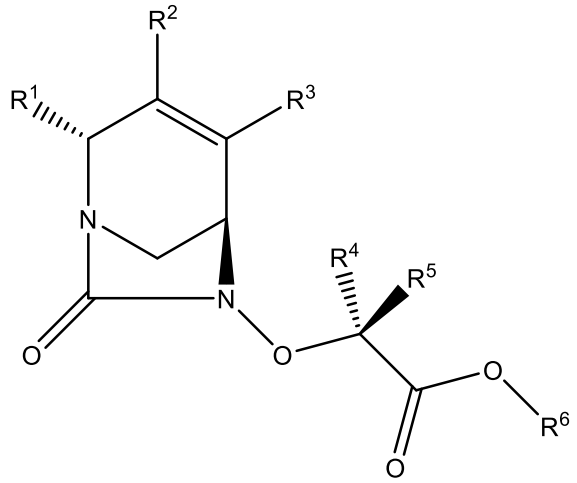
CLAIMS

1. A compound according to Formula (I):



or a pharmaceutically acceptable salt thereof, wherein:

R^1 is –C(O)NR^7R^8, -CN, phenyl, a 5-6 membered heteroaryl, -C(O)NR'NR'C(O)R^9, -C(O)NR'OR^{10}, or a C_1-C_6 alkyl group, wherein the alkyl group is substituted with one to three groups selected from halo, C_1-C_3 alkoxy, -OH, -CN, –NR^7R^8, -NR^7C(O)R^9, a 5-6 membered heteroaryl and a 5-7 membered heterocyclyl, and wherein the phenyl and heteroaryl represented by R^1 are optionally and independently substituted with 1-3 groups selected from halo, -OH, C_1-C_3 alkoxy, -CN, –NR^7R^8, and -CONR^7R^8;

R^2 and R^3 are independently selected from hydrogen, halo, C_1-C_3 alkyl, and C_3-C_6 cycloalkyl;

R^4 and R^5 are independently selected from hydrogen, halo, -CN, -CO_2R^9, C_1-C_3 alkyl, and C_1-C_3 haloalkyl;

R^6 is hydrogen, C_1-C_{12} alkyl, C_1-C_4 alkyl-C_1-C_3 alkoxy-(NR'C_1-C_6 alkyl)-C_1-C_3 alkoxy, C_1-C_4 alkyl-C_1-C_3 alkoxy-C_1-C_3 alkoxy, C_2-C_{12} alkenyl, C_3-C_{10} cycloalkyl, a 5-6 membered heteroaryl and a 5-7 membered heterocyclyl, wherein the alkyl, alkenyl, cycloalkyl, heteroaryl and heterocyclyl are optionally and independently substituted with 1-6 groups selected from a carboxyl, halo, C_1-C_6 alkoxy, C_1-C_6 alkyl and phenyl;

each R^7 and R^8 are independently hydrogen, C_1-C_3 alkyl, C_1-C_3 alkoxy, phenyl, C_3-C_6 cycloalkyl, 4-7 membered heterocyclyl, or 5-6 membered heteroaryl, wherein the alkyl, alkoxy, phenyl, cycloalkyl, heterocyclyl or heteroaryl represented by R^7 or R^8 is optionally and independently substituted with 1-6 groups selected from a 5-6 membered heterocyclyl optionally substituted with one or two –F atoms, carboxyl or –CO(OC_1-$_6$ alkyl), 5-6 membered heteroaryl, -CN, -OH, C_1-C_3 alkyl optionally substituted with –NH_2 or –OH, C_1-

C_3 haloalkyl, C_1-C_3 haloalkoxy, C_1-C_3 alkoxy -NHCO(C_1-C_3alkyl), -NHCO(C_1-C_3alkoxy), -S(O)$_2$NR'R'', -NHS(O)$_2$NR'R'', -NHS(O)$_2$(C_1-C_3alkyl), -NR'R'', and -C(O)NR'R'';

each R^9 is C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_1-C_6 haloalkoxy or C_1-C_6 alkoxy;

