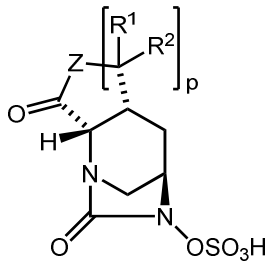
CLAIMS

1. A compound of Formula (A):



wherein p is 1 or 2;

R^1 and R^2 are independently selected from H and C_1-C_4 alkyl optionally substituted with up to three groups selected from halo, CN, -OR, oxo, and –NRR';

Z is NR^3 or N-OR^3;

R^3 is independently selected at each occurrence from H, Cy, and C_1-C_4 alkyl optionally substituted with up to three groups selected from Cy, halo, CN, -OR, and –NRR';

Cy is a C_3-C_6 cycloalkyl ring or 4-6 membered heterocyclic ring containing one or two heteroatoms selected from N, O and S as ring members, and Cy is optionally substituted with up to three groups selected from oxo, halo, C_1-C_2 alkyl, CN, -OR, and –NRR'; and

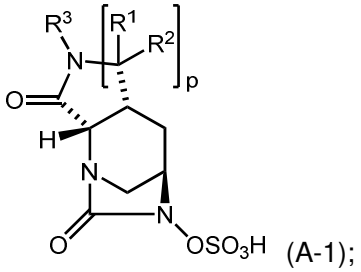
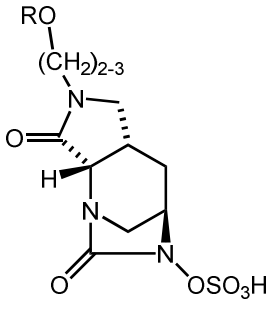
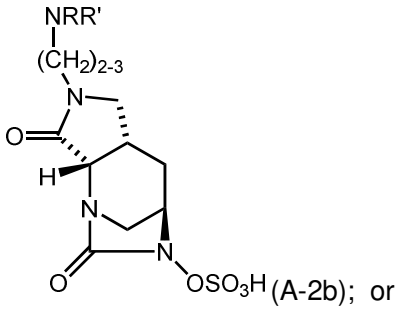
R and R' are independently selected from H and C_1-C_4 alkyl optionally substituted with one or two groups selected from halo, -OH, -CN, -O-(C_1-C_4 alkyl), oxo, -NH_2, -NH(C_1-C_4 alkyl), and –N(C_1-C_4 alkyl)$_2$,

or R and R' taken together with the nitrogen atom to which both are attached can form a ring selected from piperidine, morpholine, pyrrolidine, and azetidine,

wherein the ring is optionally substituted with one or two groups selected from halo, C_1-C_2 alkyl, -OH, -CN, -O-(C_1-C_4 alkyl), oxo, -NH_2, -NH(C_1-C_4 alkyl), and –N(C_1-C_4 alkyl)$_2$;

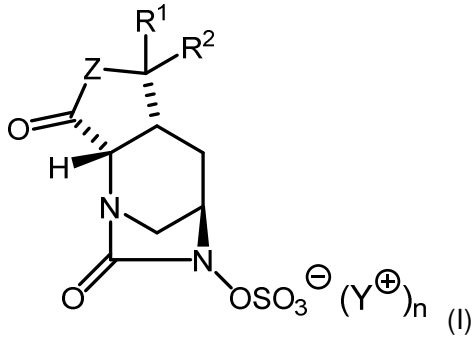
or a salt or zwitterionic form thereof.

2. The compound of claim 1, which is a compound of one of the following formulas:


(A-1);

(A-2a);

(A-2b); or

or a salt or zwitterionic form thereof.

