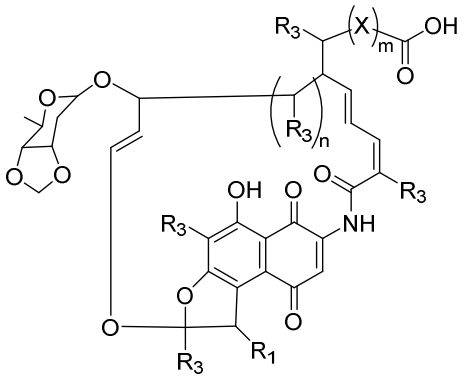
CLAIMS

What is claimed is:

1. A compound of formula (1):



(1)

wherein

R_1 is CHR_4R_5 or OR_6;

each occurrence of R_4 and R_5 independently is ~~represent~~ a hydrogen atom, a halogen atom, alkyl, cycloalkyl, aryl, or heteroaryl;

R_6 is a hydrogen atom, alkyl, cycloalkyl, aryl, or heteroaryl;

each occurrence of R_3 independently is ~~represents~~ a hydrogen atom, a halogen atom, alkyl, cycloalkyl, aryl, or heteroaryl, or OR_7;

R_7 ~~represents~~ is a hydrogen atom, alkyl, cycloalkyl, aryl, heteroaryl, or $C(=O)R_8$;

R_8 ~~represents~~ is alkyl, cycloalkyl, aryl, or heteroaryl;

X represents -O-, $-NR_9-$, $-CR_9R_{10}-$, or -C(=O)-;

R_9 and R_{10} each independently ~~represent~~ is a hydrogen atom, a halogen atom, alkyl, cycloalkyl, aryl, or heteroaryl;

m represents an integer from 1 to 6; and

n represents an integer from 4 to 10;

or a salt thereof.

2. The compound of claim 1, wherein R_1 ~~represents~~ is OR_6.

3. The compound of claim 1~~ or 2~~, wherein R_3~~,~~ ~~represents~~ independently is alkyl, OH, or $-OC(=O)CH_3$.

~~4. The compound of any one of claims 1-3, wherein each R_3 independently represents alkyl or OR_7.~~

4~~5~~. The compound of ~~any one of~~ claim~~s~~ 1~~-4~~, wherein each R_7 independently ~~represents~~ is a hydrogen atom or $C(=O)R_8$.

5~~6~~. The compound of any one of claims 1~~-5~~, wherein R_8 is alkyl.

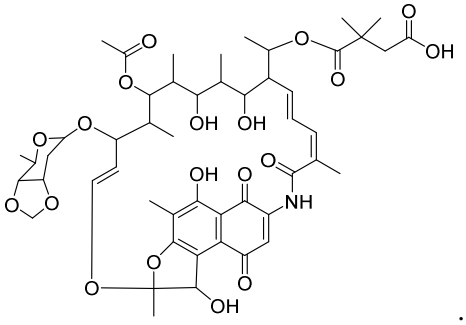
~~7. The compound of any one of claims 1-6, wherein each R_3 is independently selected from the group consisting of -OH, methyl, and -$OC(=O)CH_3$.~~

6~~8~~. The compound of ~~any one of~~ claim~~s~~ 1~~-7~~, wherein each occurrence of X ~~represents~~ is -O-, -CR_9R_{10}-, or -C(=O)-.

~~9. The compound of any one of claims 1-8, wherein each of R_9 and R_{10} are a hydrogen atom.~~

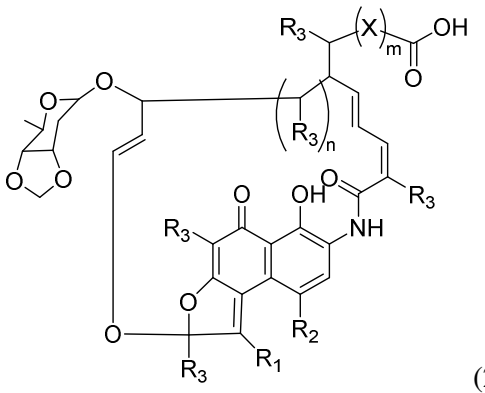
~~10. The compound of claim 1, wherein each occurrence of X is selected from the group consisting of -O-, -C(=O)-, -CH_2-, and -$C(CH3)_2$-.~~

