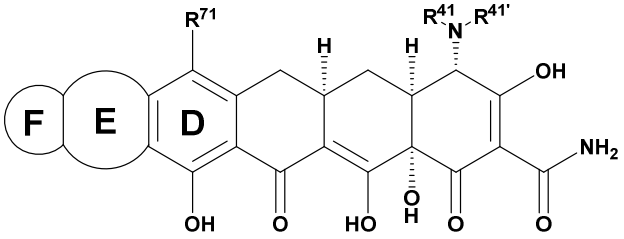
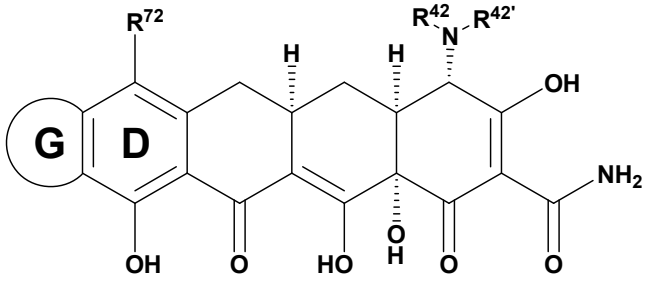
CLAIMS

1. A compound represented by any one of structural formulas (XIV) or (XV):



(XIV),



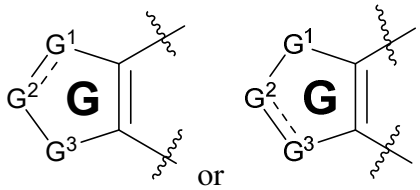
(XV),

or a pharmaceutically acceptable salt thereof, wherein:

ring E is a 4- or 5-member carbocyclyl;

ring F is a 5- or 6-member heterocyclyl that includes at least one nitrogen atom;

ring G is represented by any one of the following structural formulas



or

wherein "〰" represents the point of attachment of ring G to ring D, "------" is a single or a double bond, G^1, G^2, and G^3, each independently, is –CH=, -CH_2-, -N=, or –NH-, as valence permits, provided that when "------" is a single bond, then at least two of G^1, G^2, and G^3 are -NH-;

R^{71} and R^{72}, each independently, is selected from hydrogen, halo, -(C_1-C_6 alkyl), -OR^A, -C(O)$NR^BR^{B'}$, $NR^BR^{B'}$, $S(O)_{0-2}R^C$, -(C_0-C_6 alkylenyl)-(C_{3-12})carbocyclyl, and -(C_0-C_6 alkylenyl)-(4- to 13-member)heterocyclyl;

R^{41}, $R^{41'}$, R^{42}, and $R^{42'}$, each independently, is selected from hydrogen, -(C_1-C_6 alkyl), $S(O)_{1-2}R^C$, -(C_0-C_6 alkylenyl)-(C_{3-12})carbocyclyl, -(C_0-C_6 alkylenyl)-(4- to 13-member)heterocyclyl, -C(O)-(C_1-C_6 alkyl), and -C(O)-(C_1-C_6 alkyl)-NR^DR^E; or

R^{41} and $R^{41'}$, and, separately, R^{42} and $R^{42'}$, are taken together with the nitrogen atom to which they are commonly bound to form a 4-8 membered ring optionally comprising 1-2 additional heteroatoms independently selected from N, O and S;

each R^A is independently selected from hydrogen, -(C_1-C_6 alkyl), -(C_0-C_6 alkylenyl)-(C_{3-12})carbocyclyl, -(C_0-C_6 alkylenyl)-(4- to 13-member)heterocyclyl, -C(O)-(C_1-C_6 alkyl), -C(O)-(C_0-C_6 alkylenyl)-(C_{3-12})carbocyclyl, -C(O)-(C_0-C_6 alkylenyl)-(4- to 13-member)heterocyclyl, and -C(O)N(R^D)(R^E);

