyclyl, heterocyclyl, substituted heterocyclyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, aralkyl, substituted aralkyl, heteroarylalkyl, or substituted heteroarylalkyl.

16. The compound of claim 6 or 12, which is represented by structural Formula (Ie):



(Ie),

or a salt or solvate thereof;

wherein,

Y is carbocyclyl, substituted carbocyclyl, heterocyclyl, substituted heterocyclyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, aralkyl, substituted aralkyl, heteroarylalkyl, or substituted heteroarylalkyl.

17. The compound of claim 13, wherein Y is carbocyclyl, substituted carbocyclyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, aralkyl, substituted aralkyl, heteroarylalkyl, or substituted heteroarylalkyl.

18. The compound of claim 13, wherein Y is a three to ten-membered carbocyclyl, substituted three to ten-membered carbocyclyl, three to ten-membered heterocyclyl, or substituted three to ten-membered heterocyclyl.

19. The compound of claim 13, wherein Y is a six to fifteen-membered aryl, substituted six to fifteen-membered aryl, five to ten-membered heteroaryl, or substituted five to ten-membered heteroaryl.

20. The compound of claim 13, wherein Y is –(C1 to C3 alkylene)–aryl or –(C1 to C3 alkylene)–substituted aryl.

21. The compound of claim 13, wherein Y is –(C1 to C3 alkylene)–heteroaryl or –(C1 to C3 alkylene)–substituted heteroaryl.

22. The compound of claim 14 or 16, wherein Y is a five or six-membered heteroaryl, substituted five or six-membered heteroaryl, –(C1 to C3 alkylene)–(five or six-membered heteroaryl), or –(C1 to C3 alkylene)–(substituted five or six-membered heteroaryl).

23. The compound of claim 22, wherein Y is pyrrole, pyridine, pyrimidine, pyridazine, or pyrazine, each of which is optionally substituted.

24. The compound of claim 13 or 15, wherein Y is a three to seven-membered cycloalkyl, or substituted three to seven-membered cycloalkyl, five to seven-membered heterocyclyl, or substituted five to seven-membered heterocyclyl.

25. The compound of claim 24, wherein Y is cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, or cycloheptyl, each of which is optionally substituted; or Y is tetrahydrofuran or tetrahydropyran, each of which is optionally substituted.

26. The compound of claim 13 or 15, wherein Y is phenyl or substituted phenyl.

27. The compound of claim 13 or 15, wherein Y is an optionally substituted five or six-membered monocyclic heteroaryl, or an optionally substituted ten to twelve-membered bicyclic heteroaryl.

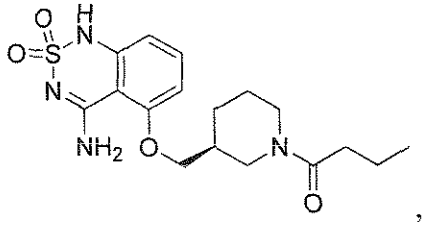
28. The compound of claim 27, wherein Y is selected from the group consisting of pyrrole, pyridine, pyrimidine, pyridazine, pyrazine, pyridine N-oxide, quinoline, imidazopyridine, and pyrazolopyridine, each of which is optionally substituted.

29. The compound of claim 13 or 15, wherein Y is $-CH_2-$phenyl or $-C(CH_3)_2-$substituted phenyl.

30. The compound of claim 13 or 15, wherein Y is $-CH_2-$heteroaryl or $-C(CH_3)_2-$substituted heteroaryl.

31. The compound of claim 28, wherein Y is selected from the group consisting of pyrrole, pyridine, pyrimidine, pyridazine, and pyrazine, each of which is substituted.

32. A compound selected from the group consisting of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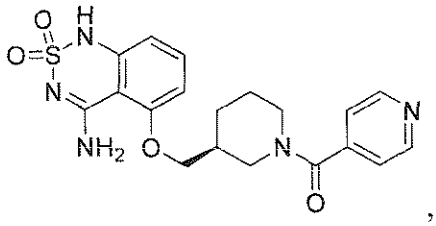
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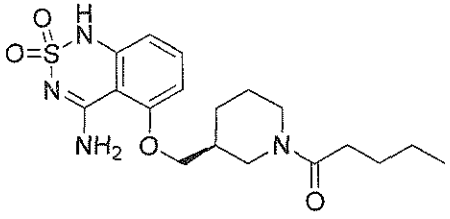
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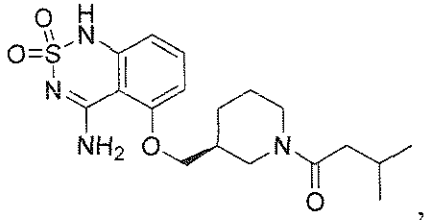
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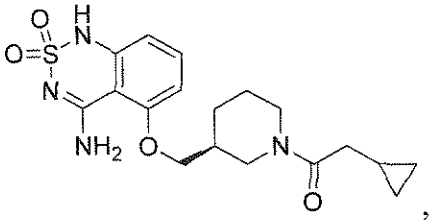
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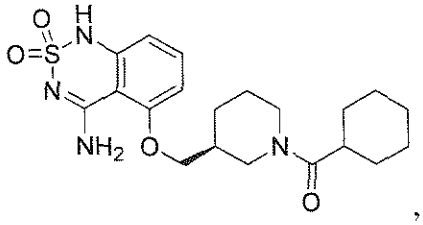
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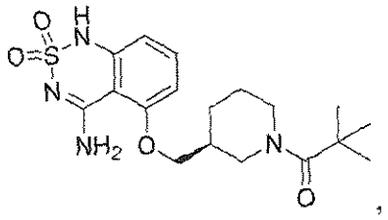
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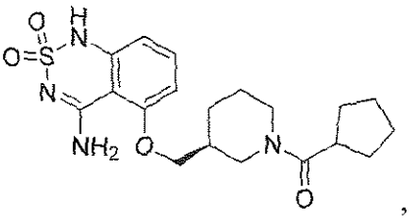
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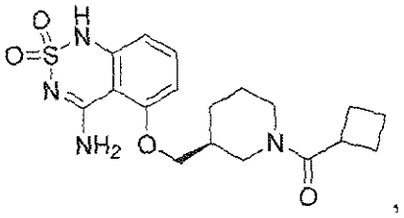
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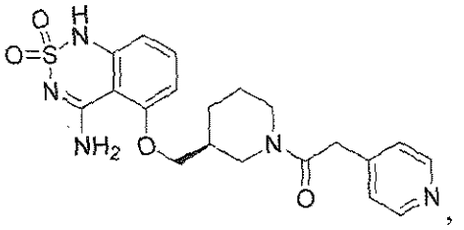
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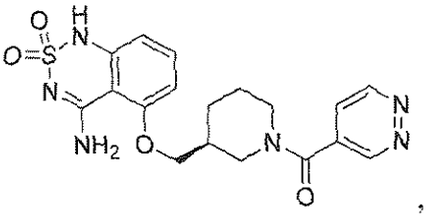
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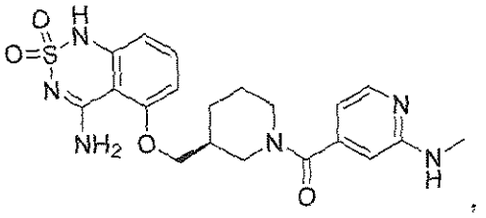
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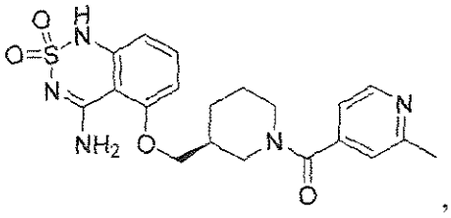
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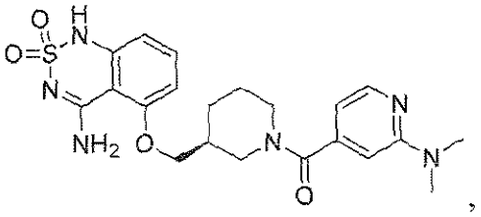
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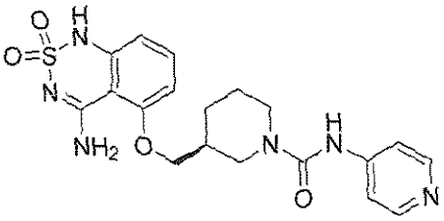
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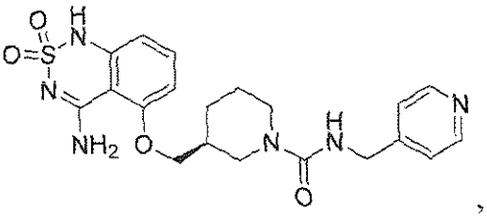
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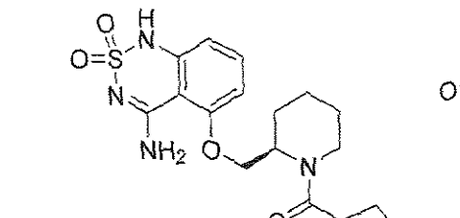
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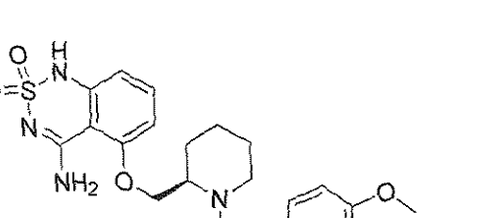
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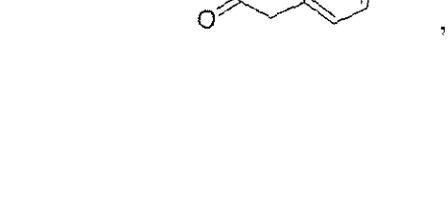
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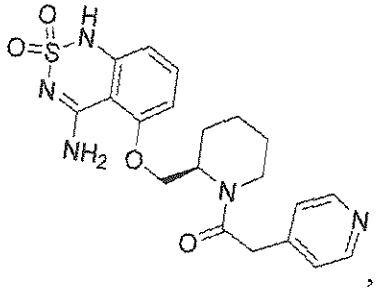