7~~11~~. The compound of ~~any of~~ claim~~s~~ 1~~-10~~, wherein the compound is



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8~~12~~. A compound of formula (2):



(2)

wherein:

R_1 and R_2 each independently ~~represent~~ is CHR_4R_5, CR_4R_5, OR_6, or O, wherein R_1 and R_2 may optionally be joined to form a ring;

each occurrence of R_4 and R_5 independently ~~represent~~ is a hydrogen atom, a halogen atom, alkyl, alkylene, cycloalkyl, aryl, or heteroaryl;

each occurrence of R_6 independently ~~represent~~ is a hydrogen atom, alkyl, alkylene, cycloalkyl, aryl, or heteroaryl;

each occurrence of R_3 independently ~~represents~~ is a hydrogen atom, a halogen atom, alkyl, cycloalkyl, aryl, or heteroaryl, or OR_7;

R_7 ~~represents~~ is a hydrogen atom, alkyl, cycloalkyl, aryl, heteroaryl, or $C(=O)R_8$;

R_8 ~~represents~~ is alkyl, cycloalkyl, aryl, or heteroaryl;

X ~~represents~~ is O, NR_9, CR_9R_{10}, or C(=O);

R_9 and R_{10} each independently ~~represent~~ is a hydrogen atom, a halogen atom, alkyl, cycloalkyl, aryl, or heteroaryl;

m represents an integer from 1 to 6; and

n represents an integer from 4 to 10;

or a salt thereof.

9~~13~~. The compound of claim 8~~12~~, wherein R_1 and R_2 each independently ~~represent~~ are OR_6.

10~~14~~. The compound of claim 9~~13~~, wherein each R_6 independently ~~represents~~ is a hydrogen atom or alkyl.

11~~15~~. The compound of claim 8~~12~~, wherein R_1 and R_2 each independently ~~represent~~ is OR_6 and O, and R_1 and R_2 are joined to form a ring.

~~16. The compound of claim 15, wherein R_6 is alkylene.~~

~~17. The compound of any of claims 12, 14, or 15, wherein R_1 represents OCH_2 and R_2 represents O , and R_1 and R_2 are joined to form a ring.~~

12~~18~~. The compound of ~~any one of~~ claim~~s~~ 8~~12-17~~, wherein each R_3 independently represents alkyl, -OH, or $-OC(=O)CH_3$~~or OR_7~~.

19~~13~~. The compound of ~~any one of~~ claim~~s~~ 8~~12-18~~, wherein each R_7 independently ~~represents~~ is a hydrogen atom or $C(=O)R_8$.

14~~20~~. The compound of ~~any one of~~ claim~~s~~ 8~~12-19~~, wherein R_8 is alkyl.

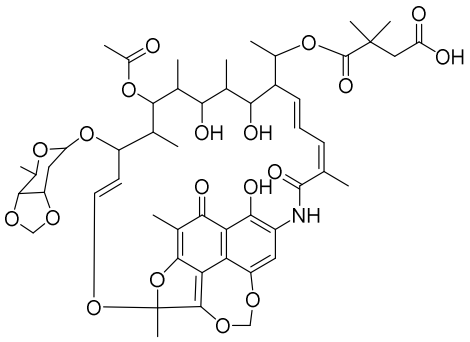
~~21. The compound of any one of claims 12-20, wherein each R_3 is independently selected from the group consisting of -OH, methyl, and $-OC(=O)CH_3$.~~

15~~22~~. The compound of ~~any one of~~ claim~~s~~ 8~~12-21~~, wherein each occurrence of X ~~represents~~ independently is -O-, $-CR_9R_{10}$-, or -C(=O)-.