each R^B and each $R^{B'}$ is independently selected from hydrogen, -(C_1-C_6 alkyl), -(C_1-C_6 haloalkyl), -(C_0-C_6 alkylenyl)-(C_{3-12})carbocyclyl, -(C_0-C_6 alkylenyl)-(4- to 13-member)heterocyclyl, -$S(O)_{1-2}$-(C_1-C_6 alkyl), -$S(O)_{1-2}$-(C_0-C_6 alkylenyl)-(C_{3-12})carbocyclyl, -$S(O)_{1-2}$-(C_0-C_6 alkylenyl)-(4- to 13-member)heterocyclyl, -C(O)-(C_1-C_6 alkyl), -C(O)-(C_0-C_6 alkylenyl)-(C_{3-12})carbocyclyl, -C(O)H, -C(O)-(C_0-C_6 alkylenyl)-(4- to 13-member)heterocyclyl, and -C(O)-(C_0-C_6 alkylenyl)-N(R^D)(R^E);

each R^C is independently selected from -(C_1-C_6 alkyl), -(C_0-C_6 alkylenyl)-(C_{3-12})carbocyclyl and -(C_0-C_6 alkylenyl)-(4- to 13-member)heterocyclyl; and

each R^D and each R^E is independently selected from hydrogen, -(C_1-C_6 alkyl), -(C_0-C_6 alkylenyl)-(C_{3-12})carbocyclyl, and -(C_0-C_6 alkylenyl)-(4- to 13-member)heterocyclyl;

wherein:

any alkyl, or alkylenyl portion of R^{71}, R^{72}, R^{41}, $R^{41'}$, R^{42}, or $R^{42'}$ is optionally and independently substituted with one or more substituents independently selected from halo, =O, OR^A, $NR^BR^{B'}$, and $S(O)_{0-2}R^C$;

any alkyl or alkylenyl portion of R^A or R^C, is optionally and independently substituted with one or more fluoro;

rings E, F, and G, or any carbocyclyl or heterocyclyl portion of any of R^{71}, R^{72}, R^{41}, $R^{41'}$, R^{42}, or $R^{42'}$, or any ring formed by taking together R^{41} and $R^{41'}$ or R^{42} and $R^{42'}$ is optionally and independently substituted on a carbon atom with one or more substituents independently selected from halo, =O, C_1-C_4 fluoroalkyl, C_1-C_4

alkyl, -(C_0-C_6 alkylenyl)-(C_{3-12} carbocyclyl), -(C_0-C_6 alkylenyl)-(4- to 13-membered heterocyclyl), OR^A, -(C_0-C_6 alkylenyl)-$NR^BR^{B'}$, and $S(O)_{0-2}R^C$;

rings F and G, or any heterocyclyl portion of any of R^{71}, R^{72}, R^{41}, $R^{41'}$, R^{42}, or $R^{42'}$, or any ring formed by taking together R^{41} and $R^{41'}$ or R^{42} and $R^{42'}$ is optionally and independently substituted on a substitutable nitrogen atom with R^F;

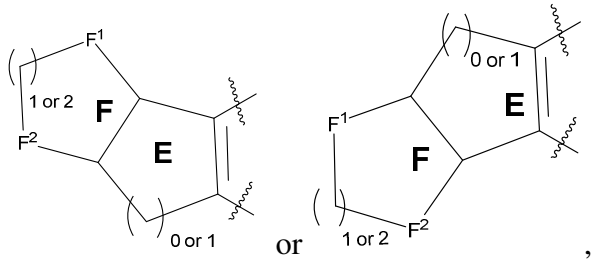
each R^F is independently selected from -(C_1-C_6 alkyl), -(C_1-C_6 haloalkyl), -(C_1-C_6 hydroxyalkyl), -(C_0-C_6 alkylenyl)-(C_{3-12})carbocyclyl, -(C_0-C_6 alkylenyl)-(4- to 13-member)heterocyclyl, -$S(O)_{1-2}$-(C_1-C_6 alkyl), -$S(O)_{1-2}$-(C_0-C_6 alkylenyl)-(C_{3-12})carbocyclyl, -$S(O)_{1-2}$-(C_0-C_6 alkylenyl)-(4- to 13-member)heterocyclyl, -C(O)-(C_1-C_6 alkyl), -C(O)-(C_0-C_6 alkylenyl)-(C_{3-12})carbocyclyl, -C(O)H, -C(O)-(C_0-C_6 alkylenyl)-(4- to 13-member)heterocyclyl, -(C_0-C_6 alkylenyl)-$C(O)_2$-(C_1-C_6 alkyl), -(C_1-C_6 alkylenyl)-$NR^BR^{B'}$ and -C(O)N(R^D)(R^E);