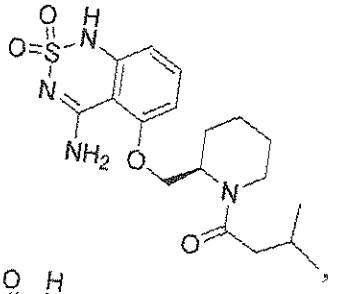

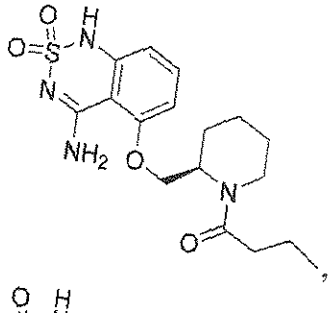

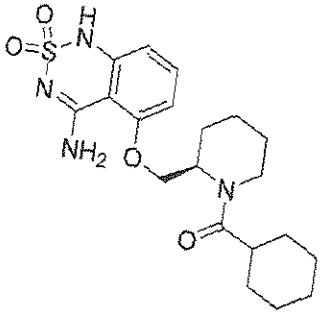

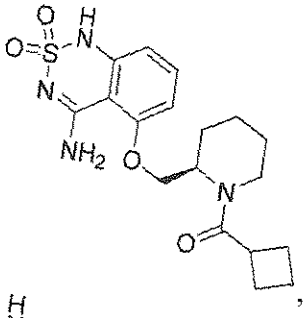

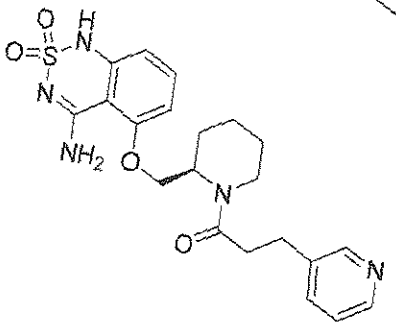

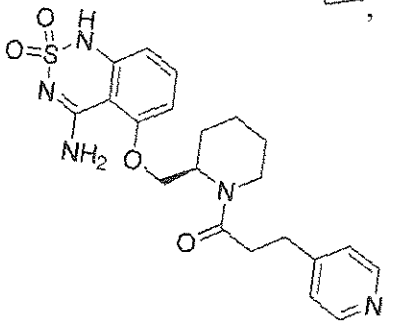

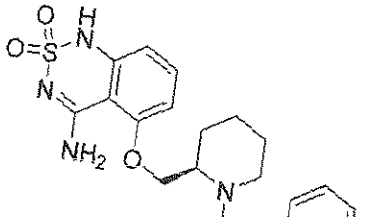

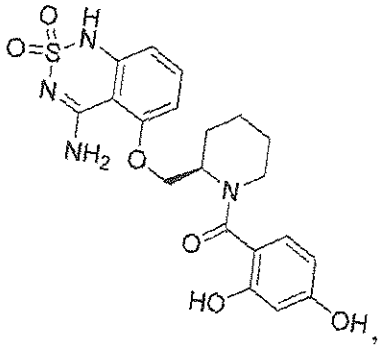

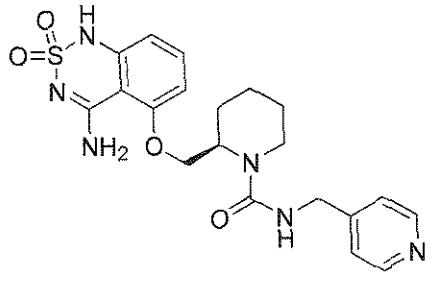
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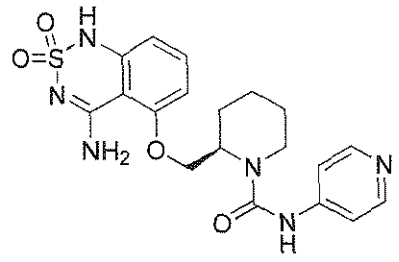
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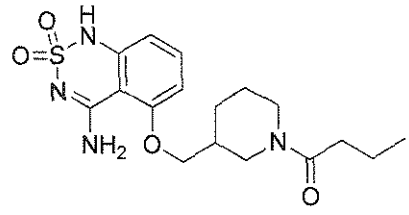
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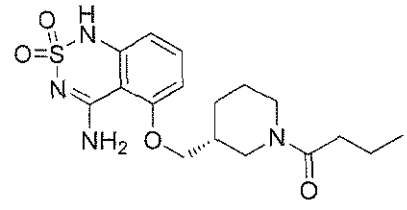
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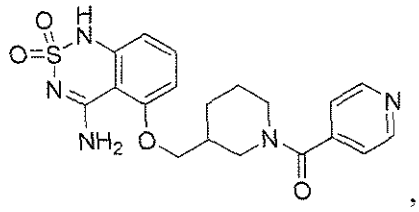
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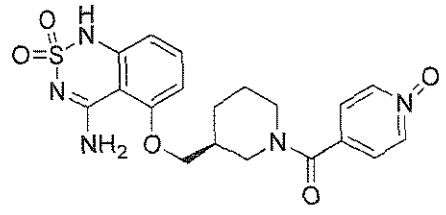
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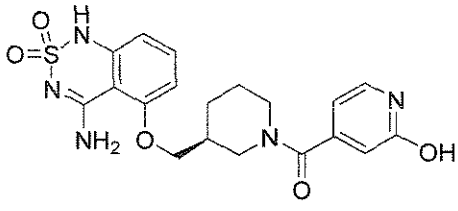
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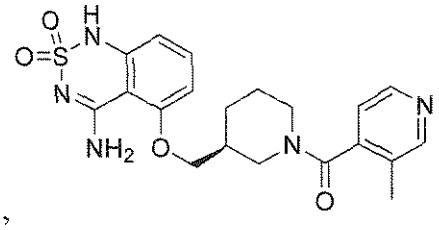
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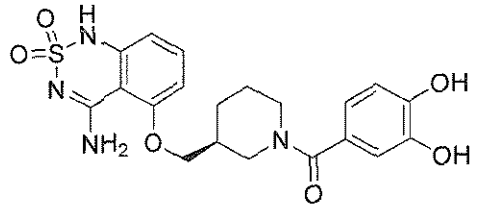
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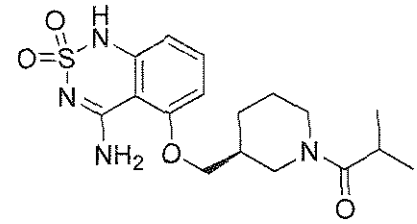
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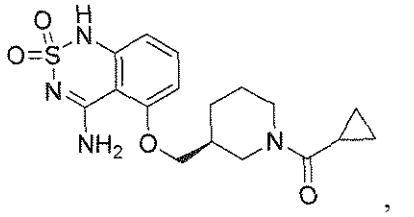
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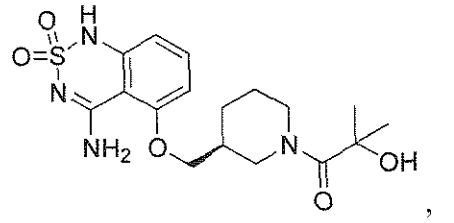
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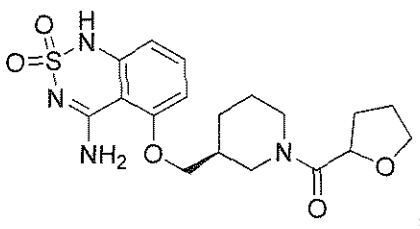
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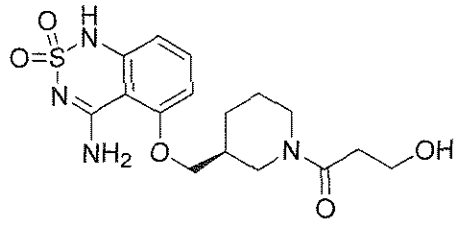
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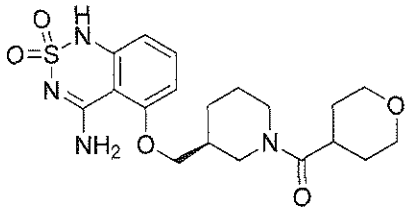
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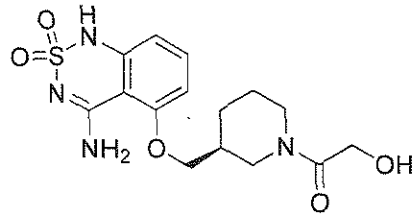
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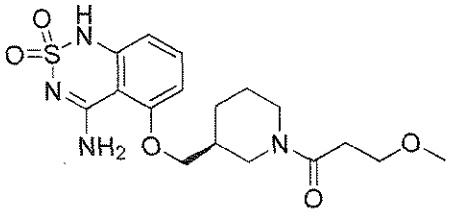
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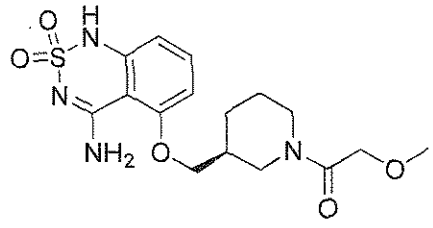
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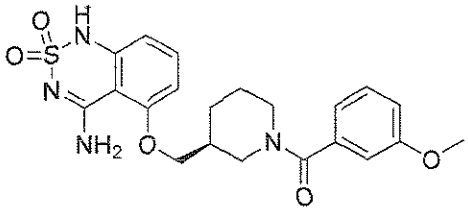
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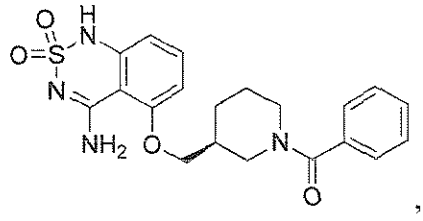
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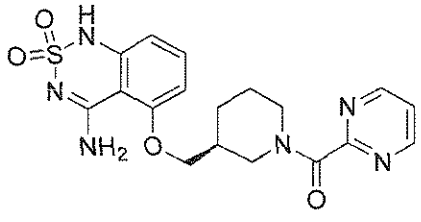
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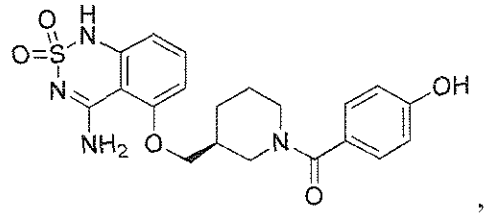
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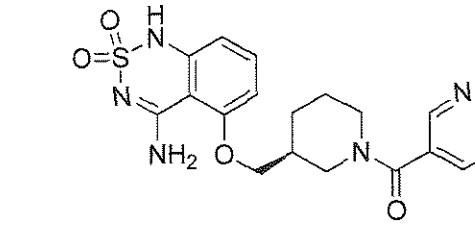
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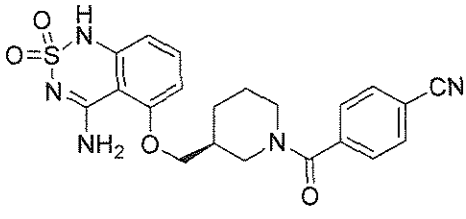
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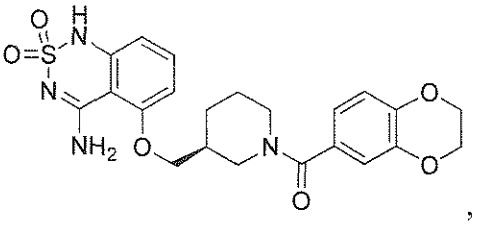

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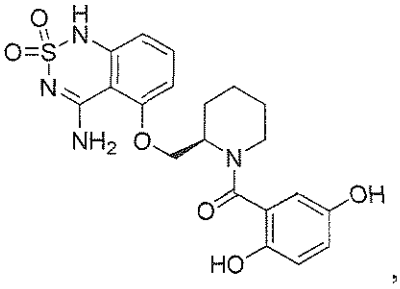

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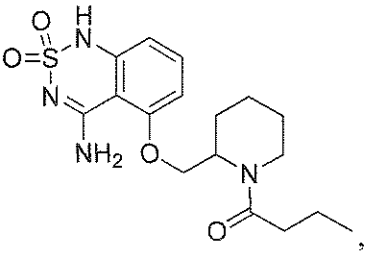

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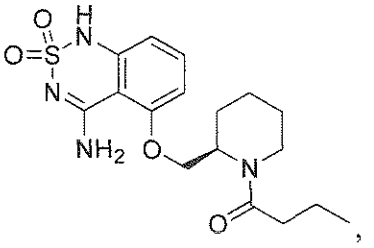

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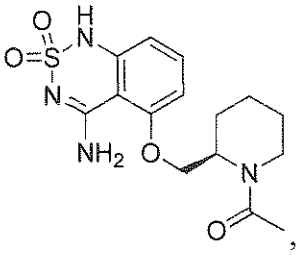

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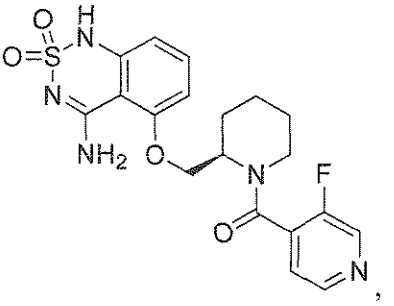

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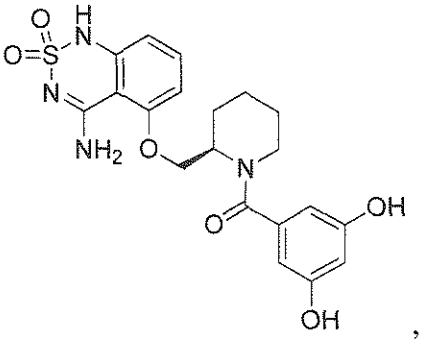

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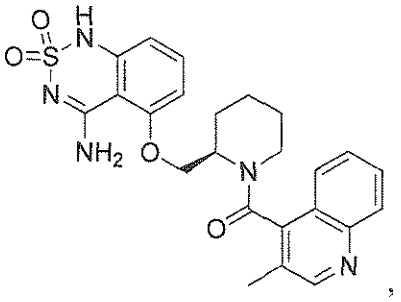

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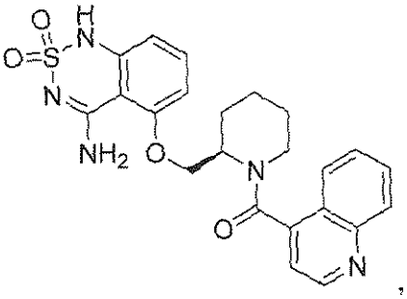
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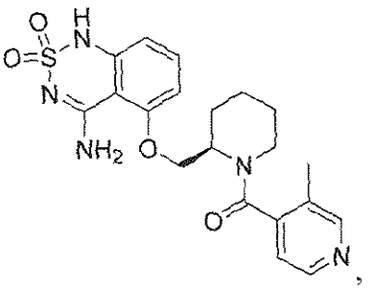
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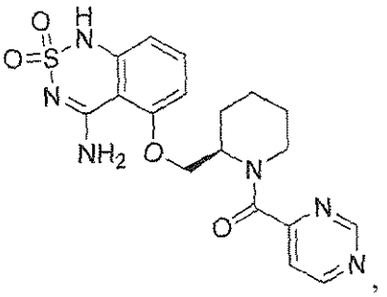
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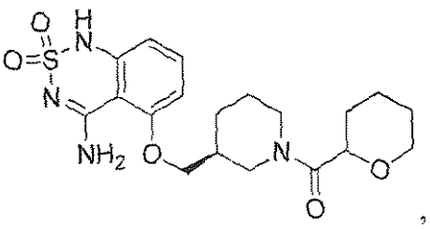
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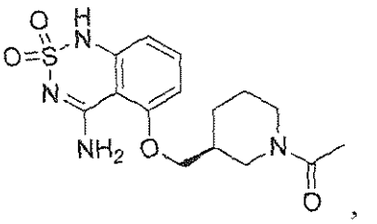
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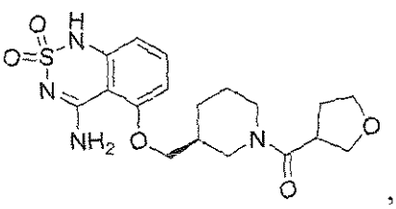
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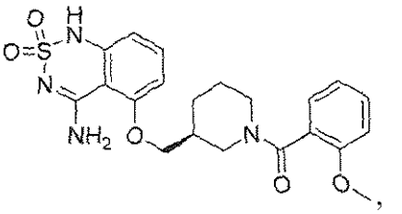
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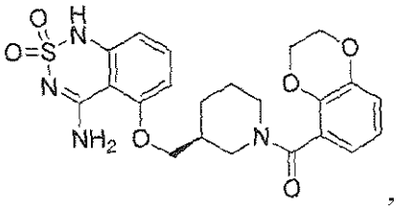
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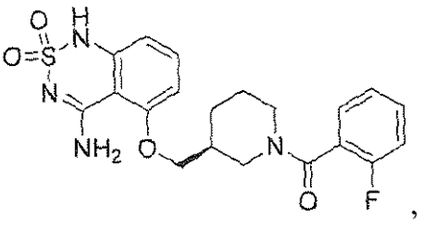
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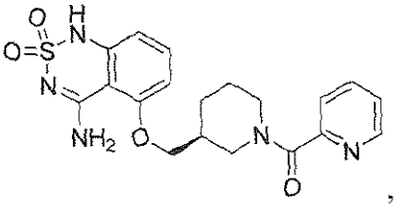
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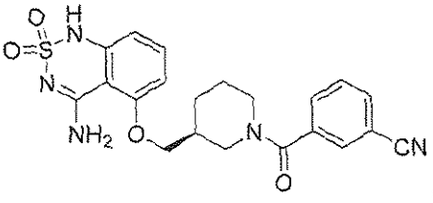
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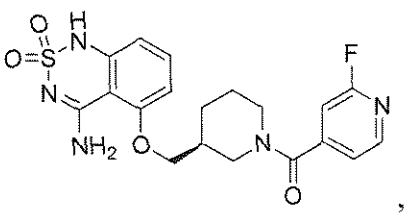
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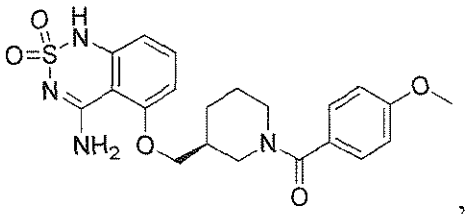
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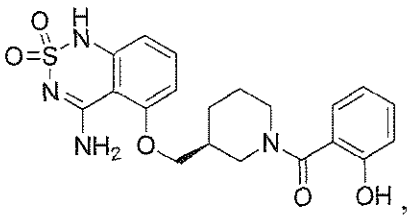
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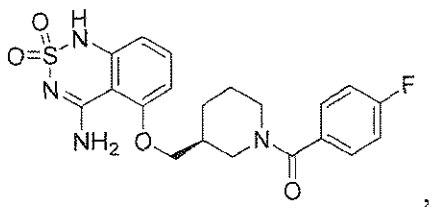
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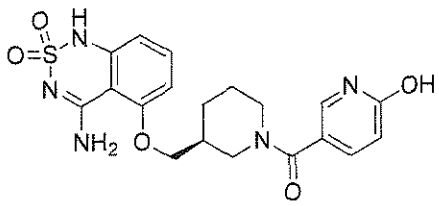
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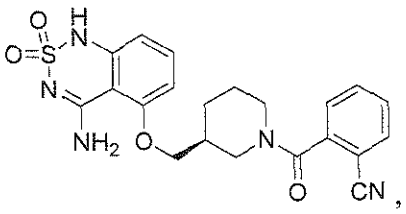
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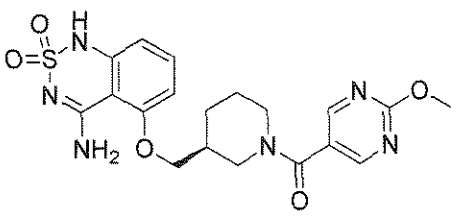
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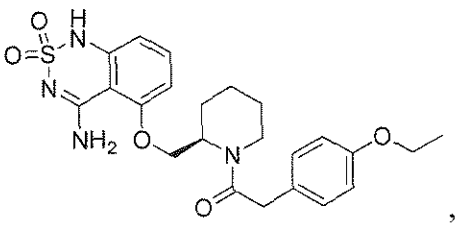
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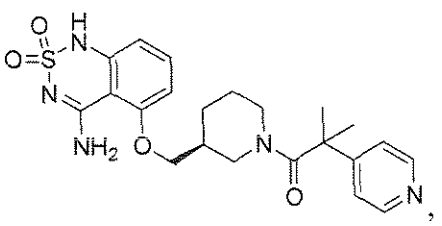
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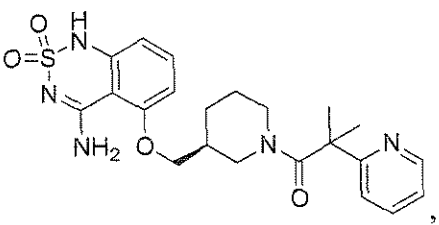
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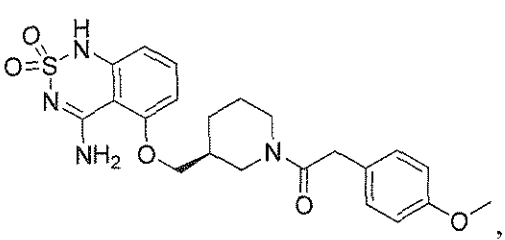
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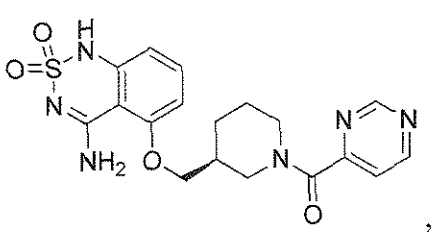
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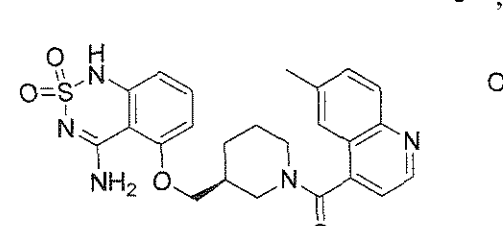
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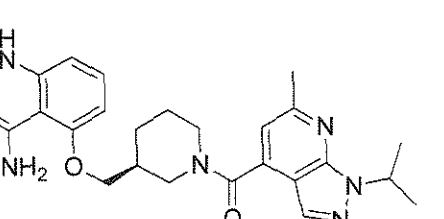
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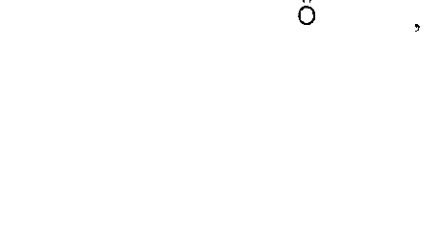
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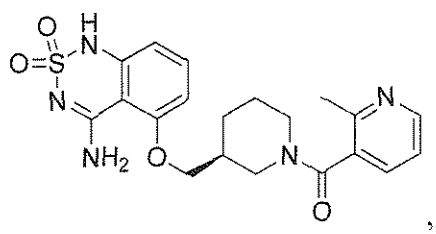
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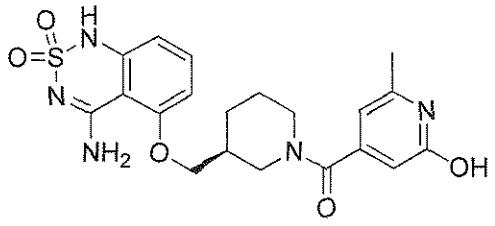
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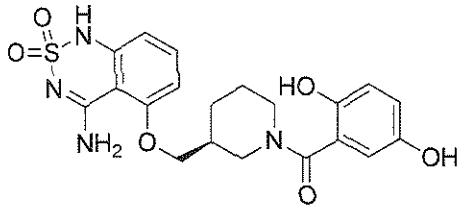
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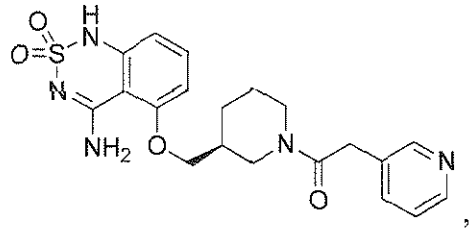
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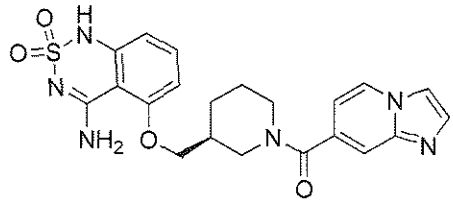
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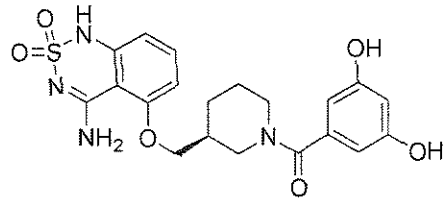
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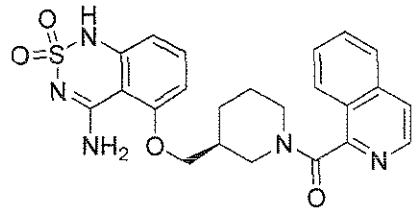
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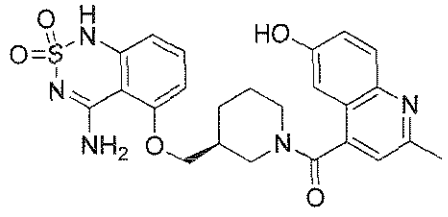
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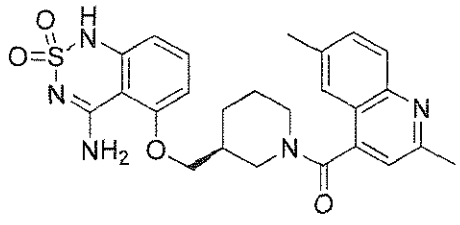
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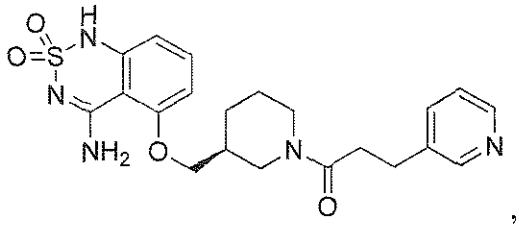
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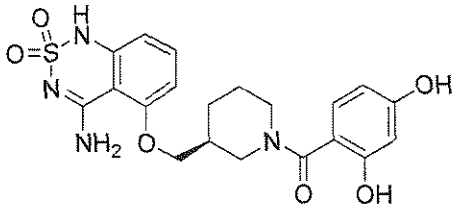
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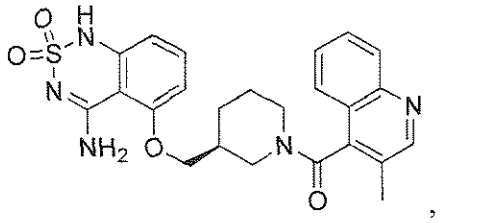
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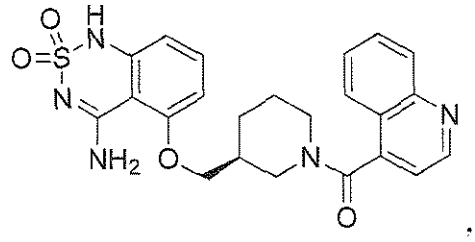
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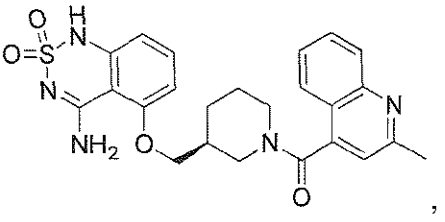
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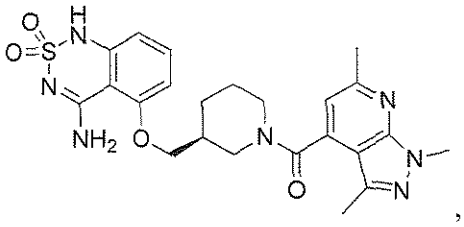
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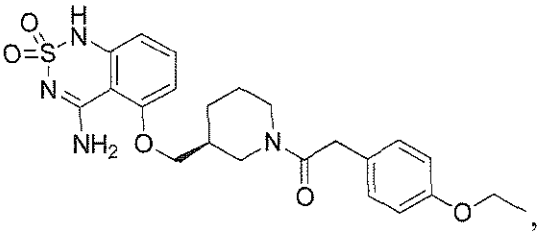
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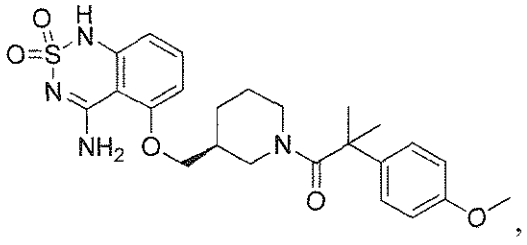
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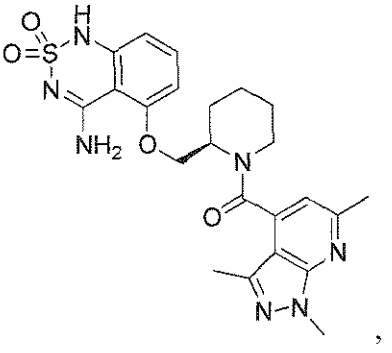
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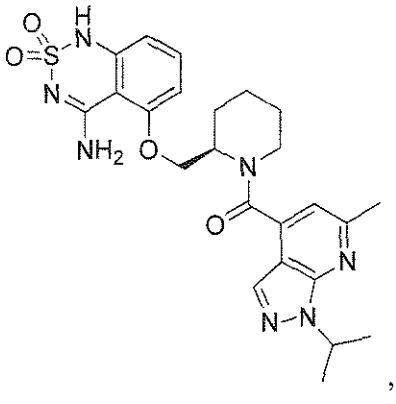
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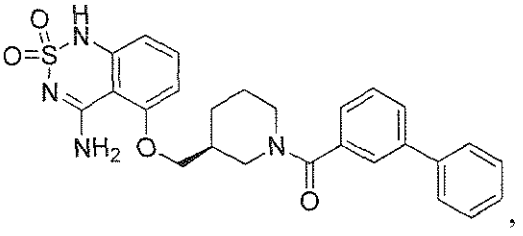
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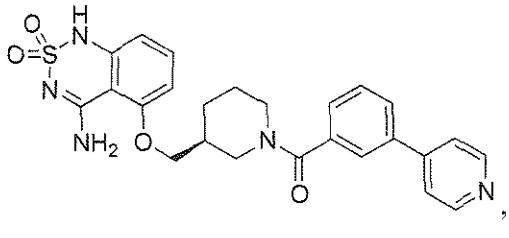
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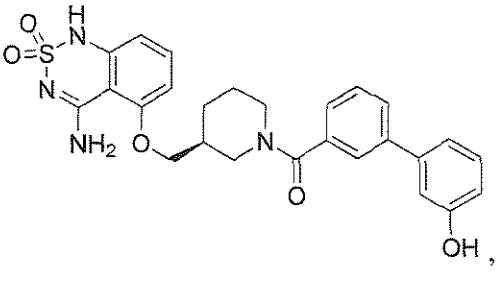
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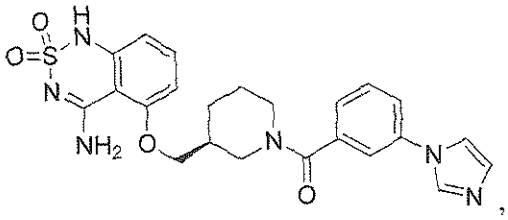