16~~23~~. The compound of ~~any one of~~ claim~~s~~ 8~~12-22~~, wherein each occurrence of R_9 and R_{10} independently are a hydrogen atom or alkyl.

~~24. The compound of any one of claims 12-23, wherein each occurrence of X is selected from the group consisting of -O-, -C(=O)-, $-CH_2$-, and $-C(CH3)_2$-.~~

17~~25~~. The compound of ~~any one of~~ claim~~s~~ 8~~12~~–24, wherein the compound is



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26. The compound of any one of claims 1–25, wherein the compound is substantially pure.

27. The compound of any one of claims 1–25, wherein the compound is enantiomerically pure.

28. The compound of any one of claims 1–25, wherein the compound has a lower MIC (μg/mL) against rifamycin-resistant bacteria than rifamycin.

18~~29~~. A pharmaceutical composition comprising a therapeutically effective amount of a compound of ~~any one of~~ claim~~s~~ 1–~~28~~ and a pharmaceutically acceptable excipient.

30. The pharmaceutical composition of claim 29, further comprising a pharmaceutical carrier.

31. The pharmaceutical composition of claim 29 or 30, wherein the pharmaceutical composition is formulated as an instant release, delayed release, or extended release composition, or combination thereof.

19~~32~~. A method of ~~preventing or~~ reducing the growth or proliferation of a microorganism, wherein the method comprises contacting the microorganism with a composition comprising a compound of ~~any one of~~ claim~~s~~ 1–~~31~~.

33. The method of claim 32, wherein the microorganism is a bacterium.

34. The method of claim 33, wherein the bacterium is resistant to at least on antibiotic.

35. The method of claim 34, wherein the bacterium is resistant to rifamycin.

36. The method of claim 35, wherein the bacterium has at least one point mutation that confers antibiotic resistance.

37. The method of any of claims 33-36, wherein the bacterium has one or more of the following mutations of one or more amino acids: (1) serine to leucine; (2) histidine to tyrosine; (3) or asparagine to tyrosine.

38. A method of treating or preventing a bacterial infection in a subject, wherein the method comprises administering to the subject a composition comprising a compound of any one of claims 1-31.

39. The method of claim 38, wherein the bacterial infection is an infection of *Staphylococcus aureus, Staphylococcus epidermidis, Listeria monocytogenes, Salmonella enterica, Pseudomonas aeruginosa, Proteus mirabills, Enterococcus faecium, Acinetobacter baumannii, Myobacterium tuberculosis*.

40. The method of claim 39, wherein the bacterial infection is resistant to rifamycin.

41. The method of claim 40, wherein the bacterial infection is caused by a bacterium that has at least one point mutation that confers antibiotic resistance.

42. The method of claim 41, wherein the bacterium has one or more of the following mutations of one or more amino acids: (1) serine to leucine; (2) histidine to tyrosine; (3) or asparagine to tyrosine.

43. The method of any one of claims 32-42, wherein the method further comprises administering to the subject an additional therapeutic agent.

~~44. A compound according to claims 1-31 for use in treating a bacterial infection.~~

~~45. The compound for use according to claim 44, wherein the bacterial infection is an infection of *Staphylococcus aureus, Staphylococcus epidermidis, Listeria monocytogenes, Salmonella enterica, Pseudomonas aeruginosa, Proteus mirabills, Enterococcus faecium, Acinetobacter baumannii,* and *Mycobacterium tuberculosis*.~~

~~46. The compound for use according to claim 45, wherein the bacterial infection is resistant to rifamycin.~~

~~47. The compound for use according to claim 46, wherein the bacterial infection is caused by a bacterium that has at least one point mutation that confers antibiotic resistance.~~

~~48. The compound for use according to claim 47, wherein the bacterium has one or more of the following mutations of one or more amino acids: (1) serine to leucine; (2) histidine to tyrosine; (3) or asparagine to tyrosine.~~