any carbocyclyl or heterocyclyl portion of R^A, R^B, $R^{B'}$, R^C, R^D, R^E, R^F, or any substituent of R^{71}, R^{72}, R^{41}, $R^{41'}$, R^{42}, or $R^{42'}$ is optionally and independently substituted on a carbon atom with one or more substituents independently selected from fluoro, chloro, C_1-C_4 alkyl, C_1-C_4 fluoroalkyl, -O-C_1-C_4 alkyl, -O-C_1-C_4 fluoroalkyl, =O, -OH, -NH_2, -NH(C_1-C_4 alkyl), and -N(C_1-C_4 alkyl)$_2$; and

any heterocyclyl portion of R^A, R^B, $R^{B'}$, R^C, R^D, R^E, R^F, or any heterocyclyl substituent of R^{71}, R^{72}, R^{41}, $R^{41'}$, R^{42}, or $R^{42'}$ is optionally substituted on a substitutable nitrogen atom with -C_1-C_4 alkyl, or -$S(O)_{1-2}$-(C_1-C_4 alkyl).

2. The compound of Claim 1, wherein:

ring E and ring F, together, are represented by any one of the following structural formulas:



,

wherein F^1 and F^2, for each occurrence independently, is selected from -CH_2- or -NR^0-, wherein R^0, for each occurrence independently, is H or a C1-C4 alkyl, and "〰" represents the point of attachment of ring E to ring D.

3. The compound of claim 1, wherein:

R^{41}, $R^{41'}$, R^{42}, or $R^{42'}$, each independently, is selected from hydrogen; -(C_1-C_6 alkyl), optionally substituted with one or more substituents independently selected from hydroxy and halo; -(C_3-C_6 cycloalkyl); -C(O)-(C_1-C_6 alkyl); -C(O)-(C_1-C_6 alkylenyl)-N(R^D)(R^E); and $S(O)_{1-2}R^C$; or

R^{41} and $R^{41'}$ or R^{42} and $R^{42'}$ are taken together with the nitrogen atom to which they are commonly bound to form a 4-6 membered ring optionally comprising 1-2 additional heteroatoms independently selected from N, O and S;

R^C is -(C_1-C_6 alkyl); and

each of R^D and R^E is independently selected from hydrogen and -(C_1-C_6 alkyl).

4. The compound of any one of claims 1 to 3, wherein:

R^{41}, $R^{41'}$, R^{42}, or $R^{42'}$, each independently, is selected from hydrogen, -(C_1-C_6 alkyl), -(C_3-C_6 cycloalkyl), -C(O)-(C_1-C_6 alkyl), -C(O)-(C_1-C_6 alkylenyl)-N(R^D)(R^E), and $S(O)_{1-2}R^C$;

R^C is -(C_1-C_6 alkyl); and

each of R^D and R^E is independently selected from hydrogen and -(C_1-C_6 alkyl).

5. The compound of any one of claims 1 to 4, wherein:

R^{41}, $R^{41'}$, R^{42}, or $R^{42'}$, each independently, is selected from hydrogen, methyl, ethyl, propyl, cyclopropyl, -C(O)CH_3, -C(O)$CH_2N(CH_3)_2$, and -$S(O)_2CH_3$.