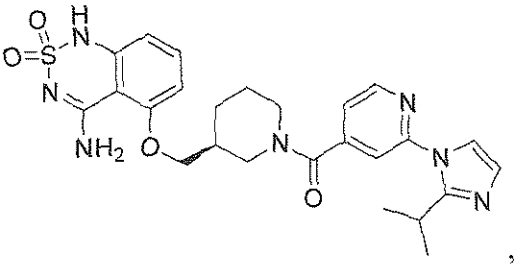

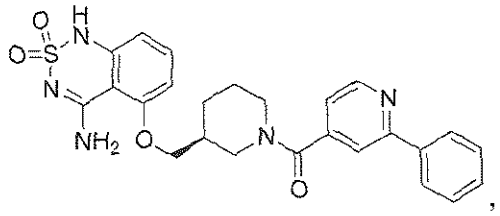

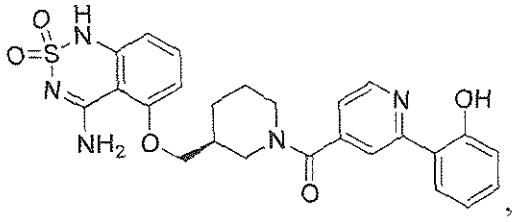

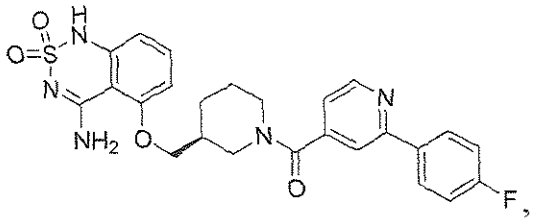

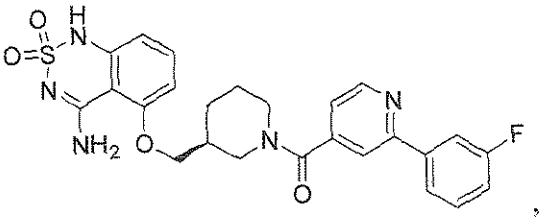

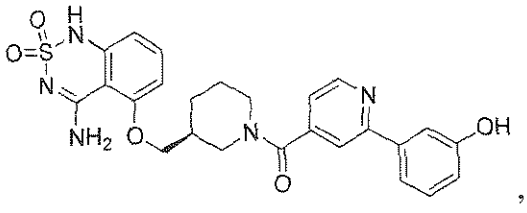

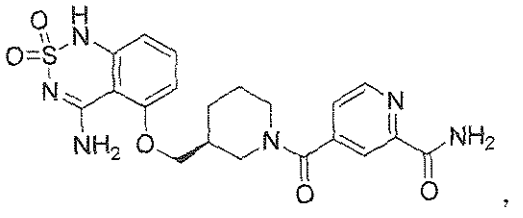

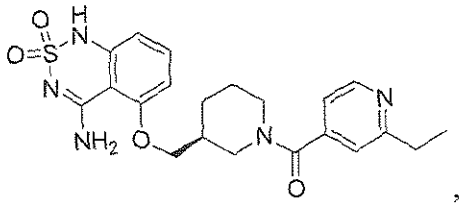

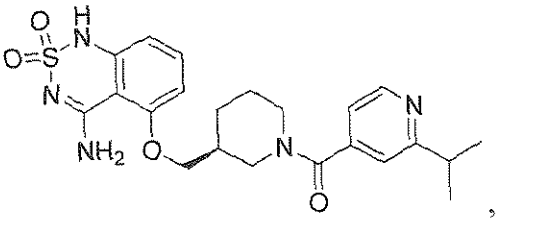

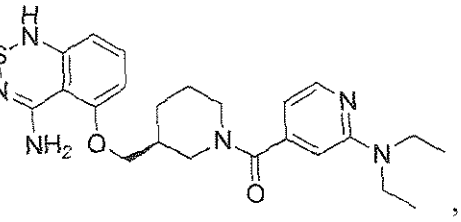

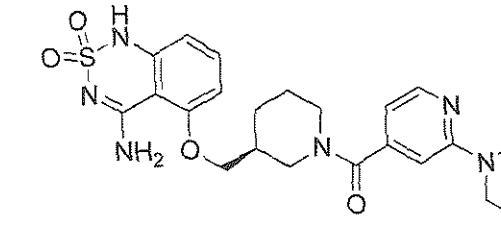



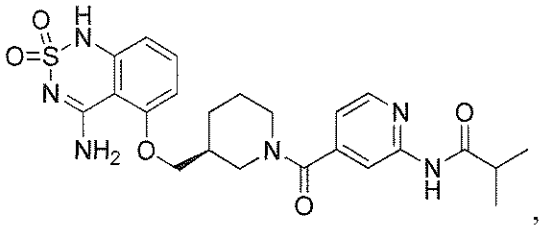

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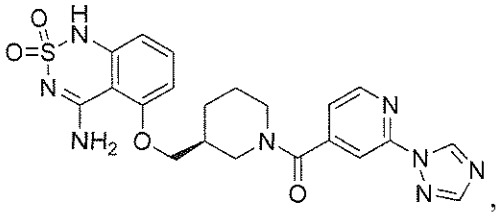

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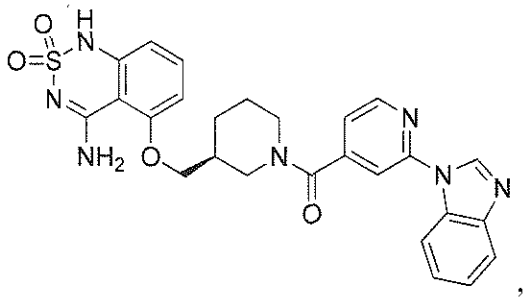

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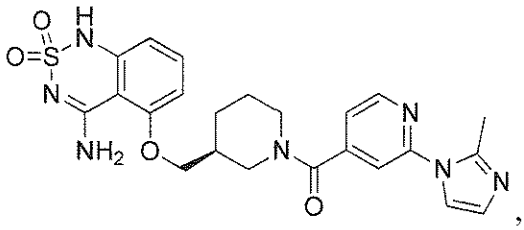

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or a salt or solvate thereof.

33. An ingestible composition comprising
a compound of any one of the preceding claims; and
an ingestibly acceptable excipient.

34. The ingestible composition of claim 33, further comprising one or more sweeteners.

35. The ingestible composition of claim 34, wherein the sweetener is selected from the group consisting of sucrose, fructose, glucose, galactose, mannose, lactose, tagatose, maltose, corn syrup (including high fructose corn syrup), D-tryptophan, glycine, erythritol, isomalt, lactitol, mannitol, sorbitol, xylitol, maltodextrin, maltitol, isomalt, hydrogenated glucose syrup (HGS), hydrogenated starch hydrolyzate (HSH), stevioside, rebaudioside A, other sweet Ste*via*-based glycosides, carrelame, other guanidine-based sweeteners, saccharin, acesulfame-K, cyclamate, sucralose, alitame, mogroside, neotame, aspartame, other aspartame derivatives, and combinations thereof.

36. The ingestible composition of claim 33, which is a food or beverage product, a pharmaceutical composition, a nutritional product, a dietary supplement, over-the-counter medication, or oral care product.

37. The ingestible composition of claim 36, wherein the food or beverage product is for human or animal consumption.

38. The ingestible composition of claim 36, wherein the food or beverage product is selected from the group consisting of the Soup category; the Dried Processed Food category; the Beverage category; the Ready Meal category; the Canned or Preserved Food category; the Frozen Processed Food category; the Chilled Processed Food category; the Snack Food category; the Baked Goods category; the Confectionary category; the Dairy Product category; the Ice Cream category; the Meal Replacement category; the Pasta and Noodle category; the Sauces, Dressings, Condiments category; the Baby Food category; the Spreads category; sweet coatings, frostings, or glazes; and combinations thereof.

39. A method of increasing the sweet taste of a composition comprising contacting the composition thereof with a compound of any one of claims 1 to 32 to form a modified composition.