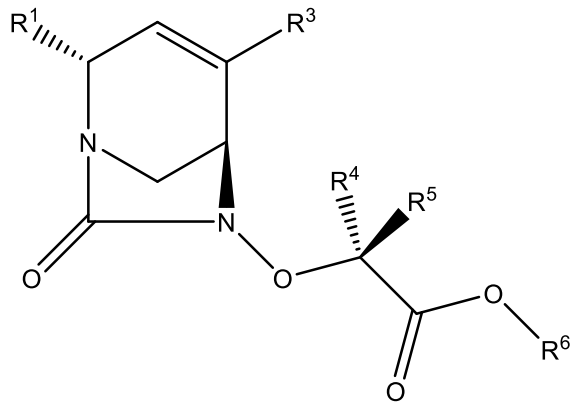
each R^{10} is a C_1-C_3 alkyl optionally substituted with 1-6 groups selected from a 5-6 membered heterocyclyl optionally substituted with one or two –F atoms, carboxyl or –CO(OC_1-$_6$ alkyl), a C_3-C_6 cycloalkyl, a 5-6 membered heteroaryl, -CN, -OH, -NHCO(C_1-C_3 alkyl), -NHCO(C_1-C_3 alkoxy), -S(O)$_2$NR'R'', -NHS(O)$_2$NR'R'', -NHS(O)$_2$(C_1-C_3 alkyl), -NR'R'', or -C(O)NR'R''; and

each R' and R'' is independently hydrogen, methyl, ethyl or propyl; or R' and R'' are taken together with the nitrogen to which they are attached to form a 5-6 membered heterocyclyl;

provided that at least one of R^2 and R^3 is other than hydrogen.

2. The compound of claim 1 or a pharmaceutically acceptable salt thereof, wherein R^6 is C_1-C_{12} alkyl, C_1-C_4 alkyl-C_1-C_3 alkoxy-(NR'C_1-C_6 alkyl)-C_1-C_3 alkoxy, C_1-C_4 alkyl-C_1-C_3 alkoxy-C_1-C_3 alkoxy, C_2-C_{12} alkenyl, C_3-C_{10} cycloalkyl, a 5-6 membered heteroaryl and a 5-7 membered heterocyclyl, wherein the alkyl, alkenyl, cycloalkyl, heteroaryl and heterocyclyl are optionally and independently substituted with 1-6 groups selected from a carboxyl, halo, C_1-C_6 alkoxy, C_1-C_6 alkyl and phenyl.

3. The compound of claim 1 or 2, according to formula (III):

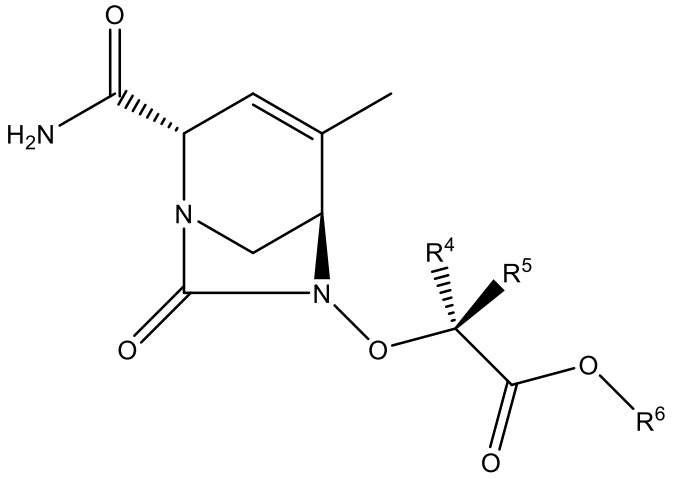


or a pharmaceutically acceptable salt thereof.

4. The compound according to any one of claims 1 to 3 or a pharmaceutically acceptable salt thereof, wherein R^3 is C_1-C_3 alkyl.

5. The compound of any one of claims 1 to 4 or a pharmaceutically acceptable salt thereof, wherein R^1 is $–C(O)NR^7R^8$.

6. The compound of claim 3, according to formula (V):



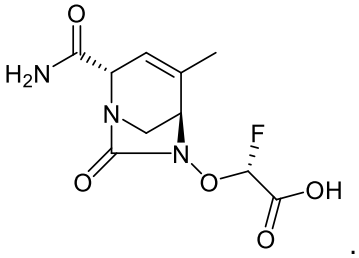
or a pharmaceutically acceptable salt thereof.