3. A compound of claim 1, which is a compound of Formula (I):


(I)

wherein:

R^1 and R^2 are independently selected from H and C_1-C_4 alkyl optionally substituted with up to three groups selected from halo, CN, -OR, oxo, and –NRR';

Z is NR^3 or N-OR^3;

R^3 is independently selected at each occurrence from H, Cy, and C_1-C_4 alkyl optionally substituted with up to three groups selected from Cy, halo, CN, -OR, and –NRR';

Cy is a C_3-C_6 cycloalkyl ring, or 4-6 membered heterocyclic ring containing one or two heteroatoms selected from N, O and S as ring members, and Cy is optionally substituted with up to three groups selected from oxo, halo, C_1-C_2 alkyl, CN, -OR, and –NRR'; and

R and R' are independently selected from H and C_1-C_4 alkyl optionally substituted with one or two groups selected from halo, -OH, -CN, -O-(C_1-C_4 alkyl), oxo, -NH_2, -NH(C_1-C_4 alkyl), and –N(C_1-C_4 alkyl)$_2$,

or R and R' taken together with the nitrogen atom to which both are attached can form a ring selected from piperidine, morpholine, pyrrolidine, and azetidine, wherein the ring is optionally substituted with one or two groups selected from halo, C_1-C_2 alkyl, -OH, -CN, -O-(C_1-C_4 alkyl), oxo, -NH_2, -NH(C_1-C_4 alkyl), and –N(C_1-C_4 alkyl)$_2$;

Y is a cationic group;

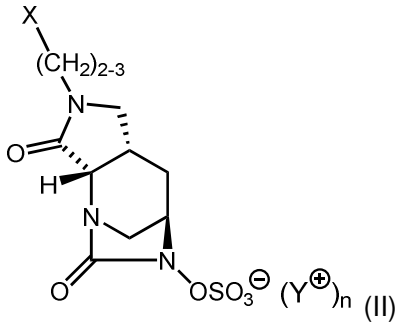
n is 0 or 1; and

when n is 0 the compound of Formula I is in a zwitterionic form.

4. The compound of claim 1 or claim 3, wherein Z is NR^3, and R^3 is H or C_1-C_4 alkyl optionally substituted with –OR or –NRR', or a salt or zwitterionic form thereof, and wherein R^3 particularly is (i) C_1-C_2 alkyl optionally substituted with –OR or –NRR', or a salt or zwitterionic form thereof, or (ii) H, or a salt or zwitterionic form thereof.

5. The compound of any one of claims 1-3, wherein R^1 and R^2 are both H, or a salt or zwitterionic form thereof.

6. The compound of claim 1 or 3, which has the structure:

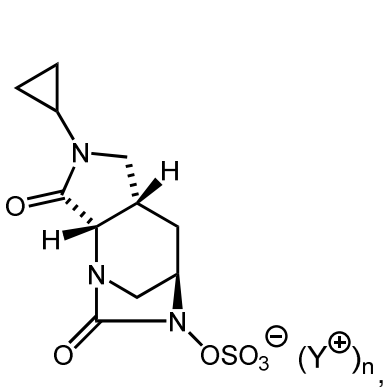
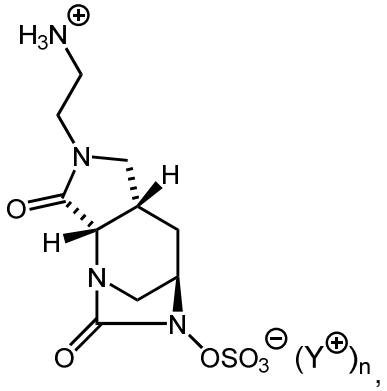
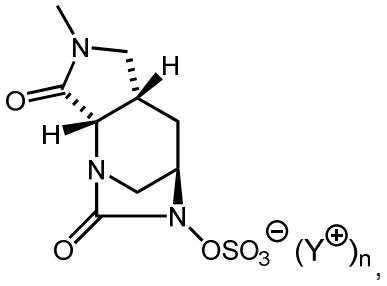
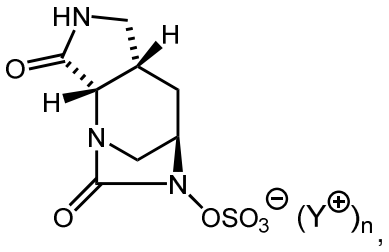
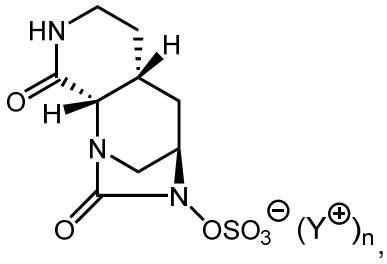
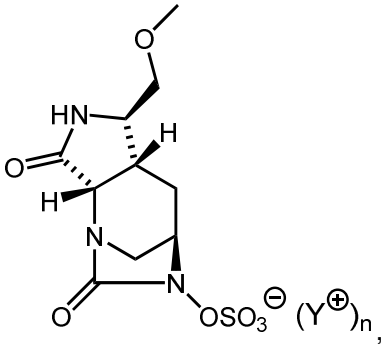
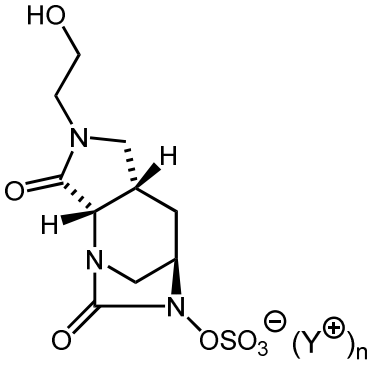
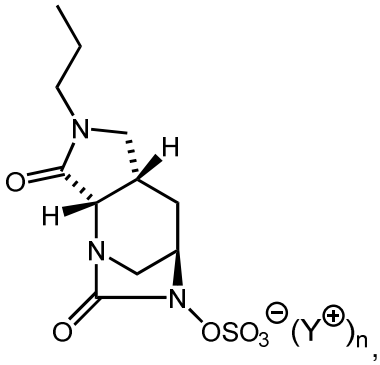