40. A sweet modulating composition, comprising a compound of any one of claims 1 to 32 in an amount effective to provide sweetening in combination with a sweetener, wherein the sweetening is more than the sweetening provided by the sweetener without the compound.

41. An ingestible composition comprising the sweet modulating composition of claim 40.

42. The ingestible composition of claim 41, which is in form of a food or beverage product, a pharmaceutical composition, a nutritional product, a dietary supplement, over-the-counter medication, or oral care product.

43. A flavoring concentrate formulation comprising

i) as flavor modifying ingredient, a compound of any one of claims 1 to 32;

ii) a carrier; and

iii) optionally at least one adjuvant.

44. The flavoring concentrate formulation of claim 43, wherein the at least one adjuvant comprises one or more flavoring agents.

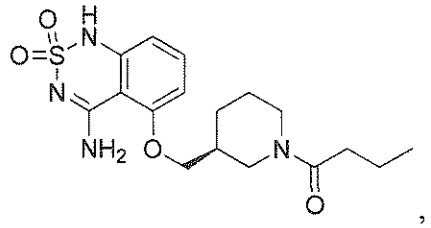
45. The flavoring concentrate formulation of claim 43 or 44, wherein the at least one adjuvant comprises one or more sweeteners.

46. The flavoring concentrate formulation of any one of claims 43 to 45, wherein the at least one adjuvant comprises one or more ingredients selected from the group consisting of a emulsifier, a stabilizer, an antimicrobial preservative, an antioxidant, vitamins, minerals, fats, starches, protein concentrates and isolates, salts, a freezing point depressant, nucleating agent, and combinations thereof.

47. The flavoring concentrate formulation of any one of claims 43 to 46, which is in a form selected from the group consisting of liquid, solid, semi-solid, foamy material, paste, gel, cream, lotion, and combinations thereof.

48. The flavoring concentrate formulation of any one of claims 43 to 47, wherein the compound of any one of claims 1 to 32 is in a concentration that is at least 2 times of the concentration in a ready-to-use composition.

49. The compound of Claim 32, wherein the compound is selected from the group consisting of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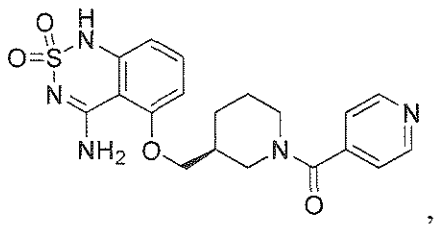
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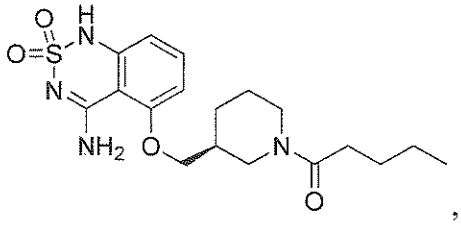
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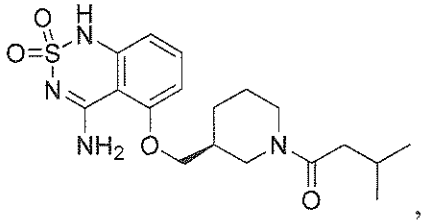
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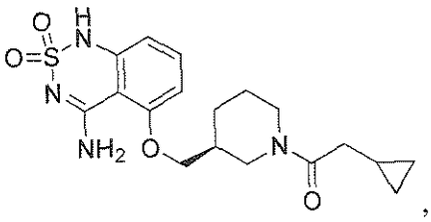
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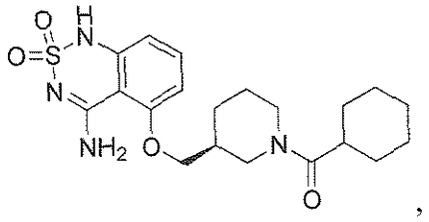
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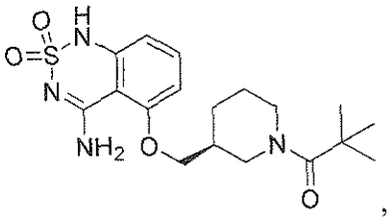
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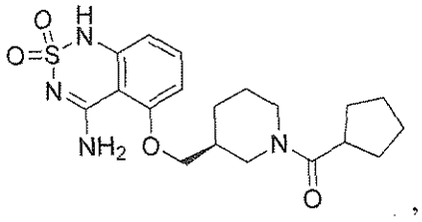
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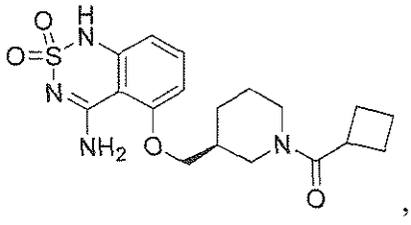
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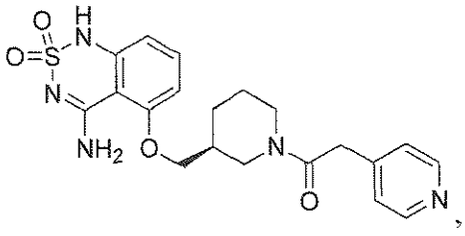
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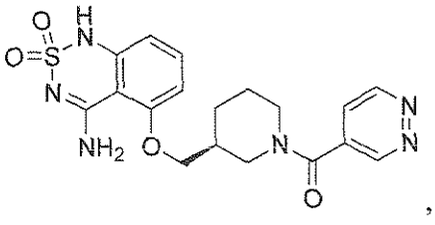
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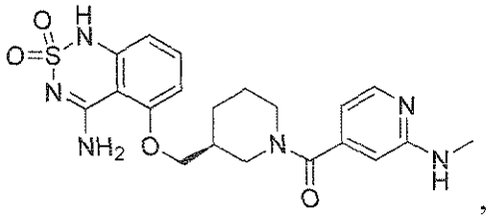
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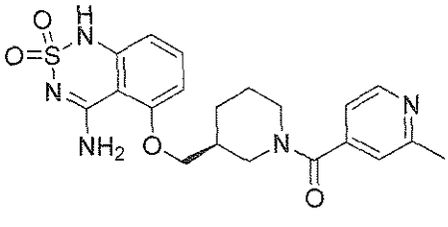
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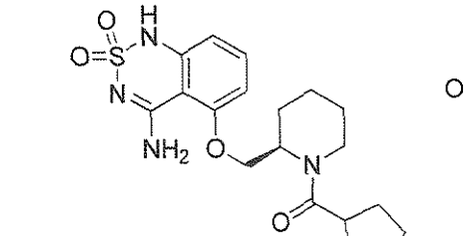
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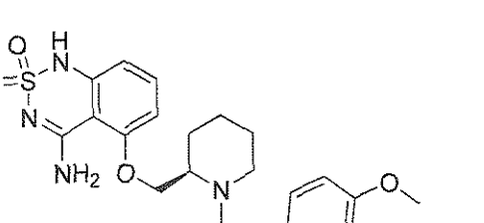
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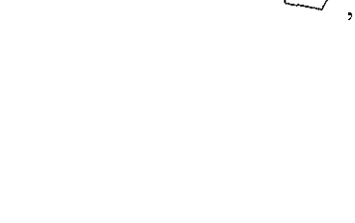
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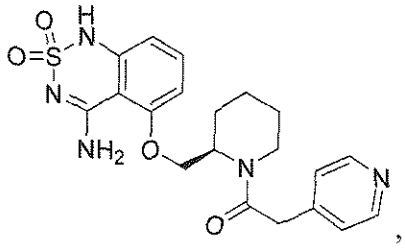

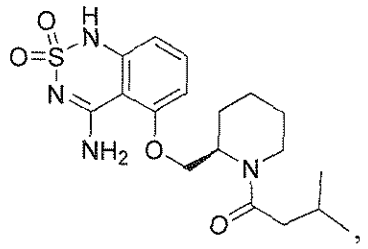

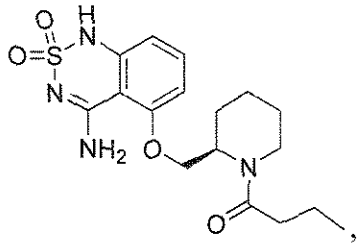

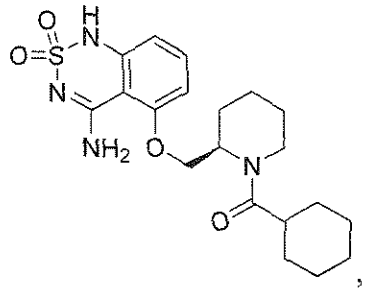

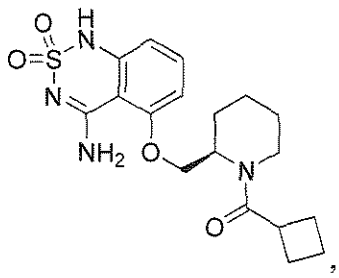

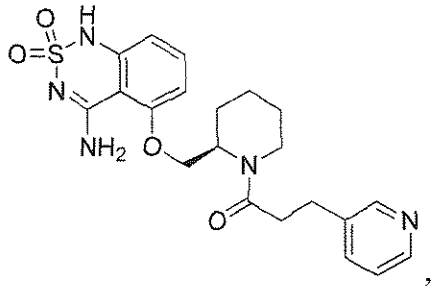

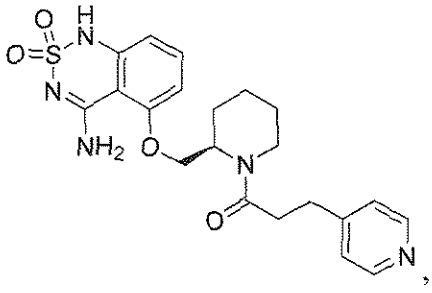

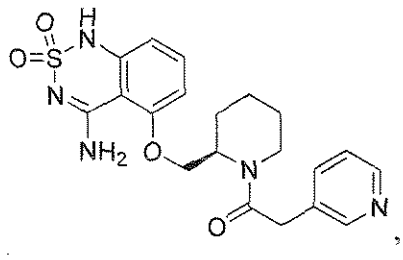

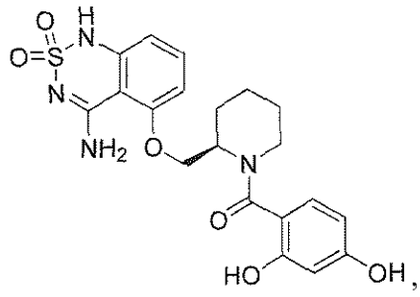
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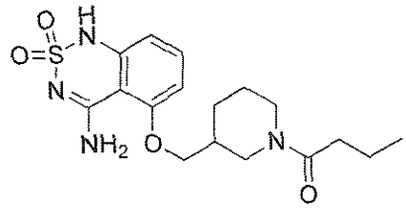
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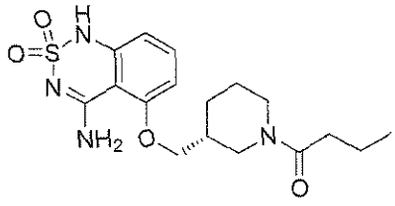
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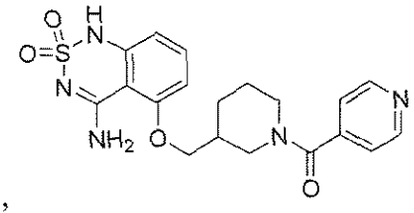
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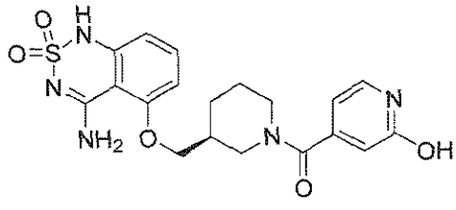
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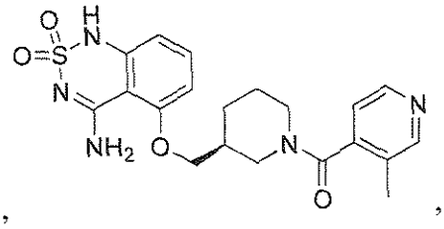
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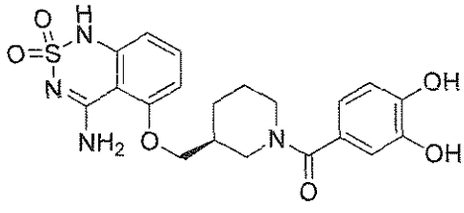
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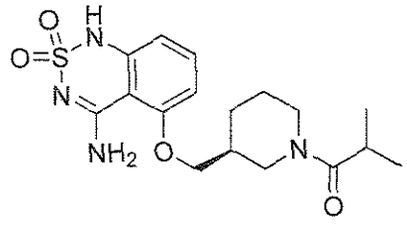
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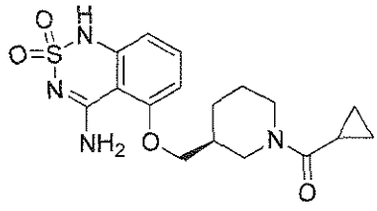
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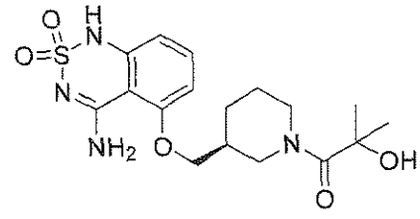
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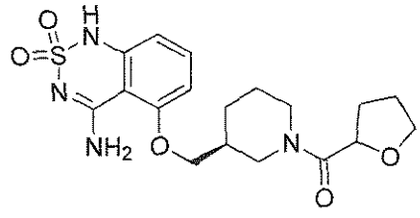
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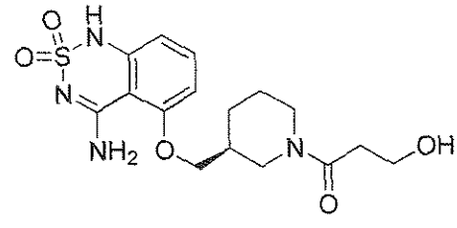
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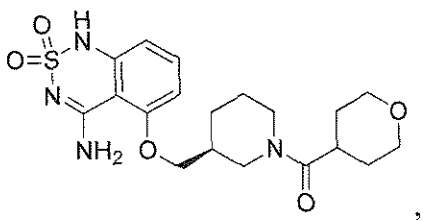
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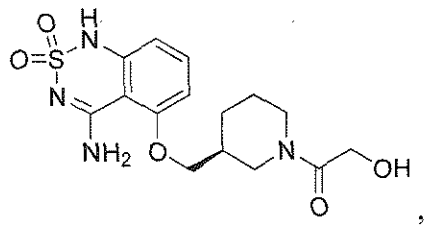
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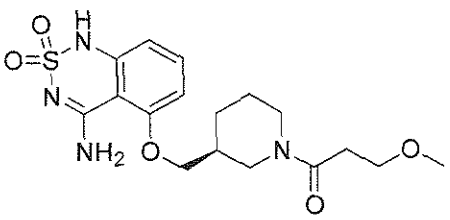
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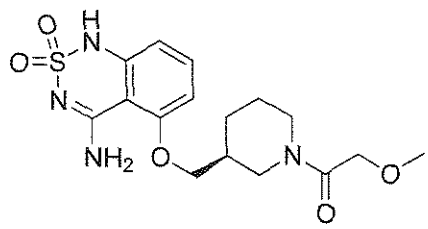
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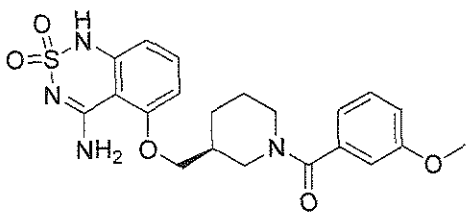
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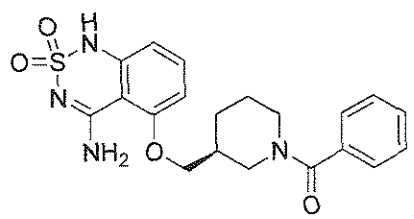
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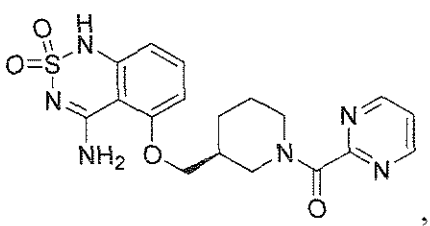
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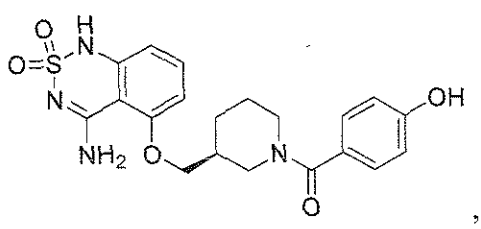
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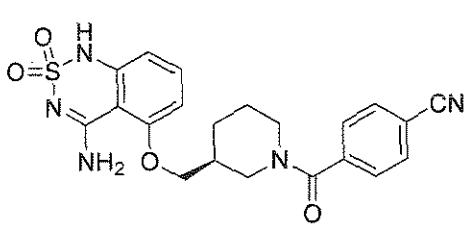
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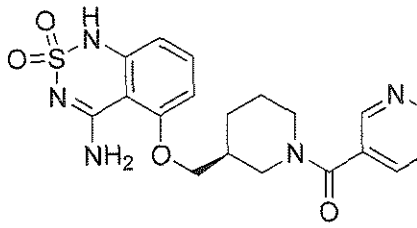
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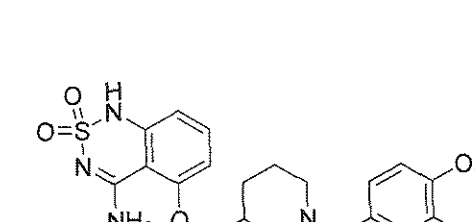
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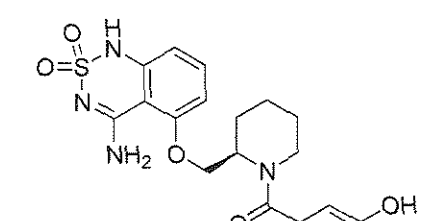
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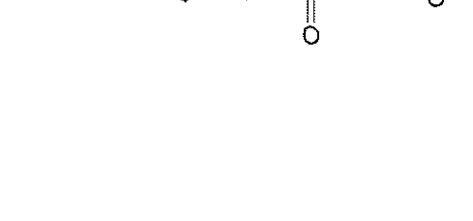
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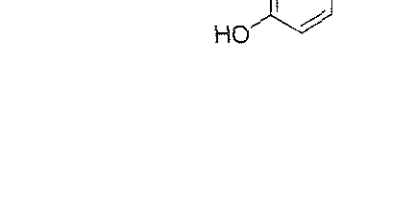
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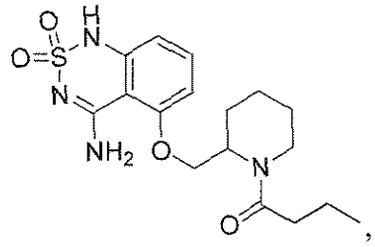