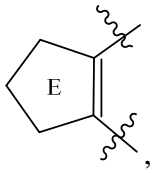
6. The compound of any one of claims 1 to 5, wherein

R^{71} and R^{72}, each independently, is selected from hydrogen; halo; -(C_1-C_6 alkyl), optionally substituted with one or more substituents independently selected from hydroxyl, halo, and -$NR^BR^{B'}$; -$NR^BR^{B'}$; -C(O)$NR^BR^{B'}$, -OR^A, -(C_0-C_6 alkylenyl)-(C_3-C_8)carbocyclyl, and -(C_0-C_6 alkylenyl)-(4- to 8-member)heterocyclyl, wherein R^A is C_1-C_6 alkyl optionally substituted with one or more fluoro.

7. The compound of claim 6, wherein R^{71} and R^{72}, each independently, is selected from hydrogen; halo; -(C_1-C_6 alkyl), optionally substituted with one or more halo; and -OR^A, wherein R^A is C_1-C_6 alkyl optionally substituted with one or more fluoro.

8. The compound of any one of claims 1 to 6, wherein R^{71} and R^{72}, each independently, is selected from hydrogen, fluoro, chloro, -CF_3, -OCH_3, -OCF_3, -$N(CH_3)_2$ and -$NHCH_3$.

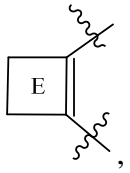
9. The compound of any one of claims 1 to 8, wherein ring E is represented by the following structural formula



,

wherein each "〰" represents a point of attachment of the ring E to the ring D.

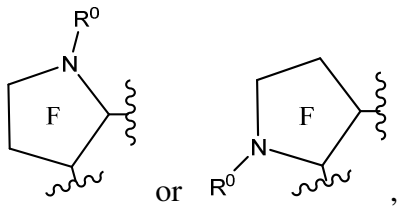
10. The compound of any one of claims 1 to 8, wherein ring E is represented by the following structural formula



,

wherein each "〰" represents a point of attachment of the ring E to the ring D.

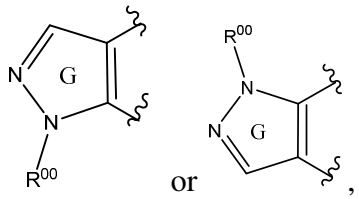
11. The compound of any one of claims 1 to 10, wherein ring F is represented by any one of the following structural formulas



,

wherein each "〰" represents a point of attachment of the ring F to the ring E, and wherein R^0, for each occurrence independently, is H or a C1-C4 alkyl.

12. The compound of any one of claims 1 to 8, wherein ring G is represented by any one of the following structural formulas:



wherein each "〰" represents a point of attachment of the ring G to the ring D, and wherein R^{00}, for each occurrence independently, is H or a C1-C4 alkyl.

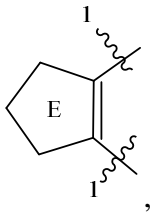
13. The compound of any one of claims 1 to 11, wherein:

R^{41}, $R^{41'}$, R^{42}, or $R^{42'}$, each independently, is H or a C1-C4 alkyl;

R^{71} and R^{72}, each independently, is F or $–CF_3$.

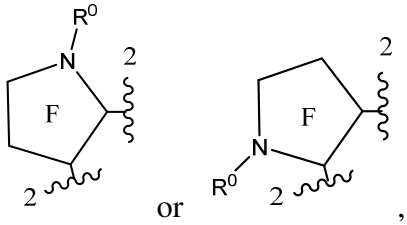
14. The compound of claim 1, wherein:

ring E is represented by the following structural formula



wherein each "1〰" represents a point of attachment or the ring E to the ring D.

ring F is represented by any one of the following structural formulas



wherein each "2〰" represents a point of attachment or the ring F to the ring E,

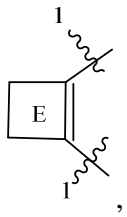
R^0, for each occurrence independently, is H or a C1-C4 alkyl;

R^{41}, $R^{41'}$, R^{42}, or $R^{42'}$, each independently, is H or a C1-C4 alkyl; and

R^{71} and R^{72}, each independently, is F or $–CF_3$.