(II)

wherein X is –OR or –NRR';

as a salt or zwitterionic form thereof.

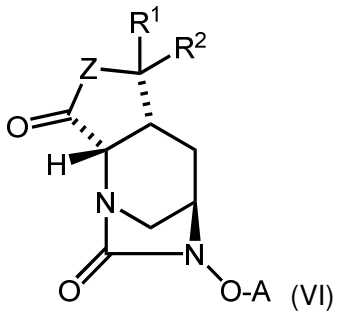
7. The compound of claim 1 or 3, which is selected from:








and

, and the salt or zwitterionic forms thereof.

8. The compound of one of claims 1-3, wherein n is 1 and Y is selected from sodium, potassium, ammonium, calcium, magnesium, iron, silver, zinc, and copper, particularly from sodium.

9. The compound of any one of claims 1-3, which is in a pharmaceutically acceptable salt or zwitterionic form.

10. A compound of Formula (VI):



(VI)

wherein:

R^1 and R^2 are independently selected from H and C_1-C_4 alkyl optionally substituted with up to three groups selected from halo, CN, -OR, oxo, and –NRR';

Z is NR^3 or N-OR^3;

R^3 is independently selected at each occurrence from H, Cy, and C_1-C_4 alkyl optionally substituted with up to three groups selected from Cy, halo, CN, -OR, and –NRR';

Cy is a C_3-C_6 cycloalkyl ring or 4-6 membered heterocyclic ring containing one or two heteroatoms selected from N, O and S as ring members, and Cy is optionally substituted with up to three groups selected from oxo, halo, C_1-C_2 alkyl, CN, -OR, and –NRR'; and

R and R' are independently selected from H and C_1-C_4 alkyl optionally substituted with one or two groups selected from halo, C_1-C_2 alkyl, -OH, -CN, -O-(C_1-C_4 alkyl), oxo, $-NH_2$, -NH(C_1-C_4 alkyl), and –N(C_1-C_4 alkyl)$_2$,

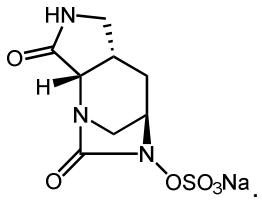
or R and R' taken together with the nitrogen atom to which both are attached can form a ring selected from piperidine, morpholine, pyrrolidine, and azetidine,

wherein the ring is optionally substituted with one or two groups selected from halo, C_1-C_2 alkyl, -OH, -CN, -O-(C_1-C_4 alkyl), oxo, $-NH_2$, -NH(C_1-C_4 alkyl), and –N(C_1-C_4 alkyl)$_2$;

A is H or $–CH_2$-Ph, where Ph represents phenyl optionally substituted with one or two groups selected from halo, C_1-C_4 alkyl, C_1-C_4 alkoxy;

or a salt thereof.