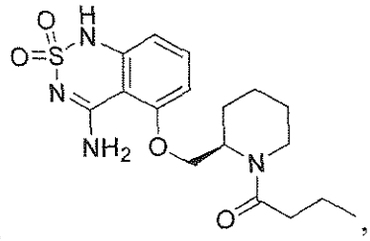

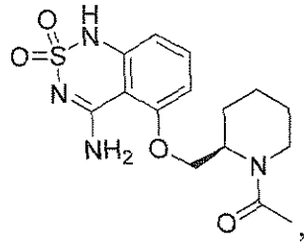

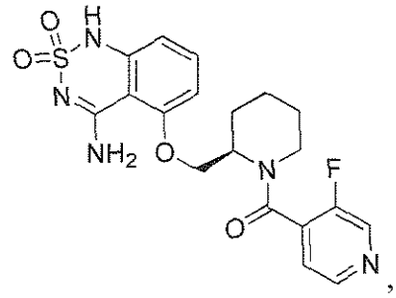

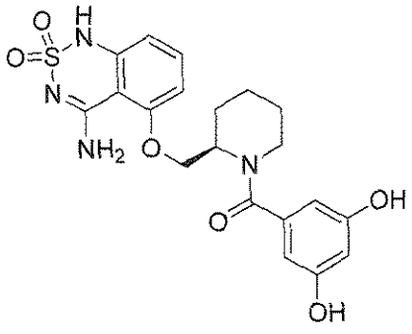

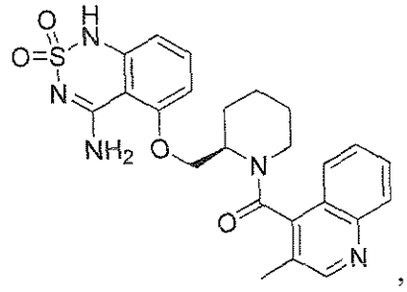

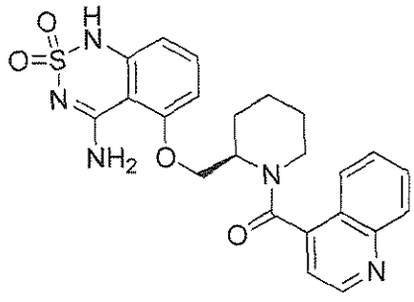

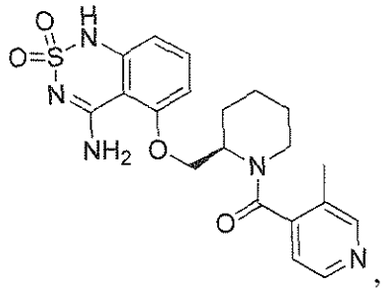

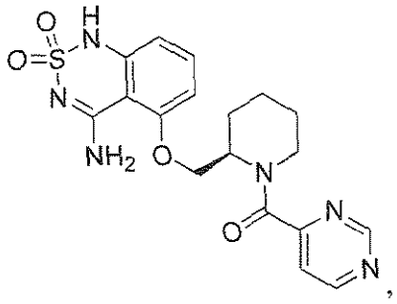

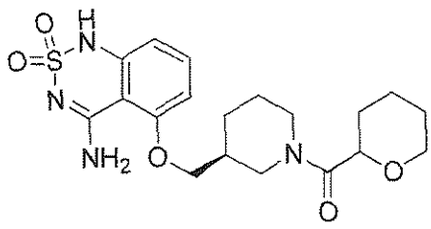
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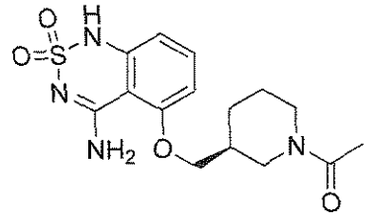
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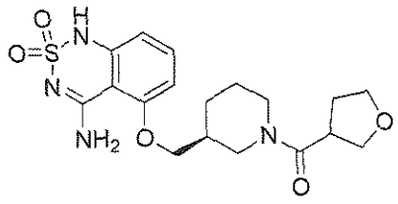
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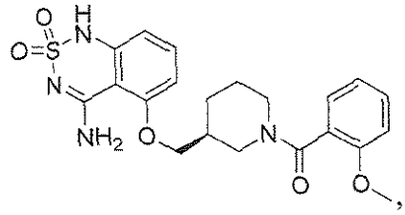
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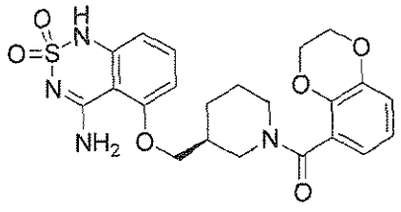
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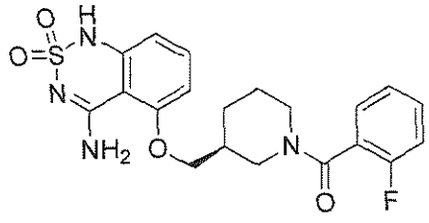
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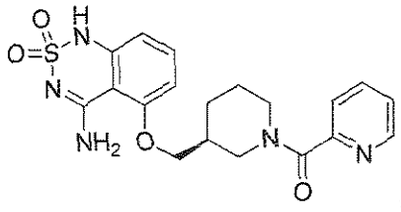
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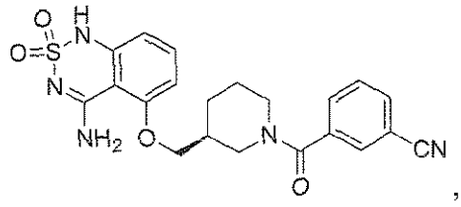
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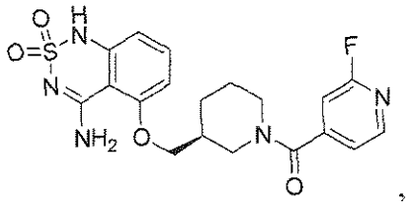
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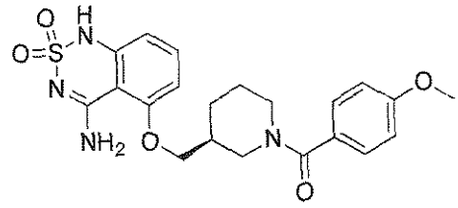
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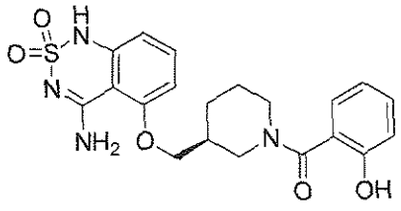
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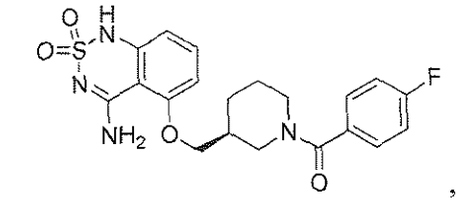
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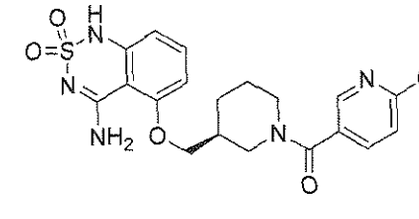
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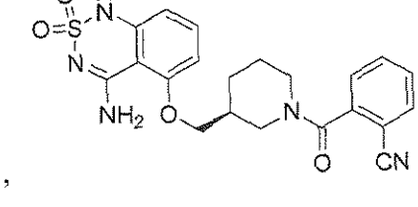
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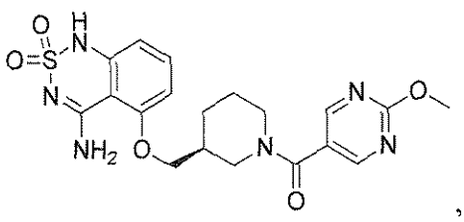
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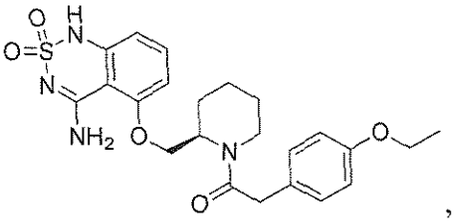
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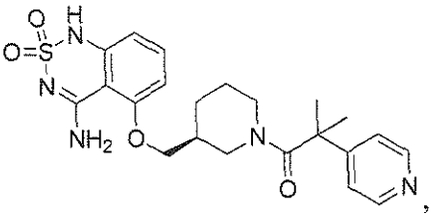
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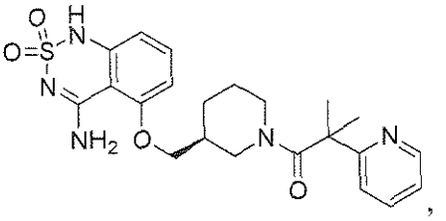
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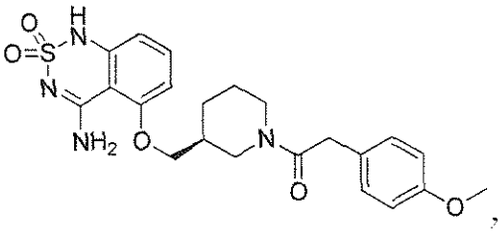
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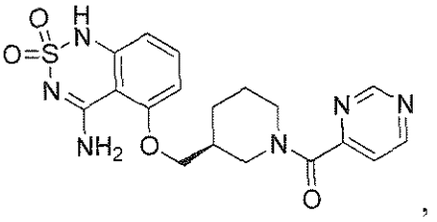
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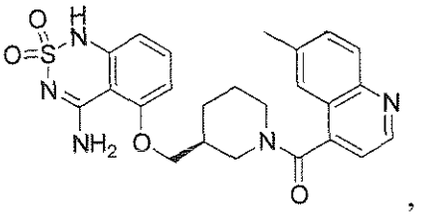
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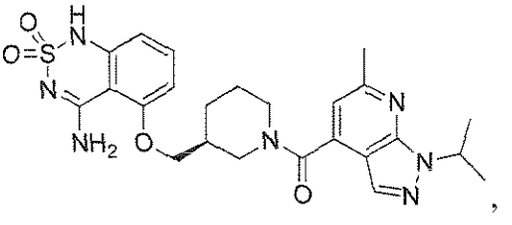
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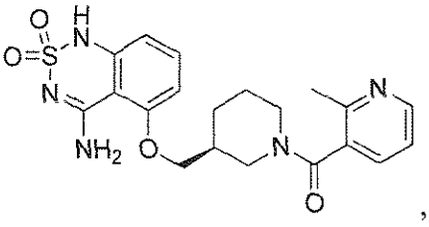
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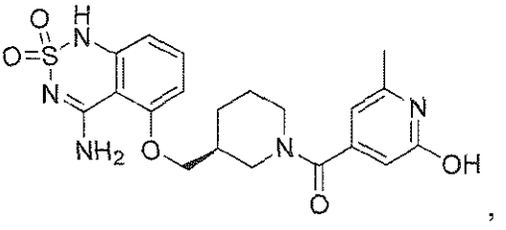
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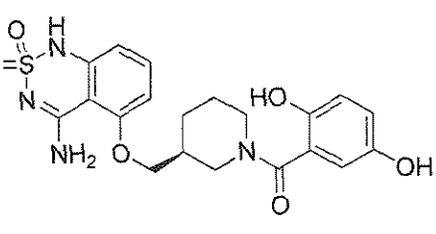
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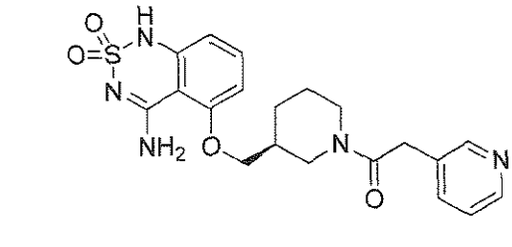
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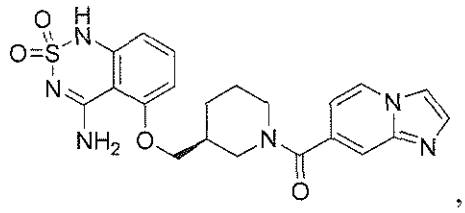
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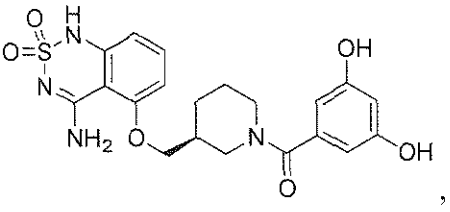
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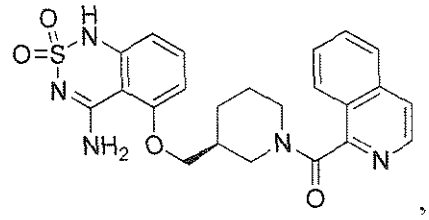
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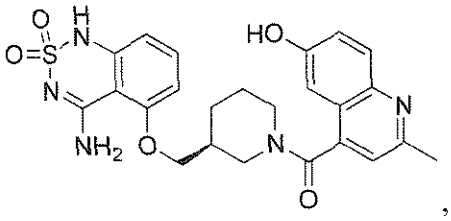
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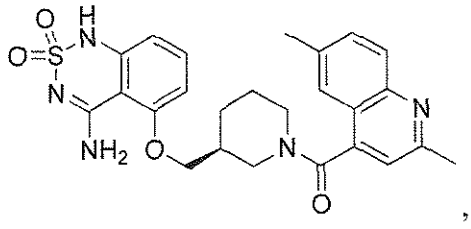
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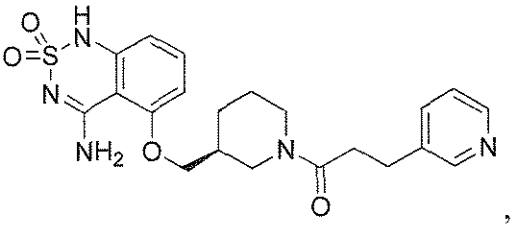
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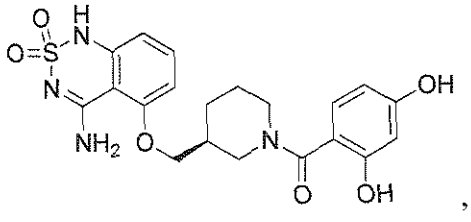
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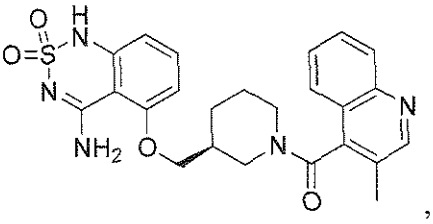
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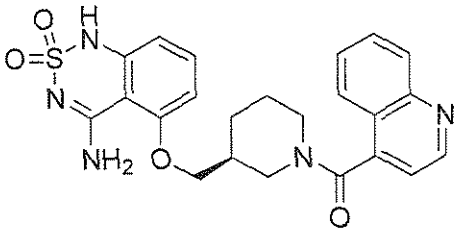
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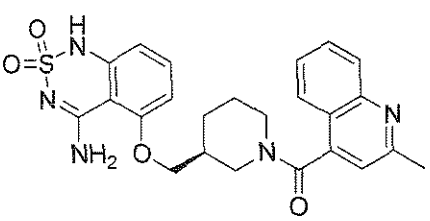
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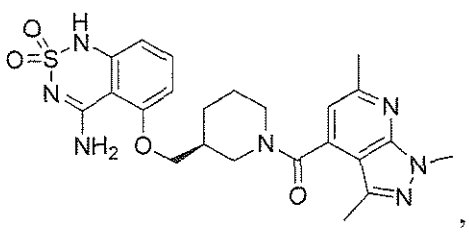
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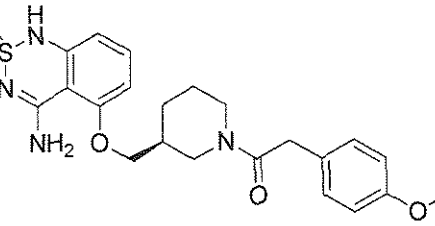
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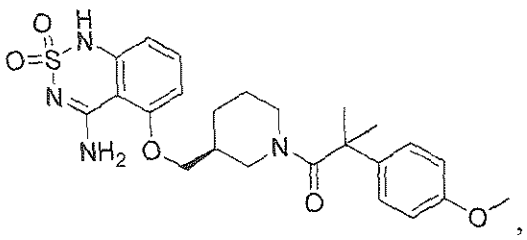