15. The compound of claim 1, wherein:

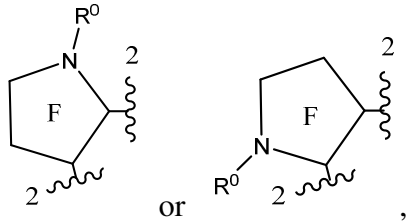
ring E is represented by the following structural formula



,

wherein each "1 ∿" represents a point of attachment of the ring E to the ring D.,

ring F is represented by any one of the following structural formulas



,

wherein each "2 ∿" represents a point of attachment of the ring F to the ring E,

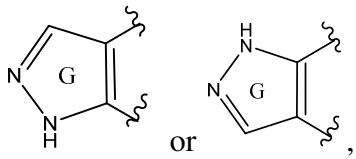
R^0, for each occurrence independently, is H or a C_1-C_4 alkyl;

R^{41}, $R^{41'}$, R^{42}, or $R^{42'}$, each independently, is H or a C_1-C_4 alkyl; and

R^{71} and R^{72}, each independently, is F or $–CF_3$.

16. The compound of claim 1, wherein:

ring G is represented by any one of the following structural formulas:



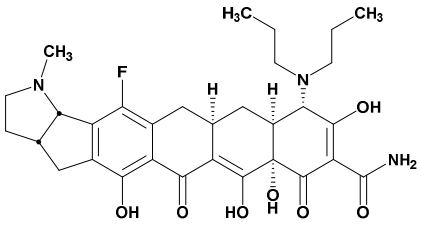
,

wherein each "∿" represents a point of attachment of the ring G to the ring D;

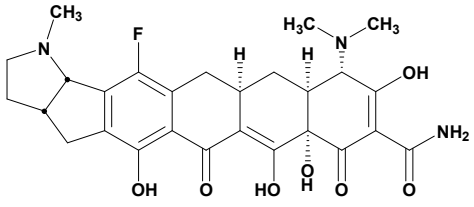
R^{41}, $R^{41'}$, R^{42}, or $R^{42'}$, each independently, is H or a C_1-C_4 alkyl; and

R^{71} and R^{72}, each independently, is F or $–CF_3$.

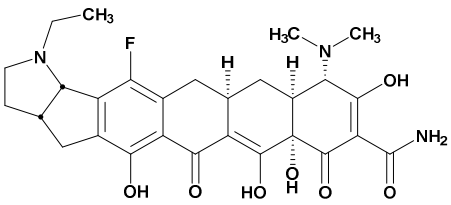
17. The compound of any one of claims 1 to 16, represented by any one of the following structural formulas, or a pharmaceutically acceptable salt thereof:



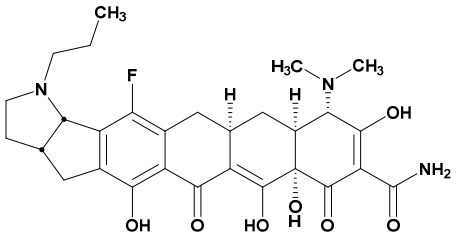
S5-9-7



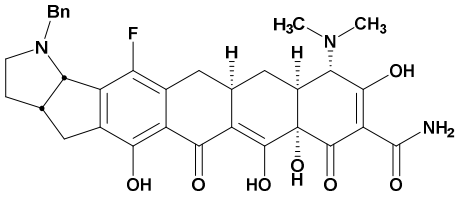
S5-9-2, diastereomers A and B



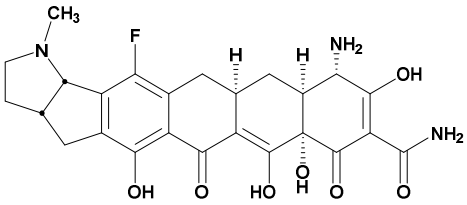
S5-9-3, diastereomers A and B



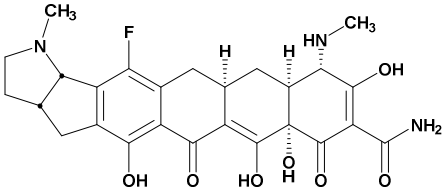
S5-9-4, diastereomers A and B



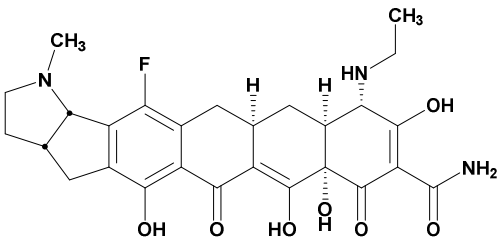
S5-9-5, diastereomers A and B



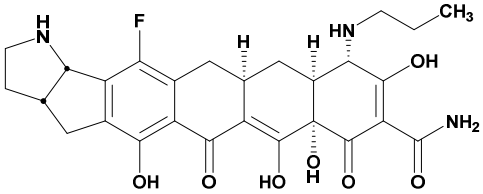
S5-9-10, diastereomers A and B



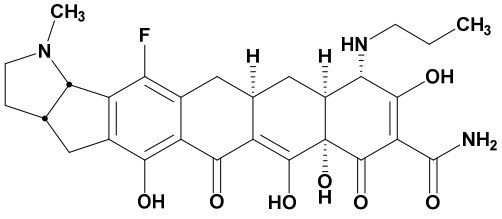
S5-9-9, diastereomers A and B



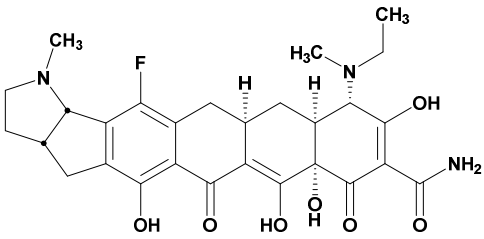
S5-9-11, diastereomers A and B



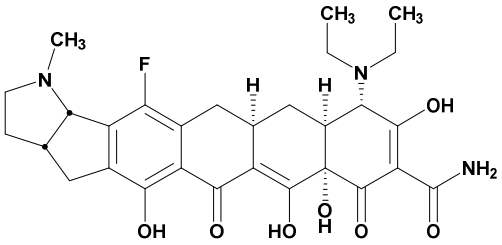
S5-9-8, diastereomer B



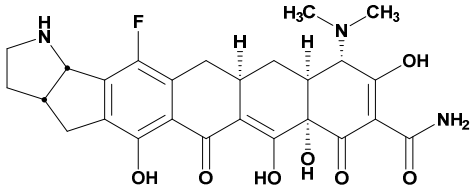
S5-9-6, diastereomers A and B



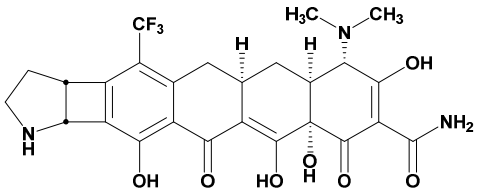
S5-9-12, diastereomers A and B



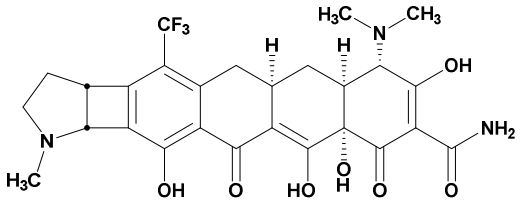