7. The compound of any one of claims 1 to 6 or a pharmaceutically acceptable salt thereof, wherein R^6 is C_1-C_{12} alkyl, such as wherein R^6 is ethyl, isopropyl, 2-butyl or isopentyl.

8. The compound according to any one of claims 1 to 7 or a pharmaceutically acceptable salt thereof, wherein R^4 and R^5 are independently H, methyl or fluoro.

9. The compound according to claim 8 or a pharmaceutically acceptable salt thereof, wherein one of R^4 and R^5 is hydrogen, and the other is fluoro.

10. The compound according to claim 1, or a pharmaceutically acceptable salt thereof, wherein the compound is of the formula:



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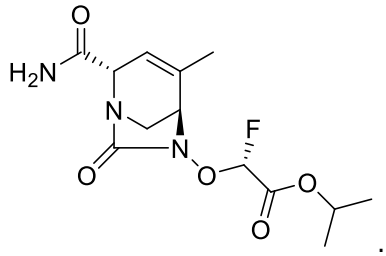
11. The compound according to claim 1, or a pharmaceutically acceptable salt thereof, wherein the compound is of the formula:



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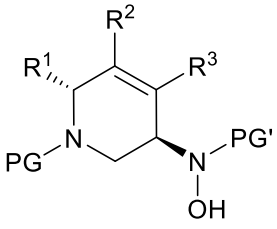
12. A pharmaceutical composition comprising a compound as claimed in any one of claims 1 to 11, or a pharmaceutically acceptable salt thereof, and at least one pharmaceutically acceptable carrier, diluent or excipient.

13. The pharmaceutical composition according to claim 12, further comprising a beta-lactam antibiotic, such as cefpodoxime proxetil or cefuroxime axetil.

14. Use of the compound according to any one of claims 1 to 11 or a pharmaceutically acceptable salt thereof in the manufacture of a medicament for the treatment of a bacterial infection in a subject in need thereof, such as wherein the bacterial infection is selected from the group consisting of complicated urinary tract infection, uncomplicated urinary tract infection, kidney infection, lower respiratory tract infection, hospital-acquired bacterial pneumonia (HAP), pneumonia, acute bacterial prostatitis, acute bacterial skin and soft tissue infection, sepsis, intra-abdominal infection and diabetic foot infection, such as wherein the compound is to be administered in combination with a beta-lactam antibiotic such as cefpodoxime proxetil or cefuroxime axetil.

15. A process for forming a compound of the formula **VI**:

 (**VI**);

or a salt thereof, wherein

R^1 is $–C(O)NR^7R^8$, $–C(O)OR^7$, $–CH_2OR^7$, -CN, phenyl, a 5-6 membered heteroaryl, $-C(O)NR'NR'C(O)R^9$, $-C(O)NR'OR^{10}$, or a C_1-C_6 alkyl group, wherein the alkyl group is

substituted with one to three groups selected from halo, C_1-C_3 alkoxy, -OH, -CN, $–NR^7R^8$, $-NR^7COR^9$, a 5-6 membered heteroaryl and a 5-7 membered heterocyclyl, and wherein the phenyl and heteroaryl represented by R^1 are optionally and independently substituted with 1-3 groups selected from halo, -OH, C_1-C_3 alkoxy, -CN, $-NR^7R^8$, and $-CONR^7R^8$;

R^2 and R^3 are each independently selected from hydrogen, halo, C_1-C_3 alkyl, and C_3-C_6 cycloalkyl, provided that at least one of R^2 and R^3 is other than hydrogen;

each R^7 and R^8 are independently hydrogen, C_1-C_3 alkyl, C_1-C_3 alkoxy, phenyl, C_3-C_6 cycloalkyl, 4-7 membered heterocyclyl, or 5-6 membered heteroaryl, wherein the alkyl, alkoxy, phenyl, cycloalkyl, heterocyclyl or heteroaryl represented by R^7 or R^8 is optionally and independently substituted with 1-6 groups selected from a 5-6 membered heterocyclyl optionally substituted with one or two –F atoms, carboxyl or $–CO(OC_{1-6}$ alkyl), 5-6 membered heteroaryl, -CN, -OH, C_1-C_3 alkyl optionally substituted with $–NH_2$ or –OH, C_1-C_3 haloalkyl, C_1-C_3 haloalkoxy, C_1-C_3 alkoxy $-NHCO(C_1$-C_3alkyl), $-NHCO(C_1$-C_3alkoxy), $-S(O)_2NR'R''$, $-NHS(O)_2NR'R''$, $-NHS(O)_2(C_1$-C_3alkyl), -NR'R'', and -C(O)NR'R'';

