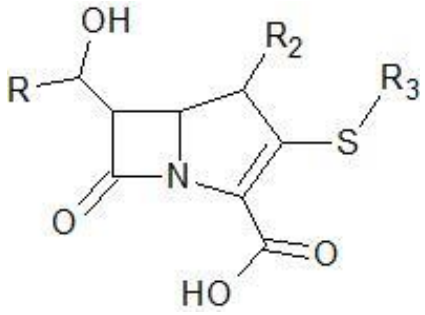
CLAIMS

What is claimed is:

1. A use of an effective amount of a compound in the manufacture of a medicament for long-acting prevention or treatment of type 2 diabetes in a subject in need thereof, wherein the compound is represented by formula (II) or a pharmaceutically acceptable salt thereof:



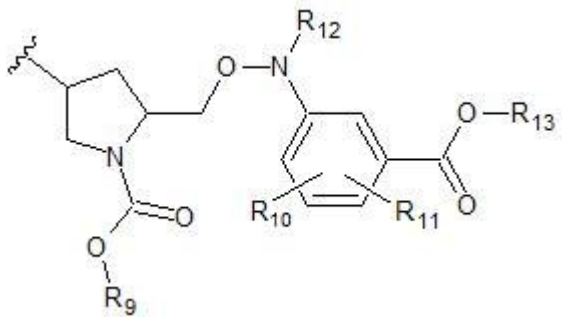
(II),

wherein:

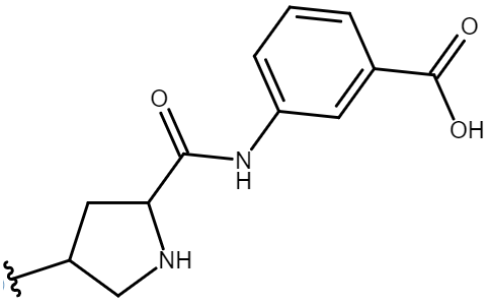
R is independently H or a substituted or unsubstituted moiety selected from the group consisting of alkyl, alkenyl, alkynyl, hydroxyalkyl, fluoroalkyl, chloroalkyl, bromoalkyl, iodoalkyl, perfluoroalkyl, aryl, heteroaryl, cycloalkyl, cycloalkenyl, carboxyl, aralkyl, aralkenyl, aralkynyl, heteroaralkyl, heteroaralkenyl, heteroaralkynyl, heterocyclyl, acyl, benzyl, phenyl, aminocarbonyl, aminoalkyl, amino, hydroxyl, alkoxy, acyloxy, silyloxy, amido, imidoyl, carbamoyl, halo, thio, thioether, sulfo, sulfonic, sulfamoyl, thiazolyl, thiazolidinyl, pyrrolyl, pyrrolidinyl, triazolyl, azetidinyl and sulfonamido,

R_2 is H or (C1-C6)-alkyl, and

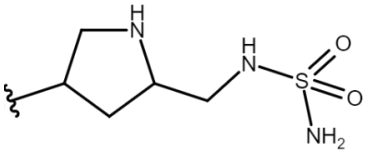
R_3 is represented by one of formulas (I-a) to (I-l) below:



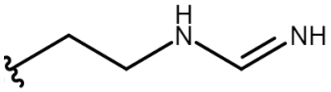
(I-a),



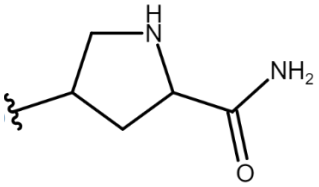
(I-b),



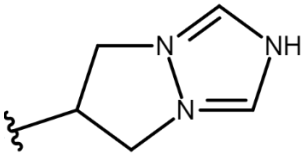
(Ic),



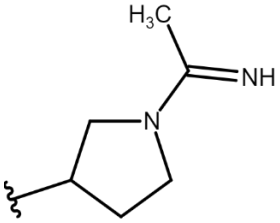
(I-d),



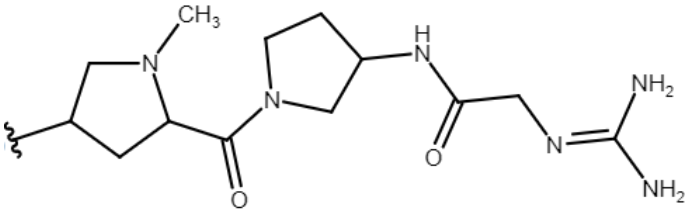
(I-e),



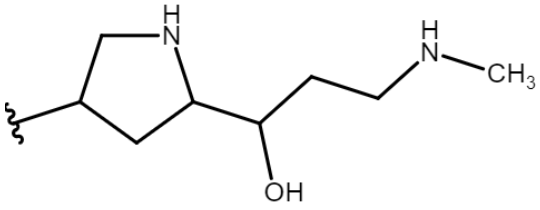
(I-f),



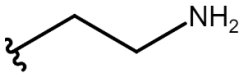
(I-g),



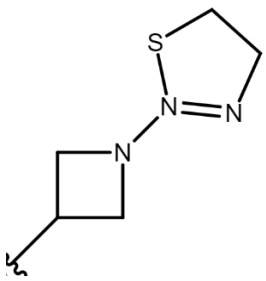
(I-h),



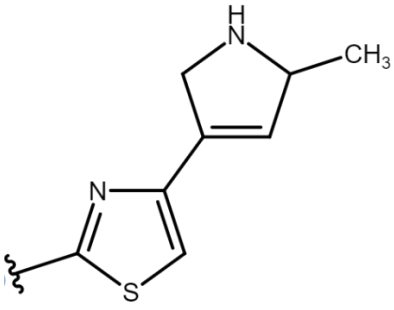
(I-i),



(I-j),



(I-k), and



(I-l),

wherein:

R_9 and R_{13} are independently H or (C1-C6)-alkyl or alkali-metal or alkali earth-

metal, wherein the alkali-metal or the alkali earth-metal is sodium, potassium, lithium, cesium, rubidium, barium, calcium or magnesium,

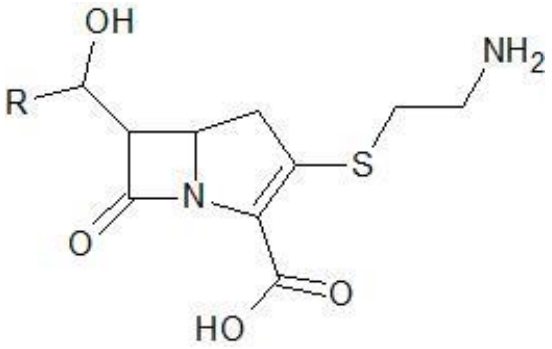
R_{10} and R_{11} are independently H, halo, cyano, (C1-C6)-alkyl, nitro, hydroxy, carboxy, (C1-C6)-alkoxy, (C1-C6)-alkoxycarbonyl, aminosulphonyl, (C1-C6)-alkylaminosulphonyl, di-(C1-C6)-alkylaminosulphonyl, carbamoyl, (C1-C6)-alkylcarbamoyl, di-(C1-C6)-alkylcarbamoyl, trifluoromethyl, sulphonic acid, amino, (C1-C6)-alkylamino, di-(C1-C6)-alkylamino, (C1-C6)-alkanoylamino, (C1-C6)-alkanoyl(N-(C1-C6)-alkyl)amino, (C1-C6)-alkanesulphonamido, or (C1-C6)-alkyl-$S(O)_n$, wherein n is 0 to 2, and

R_{12} is H or (C1-C6)-alkyl; and

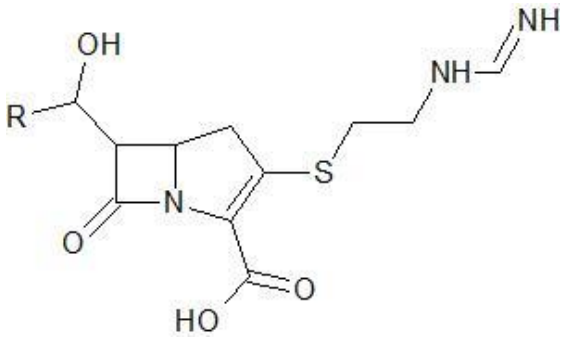
wherein the long-acting prevention or treatment of the type 2 diabetes is prevention or treatment of a symptom of the type 2 diabetes for more than two days after administration of the compound.

2. The use of claim 1, wherein the compound is carbapenem.

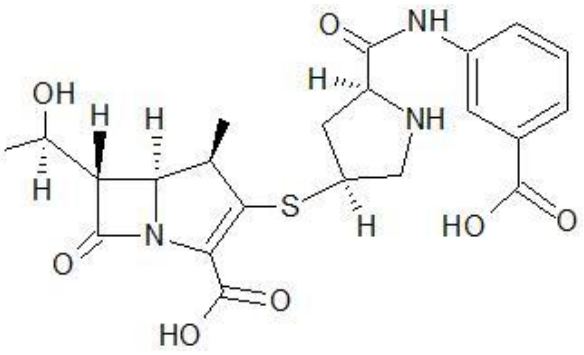
3. The use of claim 2, wherein the compound is represented by following formula:



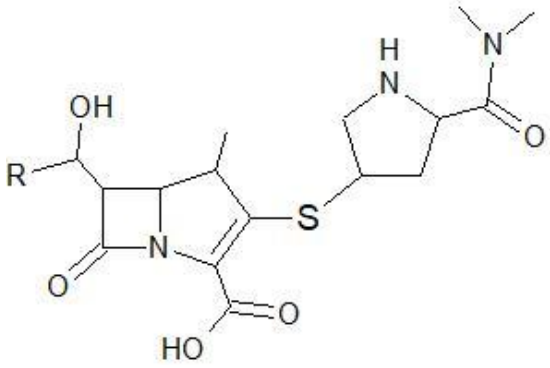
(IIA),



(IIB),



(IIC), or



(IID)

wherein R is as defined in claim 1.

4. The use of claim 2, wherein the compound is ertapenem, doripenem, imipenem, meropenem, biapenem, panipenem, tomopenem, lenapenem, tebipenem, razupenem, or thienpenem.

5. The use of claim 1, wherein the long-acting prevention or treatment lasts for at least one week after the administration.

6. The use of claim 1, wherein the long-acting prevention or treatment lasts for at least 6 weeks after the administration.

7. The use of claim 1, wherein the long-acting prevention or treatment lasts for 6 to 10 weeks after the administration.

8. The use of claim 1, wherein the subject is mammal.

9. The use of claim 1, wherein the subject is human.