S5-9-13, diastereomers A and B



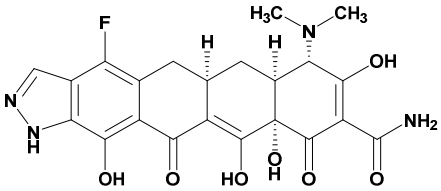
S5-9-1, diastereomers A and B



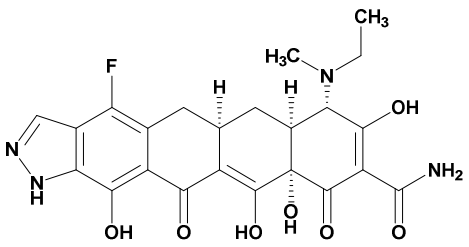
S13-9-1, diastereomers A and B



S13-9-2, diastereomers A and B

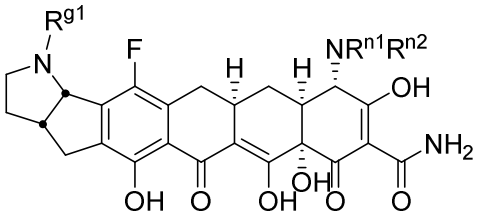


S18-3-1



S18-3-2 .

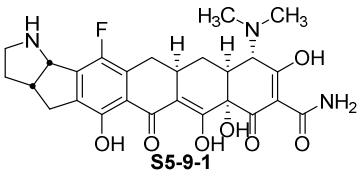
18. The compound of claim 1, represented by the following structural formula

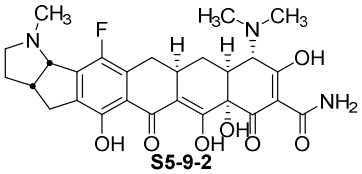


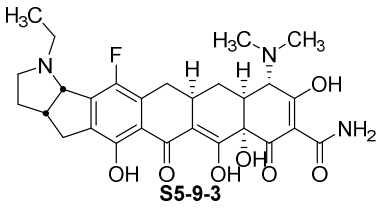
,

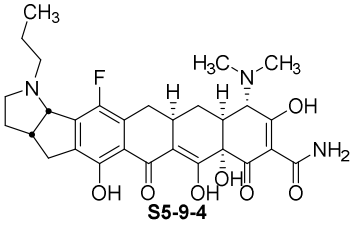
or a pharmaceutically acceptable salt thereof, wherein R^{g1}, R^{n1}, and R^{n2}, each independently, is H or a C_1-C_4 alkyl, optionally substituted with a phenyl.

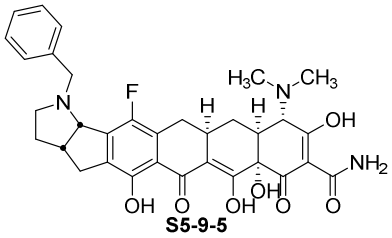
19. The compound of claim 18, wherein the compound is represented by any one of the following structural formulas:

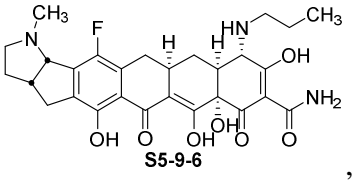

S5-9-1 ,

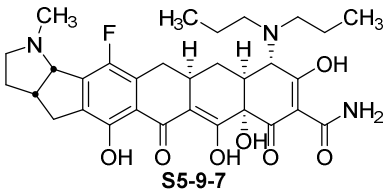

S5-9-2 ,

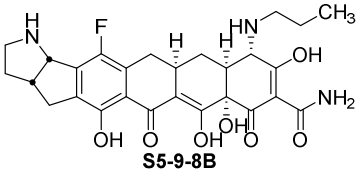

S5-9-3 ,

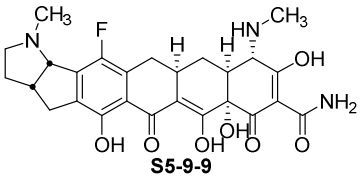

S5-9-4 ,

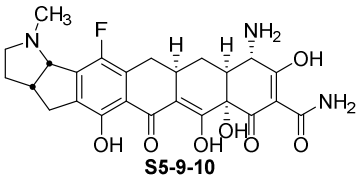

S5-9-5 ,

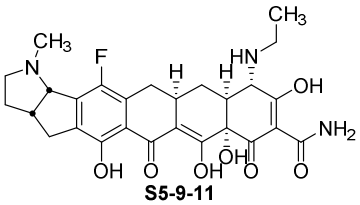

S5-9-6 ,

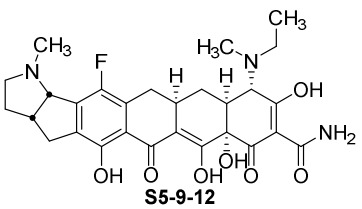

S5-9-7 ,

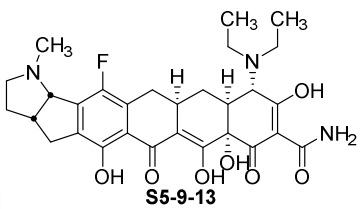

S5-9-8B ,


S5-9-9 ,


S5-9-10 ,

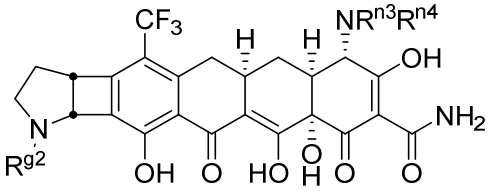

S5-9-11 ,


S5-9-12 , and


S5-9-13 ,

or a pharmaceutically acceptable salt of any of the foregoing.

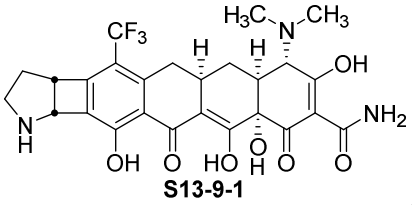
20. The compound of claim 1, represented by the following structural formula



or a pharmaceutically acceptable salt thereof, wherein

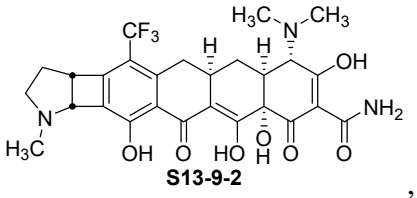
R^{g2}, R^{n3}, and R^{n4}, each independently, is H or a C_1-C_4 alkyl.

21. The compound of claim 20, represented by any one of the following structural formulas:



S13-9-1

,

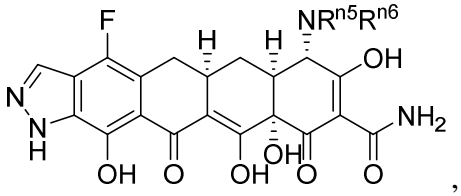


S13-9-2

,

or a pharmaceutically acceptable salt thereof.

22. The compound of claim 1, represented by the following structural formula

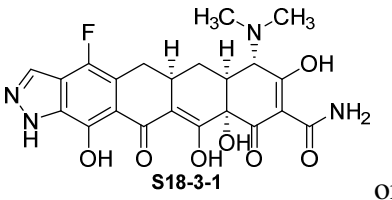


,

or a pharmaceutically acceptable salt thereof, wherein

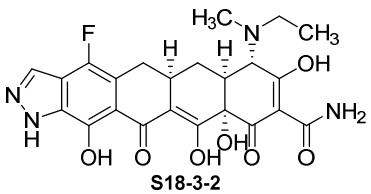
R^{n5} and R^{n6}, each independently, is H or a C_1-C_4 alkyl.

23. The compound of claim 20, represented by any one of the following structural formulas:



S18-3-1

or



S18-3-2

or a pharmaceutically acceptable salt of any of the foregoing.