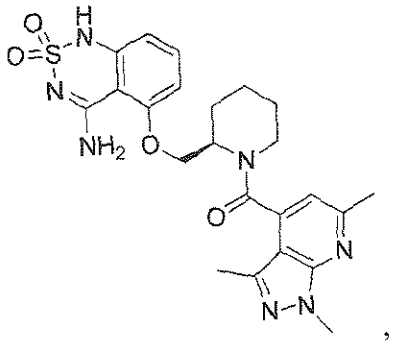

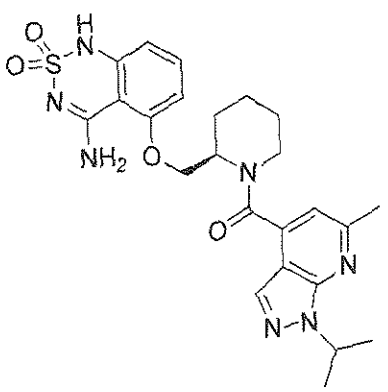

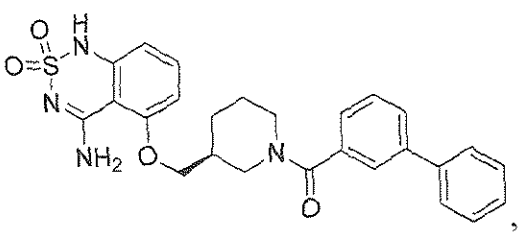

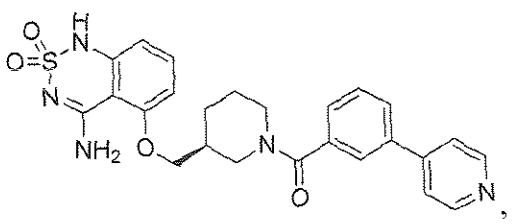

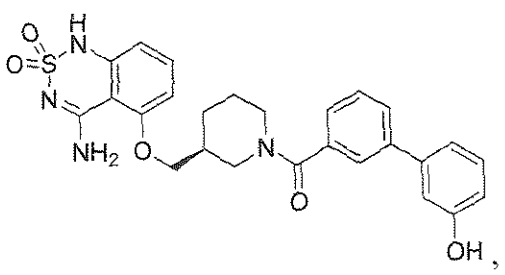

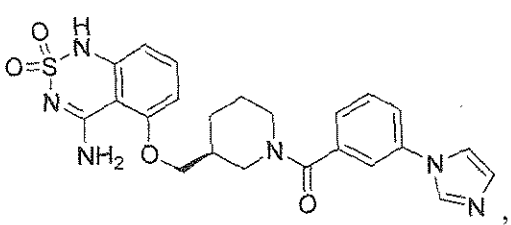

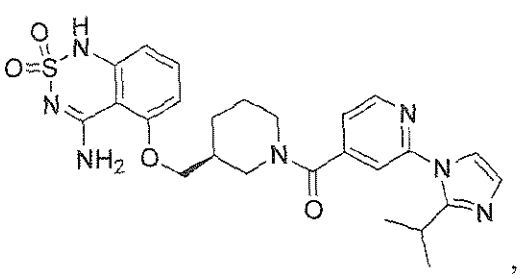

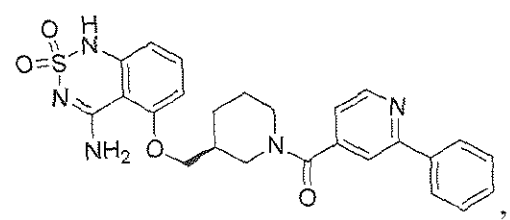

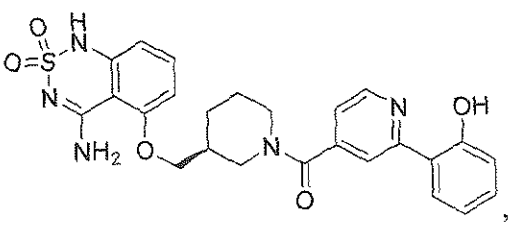

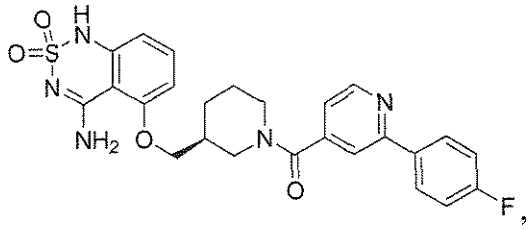
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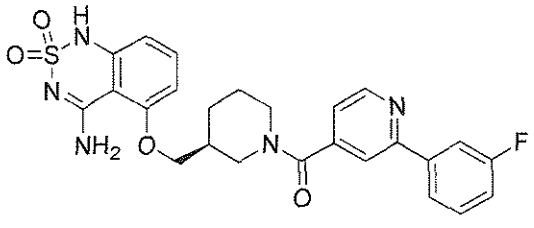
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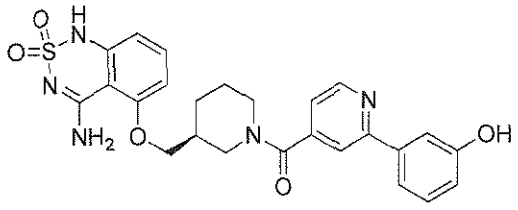
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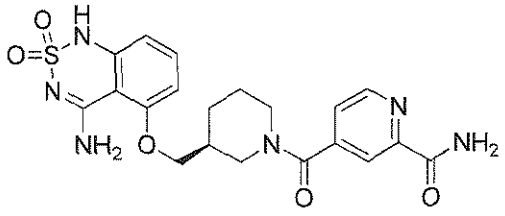
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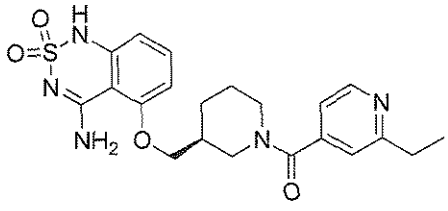
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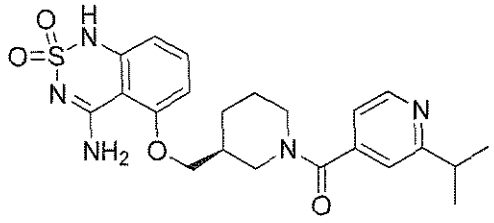
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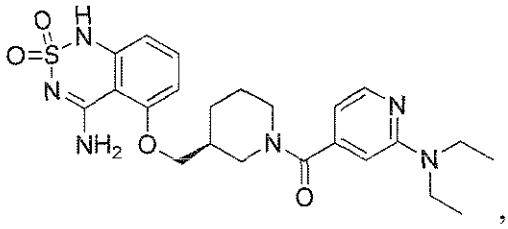
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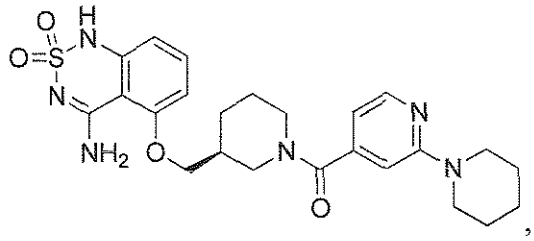
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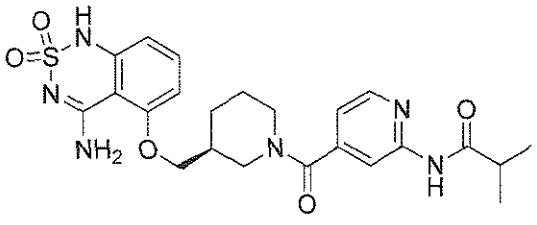
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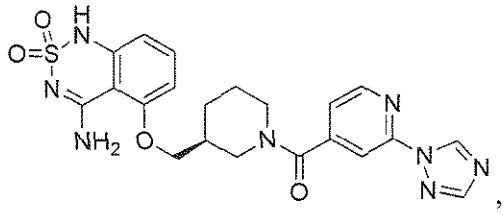
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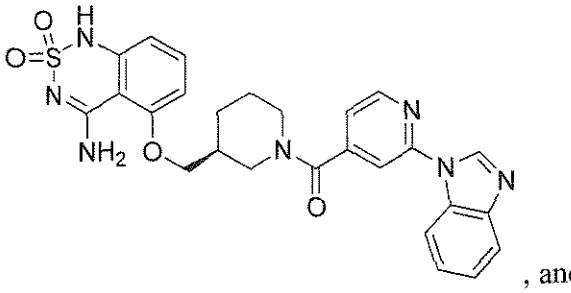
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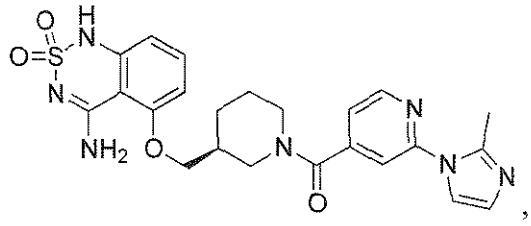
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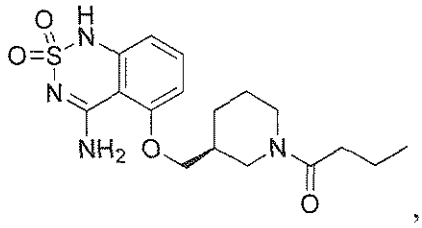
or a salt or solvate thereof.

50. The compound of Claim 32, wherein the compound is selected from the group consisting of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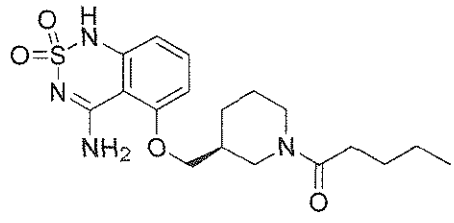
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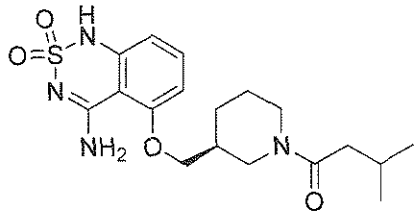
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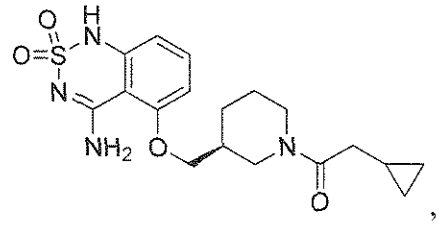
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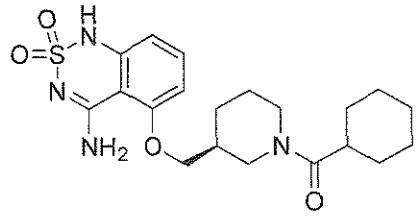
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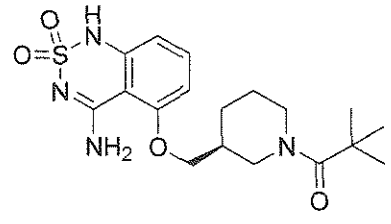
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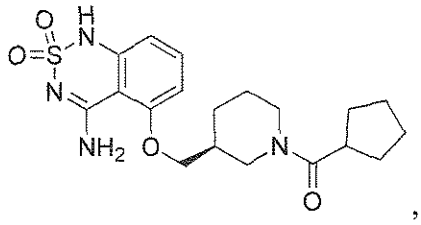
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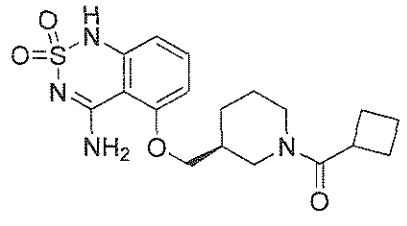
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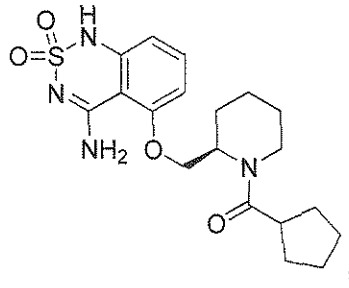
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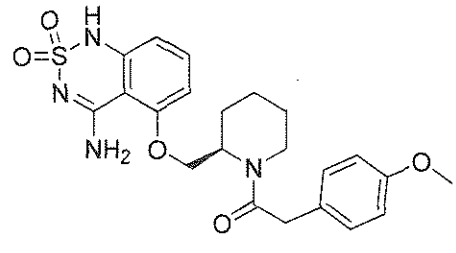
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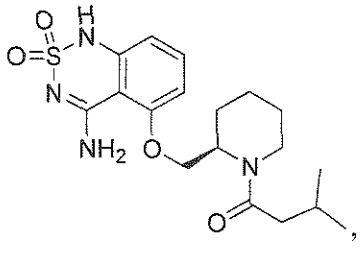
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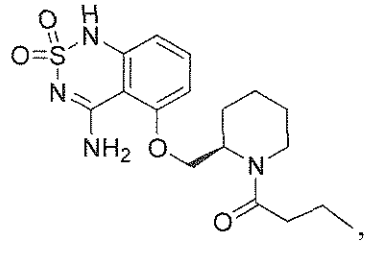
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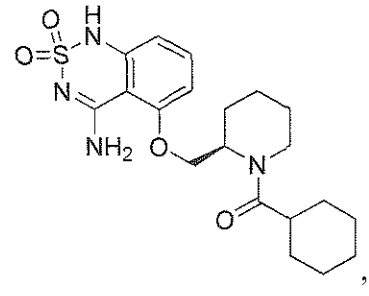
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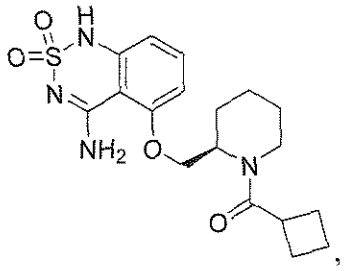