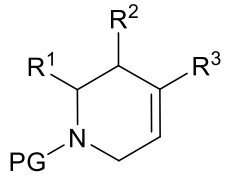
each R^9 is C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_1-C_6 haloalkoxy or C_1-C_6 alkoxy;

each R' and R'' is independently hydrogen, methyl, ethyl or propyl; or R' and R'' are taken together with the nitrogen to which they are attached to form a 5-6 membered heterocyclyl; and

PG and PG' are each independently an amine protecting group;

the process comprising

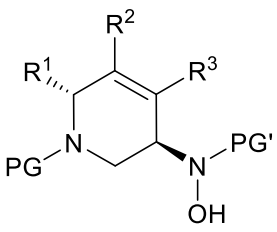
reacting a compound of the formula **XI**:



(**XI**);

or a salt thereof, with PG'NHOH in the presence of an oxidant to form the compound of the Formula **VI**.

16. A process for forming a compound of the formula **VI**:



(**VI**);

or a salt thereof, wherein

R^1 is $–C(O)NR^7R^8$, $–C(O)OR^7$, $–CH_2OR^7$, -CN, phenyl, a 5-6 membered heteroaryl, $-C(O)NR'NR'C(O)R^9$, $-C(O)NR'OR^{10}$, or a C_1-C_6 alkyl group, wherein the alkyl group is substituted with one to three groups selected from halo, C_1-C_3 alkoxy, -OH, -CN, $–NR^7R^8$, $-NR^7COR^9$, a 5-6 membered heteroaryl and a 5-7 membered heterocyclyl, and wherein the phenyl and heteroaryl represented by R^1 are optionally and independently substituted with 1-3 groups selected from halo, -OH, C_1-C_3 alkoxy, -CN, $-NR^7R^8$, and $-CONR^7R^8$;

R^2 and R^3 are each independently selected from hydrogen, halo, C_1-C_3 alkyl, and C_3-C_6 cycloalkyl, provided that at least one of R^2 and R^3 is other than hydrogen;

each R^7 and R^8 are independently hydrogen, C_1-C_3 alkyl, C_1-C_3 alkoxy, phenyl, C_3-C_6 cycloalkyl, 4-7 membered heterocyclyl, or 5-6 membered heteroaryl, wherein the alkyl, alkoxy, phenyl, cycloalkyl, heterocyclyl or heteroaryl represented by R^7 or R^8 is optionally and independently substituted with 1-6 groups selected from a 5-6 membered heterocyclyl optionally substituted with one or two –F atoms, carboxyl or $–CO(OC_{1\text{-}6}$ alkyl), 5-6 membered heteroaryl, -CN, -OH, C_1-C_3 alkyl optionally substituted with $–NH_2$ or –OH, C_1-C_3 haloalkyl, C_1-C_3 haloalkoxy, C_1-C_3 alkoxy $-NHCO(C_1\text{-}C_3$alkyl), $-NHCO(C_1\text{-}C_3$alkoxy), $-S(O)_2NR'R''$, $-NHS(O)_2NR'R''$, $-NHS(O)_2(C_1\text{-}C_3$alkyl), $-NR'R''$, and $-C(O)NR'R''$;

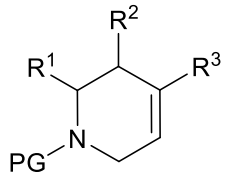
each R^9 is C_1-C_6 alkyl, C_1-C_6 haloalkyl, C_1-C_6 haloalkoxy or C_1-C_6 alkoxy;

each R' and R'' is independently hydrogen, methyl, ethyl or propyl; or R' and R'' are taken together with the nitrogen to which they are attached to form a 5-6 membered heterocyclyl; and

PG and PG' are each independently an amine protecting group;

the process comprising

reacting a compound of the formula **XI**:



(**XI**);

or a salt thereof, with PG'N=O to form the compound of the Formula **VI**.