11. The compound of the formula (VII):



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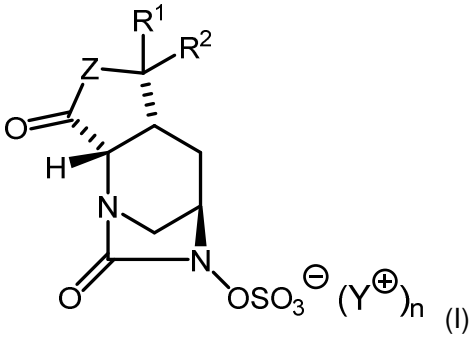
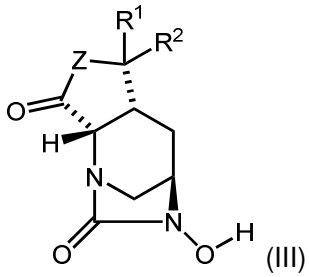
12. The compound of claim 11 in crystalline form,
which particularly exhibits an endotherm on differential scanning calorimetry between 283 °C and 350 °C and
which is optionally characterized by XRPD peaks at diffraction angles (2Theta) of 8.3 and 16.6 degrees, optionally further characterized by one or more additional XRPD peaks at diffraction angles (2Theta) of 25.1 or 31.3 degrees, optionally further characterized by one or more additional XRPD peaks at diffraction angles (2Theta) of 27.4 or 28.7 degrees and optionally further characterized by additional XRPD peaks at diffraction angles (2Theta) of 19.5 degrees or 21.7 degrees.

13. A process to make a compound of Formula (I),



(I)

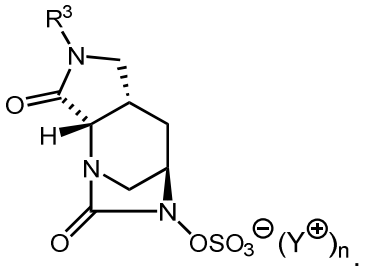
according to claim 3;
wherein the process comprises contacting a compound of Formula (III)



(III)

wherein Z, R^1 and R^2 and R^3 are as defined in claim 3, particularly
wherein Z is NR^3, and R^3 is H or C_1-C_2 alkyl optionally substituted with –OR or –NRR', with a sulfonylating agent in the presence of a base,

14. The process of claim 13, wherein the compound of Formula (I) is of the formula



and wherein R^3 particularly is H.

15. A pharmaceutical composition comprising a compound of any one of claims 1 to 12 and at least one pharmaceutically acceptable excipient.

16. A compound according to any one of claims 1 to 12 for use in therapy.

17. A compound according to any one of claims 1-12 for use in the treatment of a bacterial infection, particularly in the treatment of a Gram-negative bacterial infection, more particularly in the treatment of a Gram-negative bacterial infection caused by a species of *Citrobacter, Enterobacter, Escherichia, Klebsiella, Morganella, Moraxella, Providencia, Clostridium, Pseudomonas, Proteus, Salmonella, Serratia, Acinetobacter, Bacteroides, Prevotella, Campylobacter, Neisseria, Enterococcus* or *Stenotrophomonas*.

18. A pharmaceutical combination, comprising a compound according to any of claims 1 to 12 and a beta-lactam antibiotic.

19. The pharmaceutical combination of claim 18 for use in the treatment of a Gram-negative bacterial infection, wherein the compound of Formula (A) particularly is administered in an amount effective to potentiate the antibacterial activity of the beta-lactam antibiotic.

20. The pharmaceutical combination of claim 18 for use in the treatment of a bacterial infection which is a nosocomial pneumonia, an intraabdominal infection, or a urinary tract infection caused by a species of Enterobacteriaceae or *Pseudomonas*.