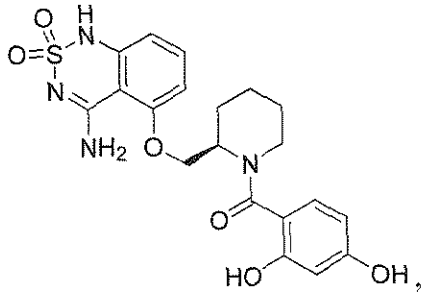

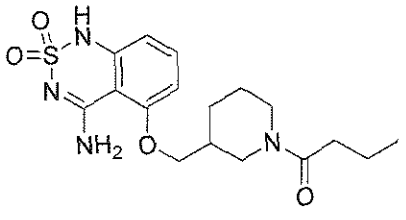

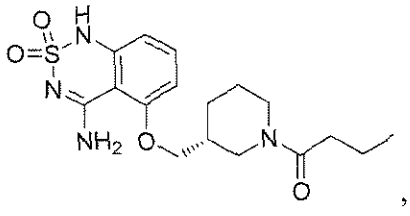

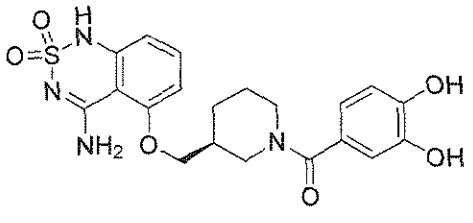

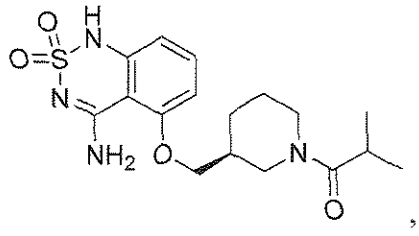

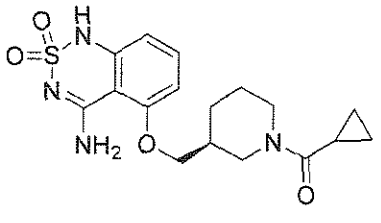

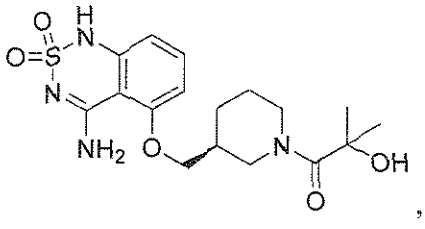

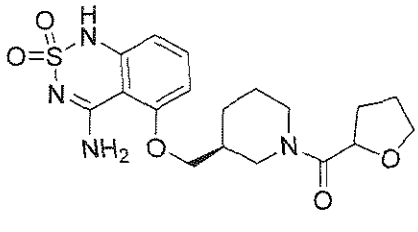

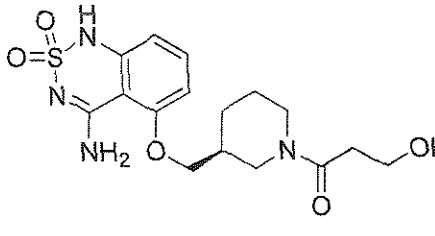

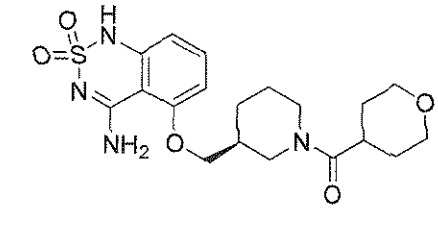

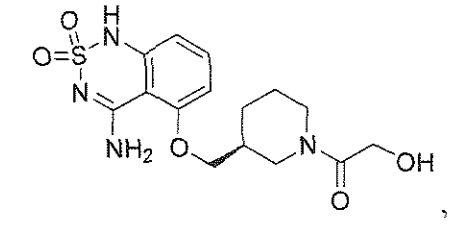



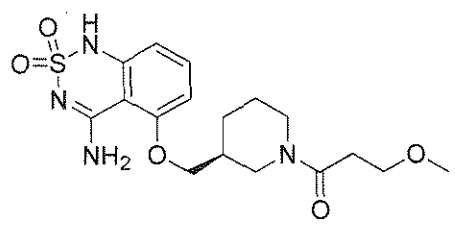
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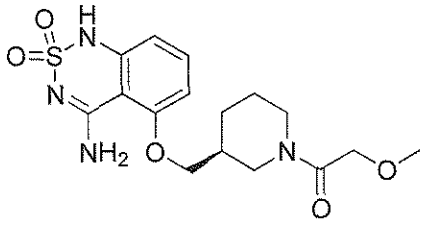
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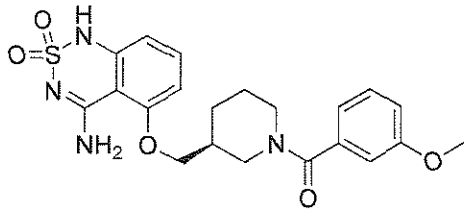
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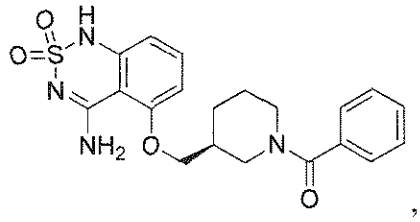
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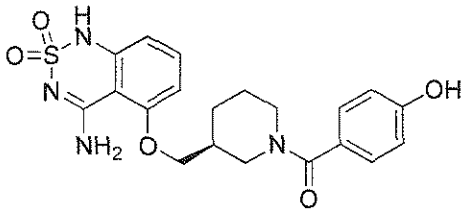
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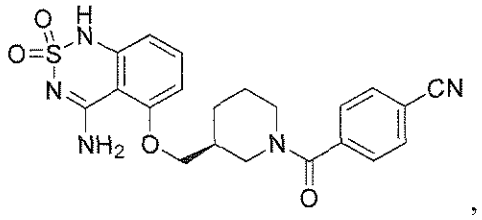
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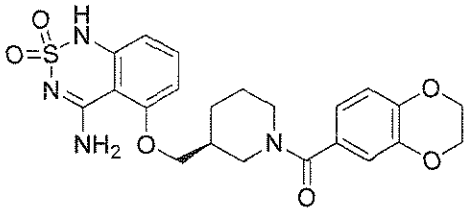
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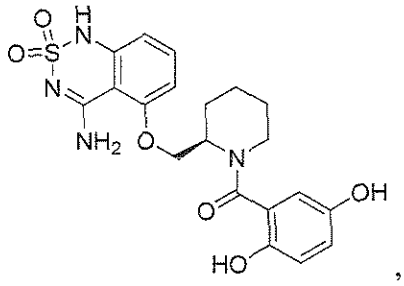
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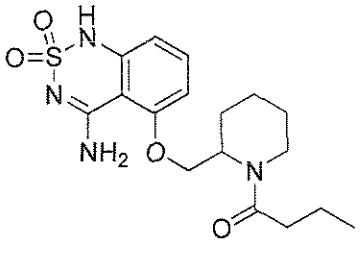
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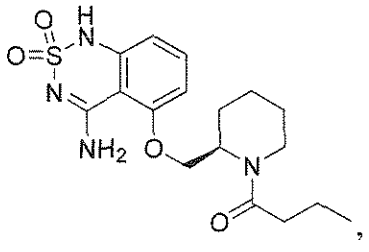
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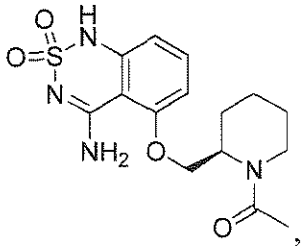
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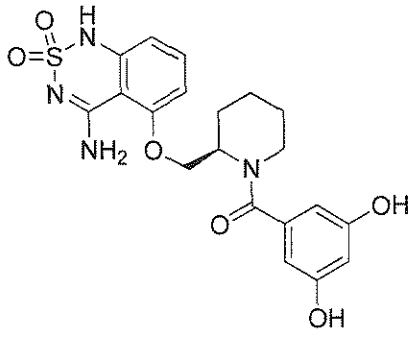
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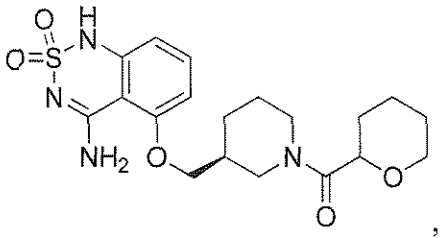
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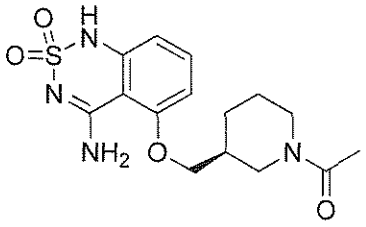
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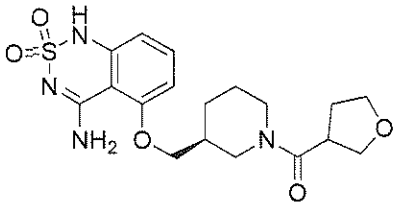
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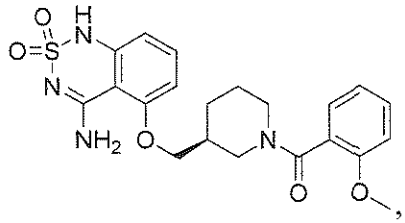
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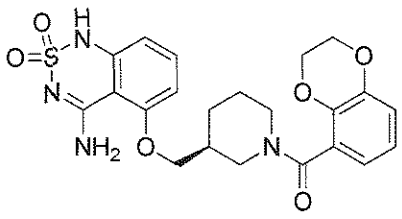
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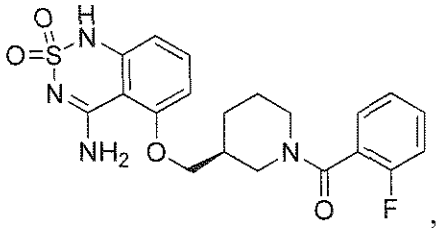
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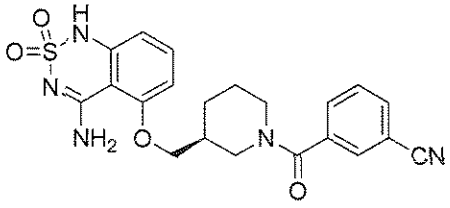
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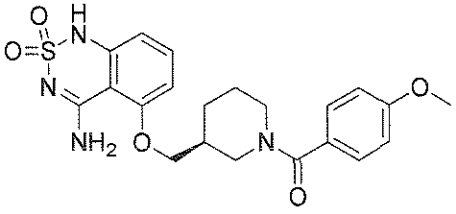
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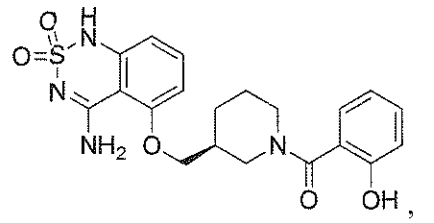
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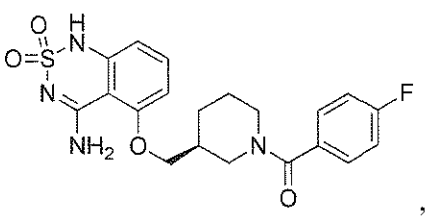
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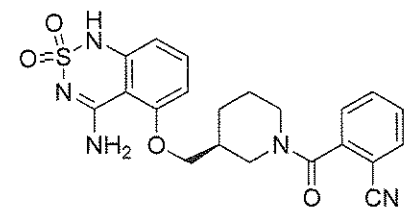
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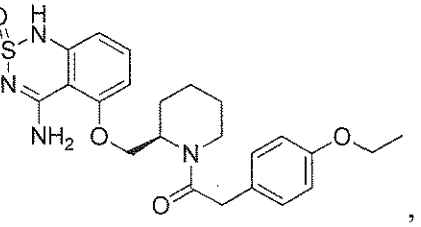
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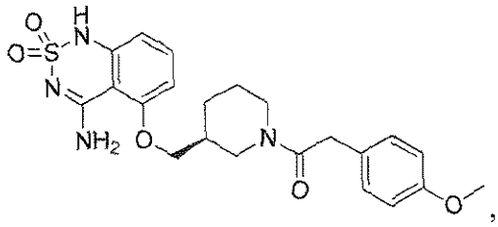
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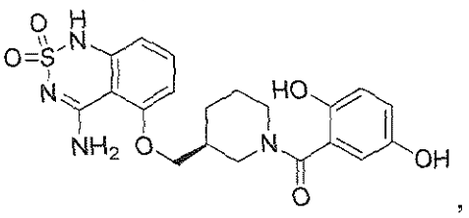
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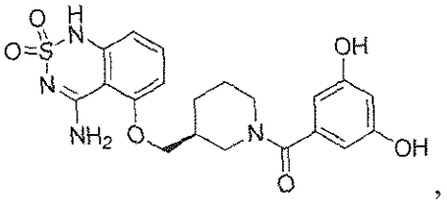
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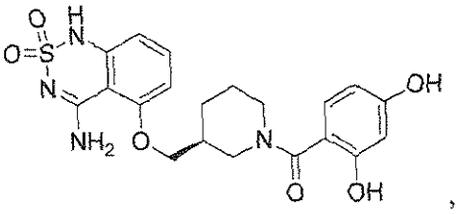
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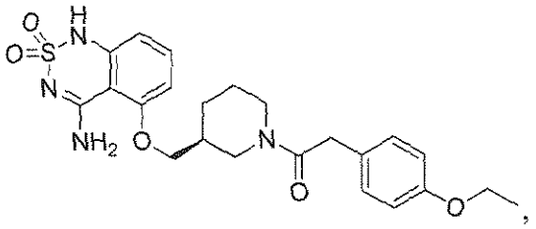
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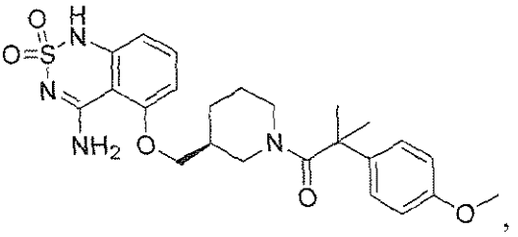
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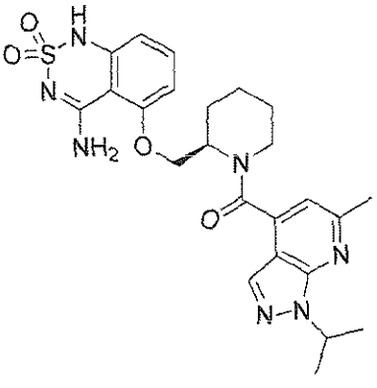
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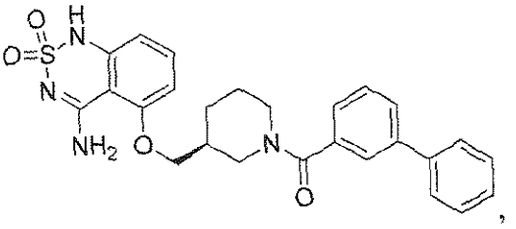
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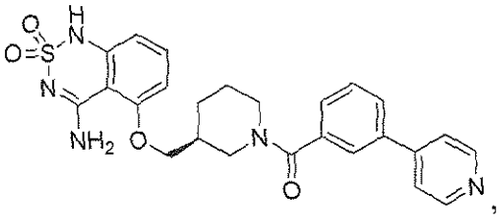
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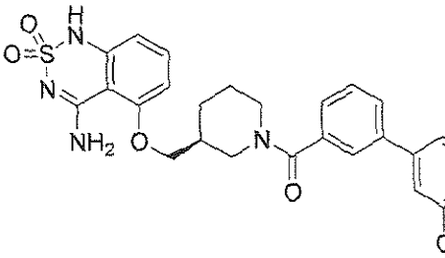
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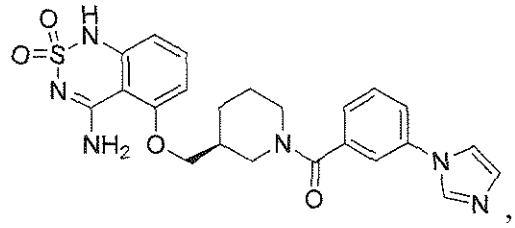
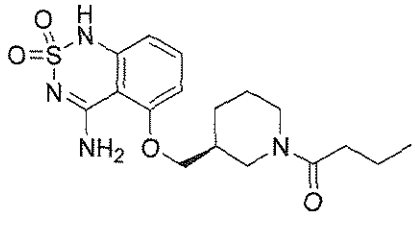
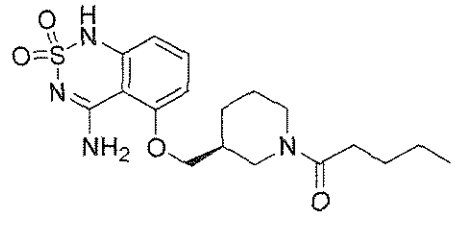
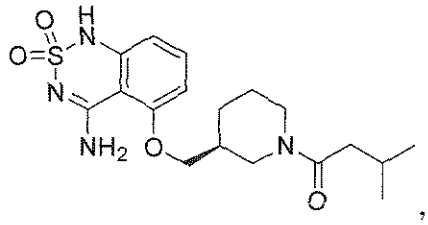


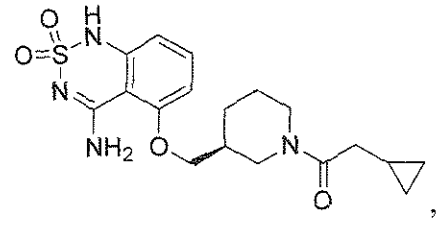
or a salt or solvate thereof.

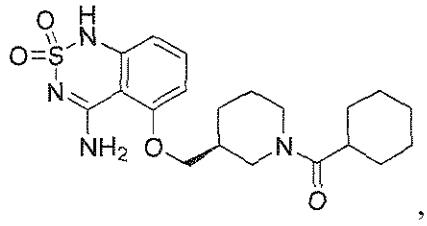
51. The compound of Claim 32, wherein the compound is selected from the group consisting of

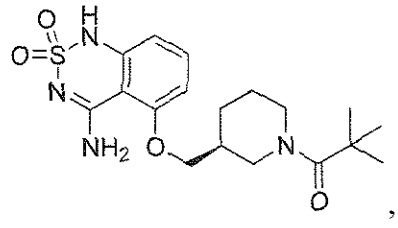


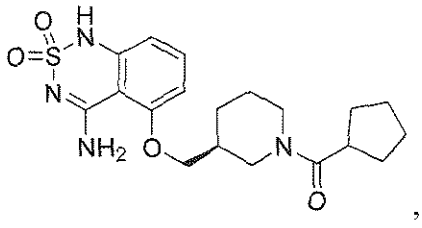


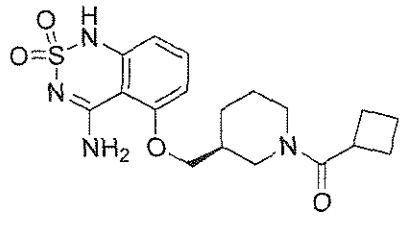


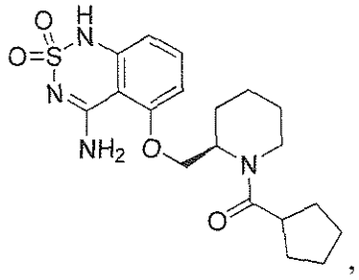








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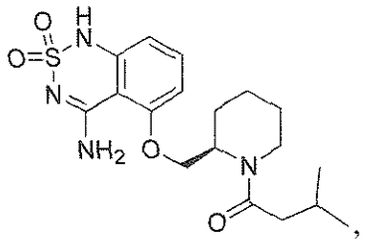
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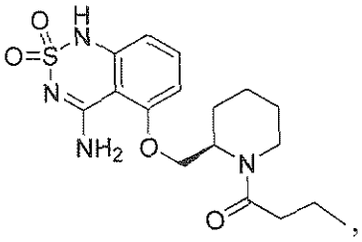
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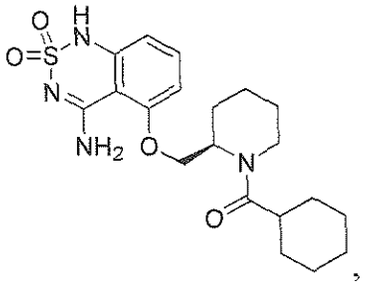
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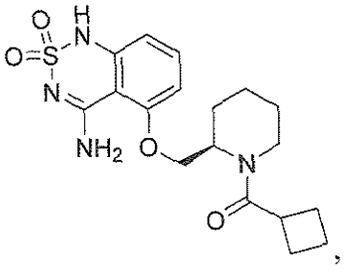
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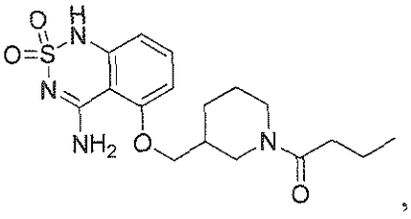
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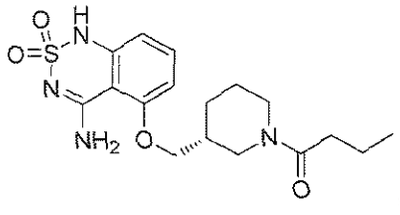
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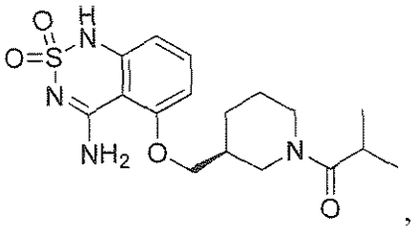
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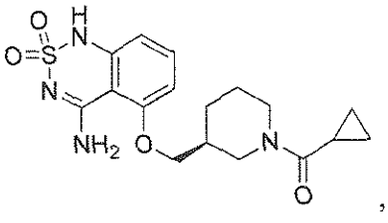
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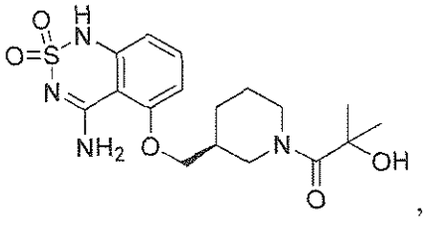
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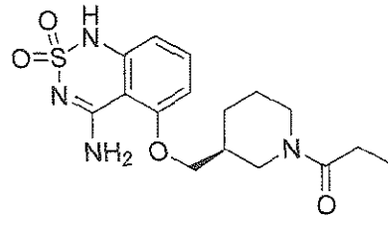
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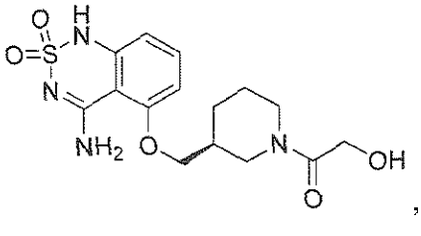
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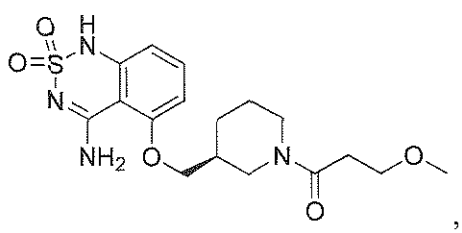
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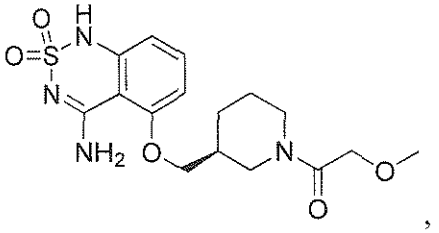
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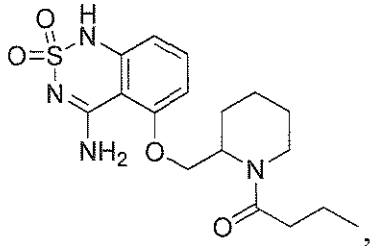
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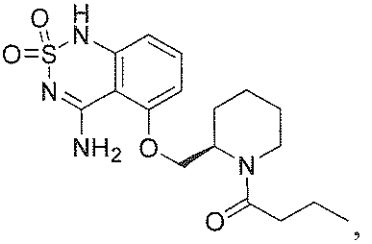
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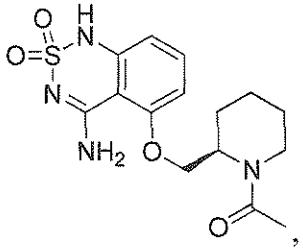
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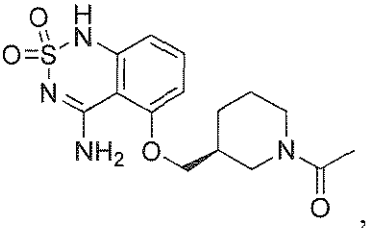
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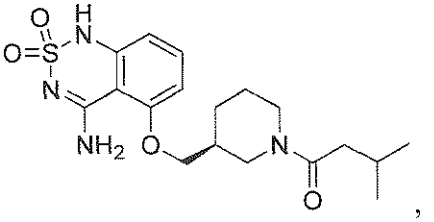
or a salt or solvate thereof.

52. The compound of Claim 32, wherein the compound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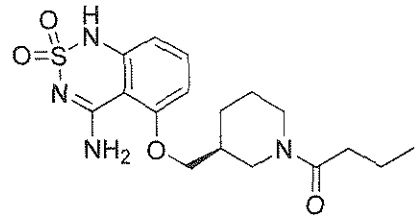
or a salt or solvate thereof.

53. The compound of Claim 32, wherein the compound is selected from the group consisting of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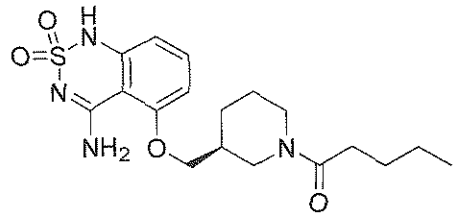
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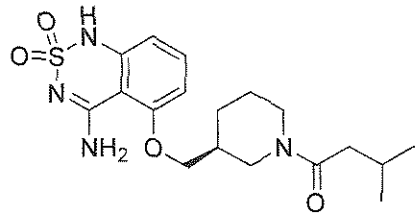
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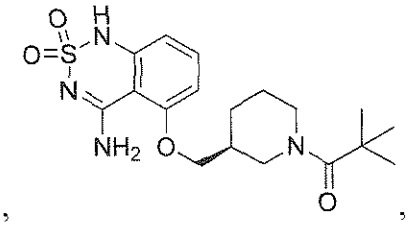
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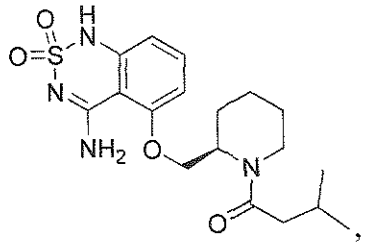
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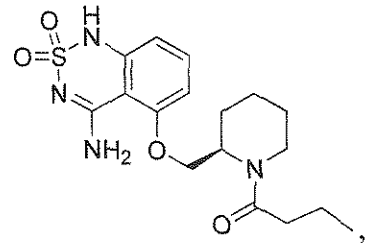
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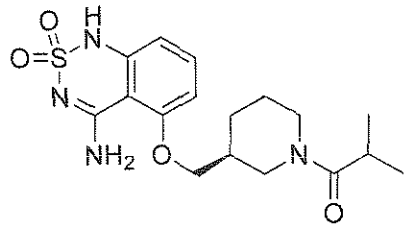
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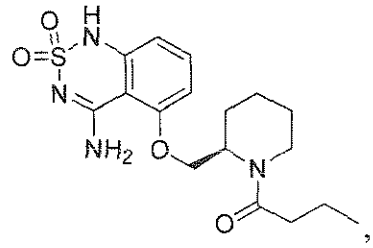
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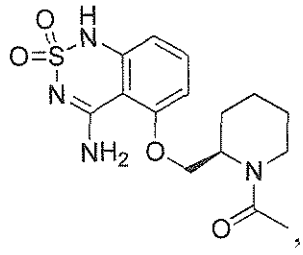
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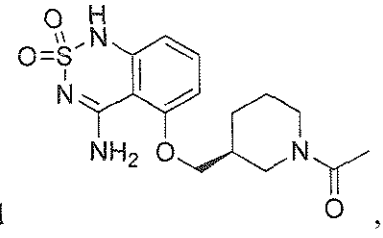
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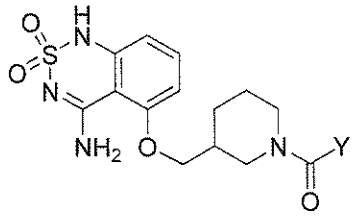
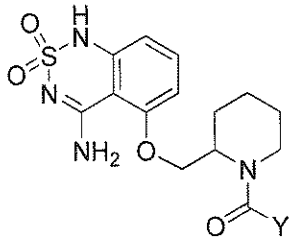
or a salt or solvate thereof.

54. A compound having structural Formula (Ib) or Formula (Id):


(Ib), or a salt thereof, or

(Id),

or a salt or solvate thereof; wherein

Y is alkyl, substituted alkyl, carbocyclyl, substituted carbocyclyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, aralkyl, substituted aralkyl, heteroarylalkyl, or substituted heteroarylalkyl,

wherein the substituents are selected from the group consisting of -$\mathbf{R}^a$, halo, =O, -O$\mathbf{R}^b$, -S$\mathbf{R}^b$, =S, -N$\mathbf{R}^c\mathbf{R}^c$, =N$\mathbf{R}^b$, =N-O$\mathbf{R}^b$, trihalomethyl, -CF_3, -CN, -OCN, -SCN, -C(O)$\mathbf{R}^b$, -C(S)$\mathbf{R}^b$, -C(N$\mathbf{R}^b$)R^b, -C(O)O$\mathbf{R}^b$, -C(S)O$\mathbf{R}^b$, -C(O)N$\mathbf{R}^c\mathbf{R}^c$, -C(N$\mathbf{R}^b$)N$\mathbf{R}^c\mathbf{R}^c$, -OC(O)$\mathbf{R}^b$, -OC(S)$\mathbf{R}^b$, -OC(O)O$\mathbf{R}^b$, -OC(S)O$\mathbf{R}^b$, -N$\mathbf{R}^b$C(O)$\mathbf{R}^b$, -N$\mathbf{R}^b$C(S)$\mathbf{R}^b$, -N$\mathbf{R}^b$C(O)O$\mathbf{R}^b$, -N$\mathbf{R}^b$C(S)O$\mathbf{R}^b$, -N$\mathbf{R}^b$C(O)N$\mathbf{R}^c\mathbf{R}^c$, -N$\mathbf{R}^b$C(N$\mathbf{R}^b$)$\mathbf{R}^b$ and -NR^bC(N$\mathbf{R}^b$)N$\mathbf{R}^c\mathbf{R}^c$, where $\mathbf{R}^a$ is selected from the group consisting of alkyl, cycloalkyl, cycloheteroalkyl, aryl, arylalkyl, heteroaryl and heteroarylalkyl; each $\mathbf{R}^b$ is independently hydrogen or $\mathbf{R}^a$; and each $\mathbf{R}^c$ is independently $\mathbf{R}^b$ or alternatively, the two $\mathbf{R}^c$s may be taken together with the nitrogen atom to which they are bonded form a 4-, 5-, 6- or 7-membered cycloheteroalkyl which may optionally include from 1 to 4 of the same or different additional heteroatoms selected from the group consisting of O (oxygen), N (nitrogen) and S (sulfur).

55. The compound of claim 54, wherein Y is carbocyclyl, substituted carbocyclyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, aralkyl, substituted aralkyl, heteroarylalkyl, or substituted heteroarylalkyl.

56. The compound of claim 54, wherein Y is a three to ten-membered carbocyclyl, or substituted three to ten-membered carbocyclyl.

57. The compound of claim 54, wherein Y is a six to fifteen-membered aryl, substituted six to fifteen-membered aryl, five to ten-membered heteroaryl, or substituted five to ten-membered heteroaryl.

58. The compound of claim 54, wherein Y is –(C1 to C3 alkylene)–aryl or –(C1 to C3 alkylene)–substituted aryl.

59. The compound of claim 54, wherein Y is –(C1 to C3 alkylene)–heteroaryl or –(C1 to C3 alkylene)–substituted heteroaryl.

60. The compound of claim 54, wherein Y is a five or six-membered heteroaryl, substituted five or six-membered heteroaryl, –(C1 to C3 alkylene)–(five or six-membered heteroaryl), or –(C1 to C3 alkylene)–(substituted five or six-membered heteroaryl).

61. The compound of claim 60, wherein Y is pyrrole, pyridine, pyrimidine, pyridazine, or pyrazine, each of which is optionally substituted.

62. The compound of claim 54, wherein Y is C1 to C12 alkyl.

63. The compound of claim 54, wherein Y is a three to seven-membered cycloalkyl, or substituted three to seven-membered cycloalkyl.

64. The compound of claim 63, wherein Y is cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, or cycloheptyl, each of which is optionally substituted.

65. The compound of claim 54, wherein Y is phenyl.

66. The compound of claim 54, wherein Y is five or six-membered monocyclic heteroaryl, or ten to twelve-membered bicyclic heteroaryl.

67. The compound of claim 54, wherein Y is selected from the group consisting of pyrrole, pyridine, pyrimidine, pyridazine, pyrazine, pyridine N-oxide, quinoline, imidazopyridine, and pyrazolopyridine.

68. The compound of claim 54, wherein Y is $-CH_2-$phenyl.

69. The compound of claim 28, wherein Y is pyrrole, pyridine, pyrimidine, pyridazine, or pyrazine.