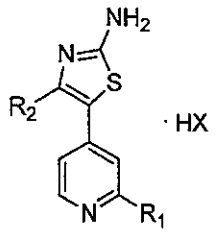
CLAIMS

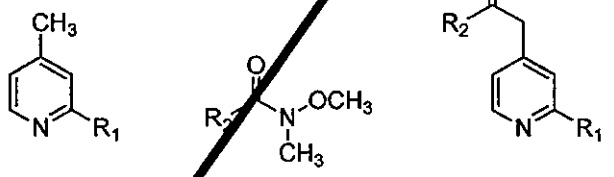
1. A process for making a compound of formula (V):



(V)

comprising the following steps:

Step A: contacting a compound of formula (I) with a solvent and a base, and contacting the resulting mixture with a compound of formula (II), such that a compound of formula (III) is produced:



(I) (II) (III) ;

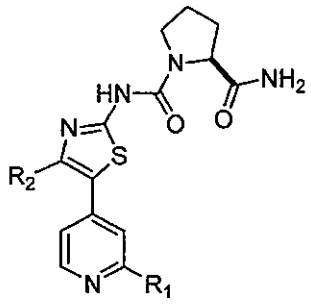
Step B: contacting a compound of formula (III) with thiourea, in a reaction mixture comprising a solvent and an oxidizing agent, such that a compound of formula (V) is produced;

wherein R_1 is a cyclic or acyclic, branched or linear C_1-C_7 alkyl, which may be optionally substituted one or more times with deuterium, halogen, or C_3-C_5 cycloalkyl; and

wherein R_2 is selected from (1) hydrogen, (2) fluoro, chloro, (3) optionally substituted methyl, wherein said substituents are independently selected from one or more, preferably one to three of the following moieties: deuterium, fluoro, chloro, dimethylamino; and

wherein X is selected from the group consisting of halide, carboxylate and sulfonate.

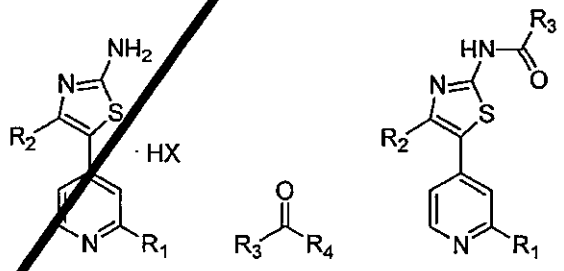
2. A process for making a compound of formula (X):



(X)

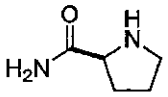
comprising the following steps:

Step C: contacting a compound of formula (V) with a compound of formula (VII), in a reaction mixture comprising a solvent and a base, such that a compound of formula (VIII) is produced:



(V) (VII) (VIII)

Step D: contacting a compound of formula (VIII) with the compound of formula (IX), in a reaction mixture comprising a solvent, such that a compound of formula (X) is produced:



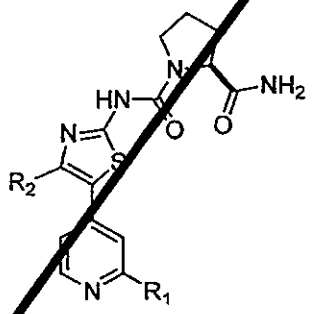
(IX) ;

wherein R_1, R_2 and X are as defined in claim 1;

wherein R_3 and R_4 are independently selected from the group consisting of halogen, heteroaryl, alkoxy and aryloxy;

wherein the heteroaryl, alkoxy and aryloxy moieties of R_3 and R_4 are optionally, independently substituted one or more times with alkyl, alkoxy, halogen and nitro.

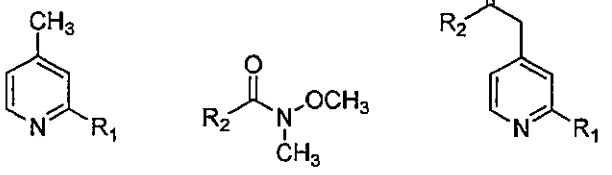
3. A process for making a compound of formula (X):



(X)

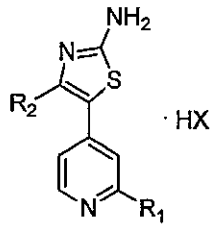
comprising the following steps:

Step A: contacting a compound of formula (I) with a solvent and a base, and contacting the resulting mixture with a compound of formula (II), such that a compound of formula (III) is produced:



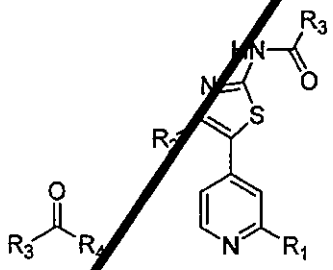
(I) (II) (III) ;

Step B: contacting a compound of formula (III) with thiourea, in a reaction mixture comprising a solvent and an oxidizing agent, such that a compound of formula (V) is produced:



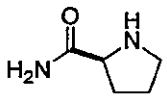
(V)

Step C: contacting a compound of formula (V) with a compound of formula (VII), in a reaction mixture comprising a solvent and a base, such that a compound of formula (VIII) is produced:



(VII) (VIII) ;

Step D: contacting a compound of formula (VIII) with the compound of formula (IX), in a reaction mixture comprising a solvent, such that a compound of formula (X) is produced:



(IX) ;

wherein R_1, R_2, R_3, R_4 and X are as defined in claims 1 and 2.

4. The process of any one of the preceding claims, wherein the solvent of Step A comprises one or more solvents selected from aromatic solvents, aliphatic solvents, halogenated solvents, polar aprotic solvents and ethereal solvents.

5. The process of claim 4, wherein the solvent of Step A comprises tetrahydrofuran.

6. The process of any one of the preceding claims, wherein the solvent of Steps B, C and D independently comprises one or more solvents selected from aromatic solvents, aliphatic solvents, halogenated solvents, ethereal solvents, polar aprotic solvents, water and alcohol solvents.

7. The process of claim 6, wherein the solvent of Step B comprises toluene and ethanol.

8. The process of claim 6, wherein the solvent of Step C comprises tetrahydrofuran.

9. The process of claim 6, wherein the solvent of Step D comprises tetrahydrofuran and water.

10. The process of any one of the preceding claims, wherein the base of Step A is lithium diisopropylamide.

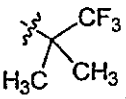
11. The process of any one of the preceding claims, wherein the base of Step C is an amine.

12. The process of claim 11, wherein the base of Step C is pyridine.

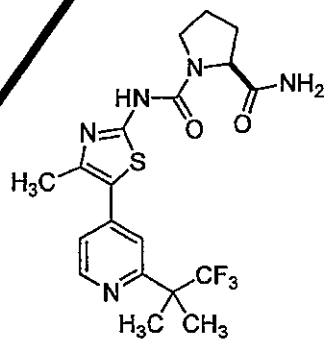
13. The process of any one of the preceding claims, wherein the oxidizing agent of Step B is an electrophilic halogen reagent.

14. The process of claim 13, wherein the oxidizing agent of Step B is N-bromosuccinimide.

15. The process of any one of the preceding claims, wherein the solvent of Step A comprises tetrahydrofuran, the base of Step A is lithium diisopropylamide, the solvent of Step B comprises toluene and ethanol, the oxidizing agent of Step B is N-bromosuccinimide, the solvent of Step C comprises tetrahydrofuran, the base of Step C is pyridine and the solvent of Step D comprises tetrahydrofuran and water.

16. The process of any one of the preceding claims, wherein R_1 is , R_2 is methyl, R_3 is phenoxy, R_4 is chlorine and X is bromine.

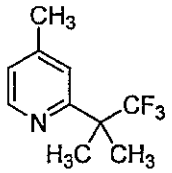
17. A process for making the compound of formula (10):



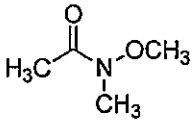
(10)

comprising the following steps:

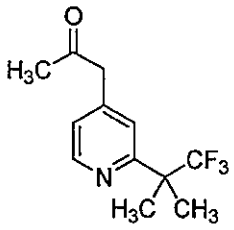
Step A: contacting the compound of formula (1) with a solvent and a base, and contacting the resulting mixture with the compound of formula (2), such that the compound of formula (3) is produced:



(1)

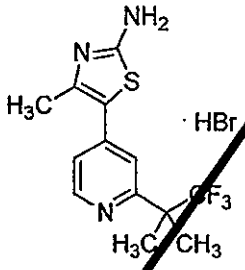


(2)



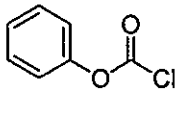
(3) ;

Step B: contacting the compound of formula (3) with thiourea, in a reaction mixture comprising a solvent and an oxidizing agent, such that the compound of formula (5) is produced:

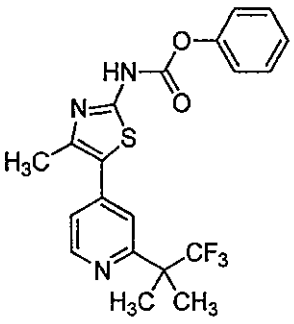


(5) ;

Step C: contacting the compound of formula (5) with the compound of formula (7), in a reaction mixture comprising a solvent and a base, such that the compound of formula (8) is produced:

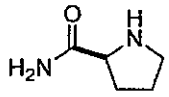


(7)



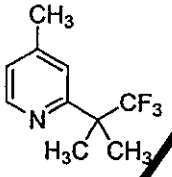
(8) ; and

Step D: contacting the compound of formula (8) with the compound of formula (IX), in a reaction mixture comprising a solvent, such that the compound of formula (10) is produced:



(IX)

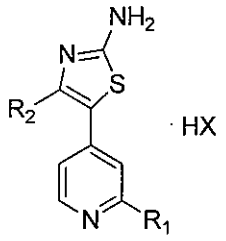
18. The compound according to formula (1):



(1)

CLAIMS

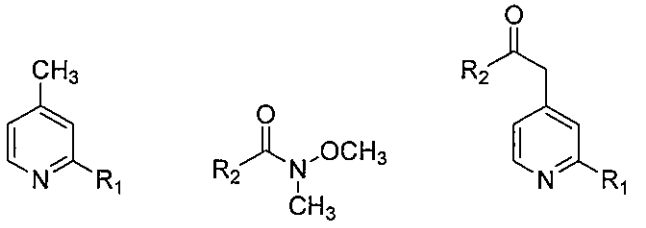
1. A process for making a compound of formula (V):



(V)

comprising the following steps:

Step A: contacting a compound of formula (I) with a solvent and a base, and contacting the resulting mixture with a compound of formula (II), such that a compound of formula (III) is produced:



(I) (II) (III) ;

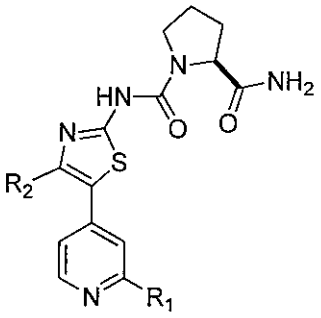
Step B: contacting a compound of formula (III) with thiourea, in a reaction mixture comprising a solvent and an oxidizing agent, such that a compound of formula (V) is produced;

wherein R_1 is a cyclic or acyclic, branched or linear C_1-C_7 alkyl, which may be optionally substituted one or more times with deuterium, halogen, or C_3-C_5 cycloalkyl; and

wherein R_2 is selected from (1) hydrogen, (2) fluoro, chloro, (3) optionally substituted methyl, wherein said substituents are independently selected from one or more, preferably one to three of the following moieties: deuterium, fluoro, chloro, dimethylamino; and

wherein X is selected from the group consisting of halide, carboxylate and sulfonate.

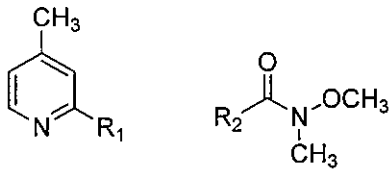
2. A process for making a compound of formula (X):



(X)

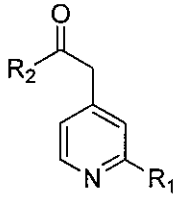
comprising the following steps:

Step A: contacting a compound of formula (I) with a solvent and a base, and contacting the resulting mixture with a compound of formula (II), such that a compound of formula (III) is produced:



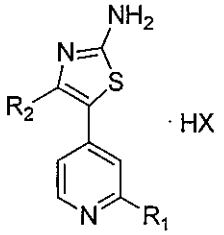
(I)

(II)



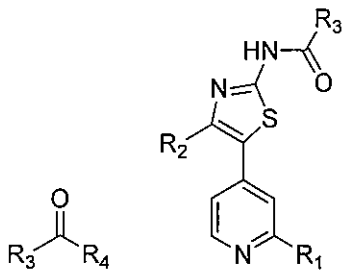
(III) ;

Step B: contacting a compound of formula (III) with thiourea, in a reaction mixture comprising a solvent and an oxidizing agent, such that a compound of formula (V) is produced:



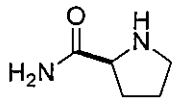
(V)

Step C: contacting a compound of formula (V) with a compound of formula (VII), in a reaction mixture comprising a solvent and a base, such that a compound of formula (VIII) is produced:



(VII) (VIII) ;

Step D: contacting a compound of formula (VIII) with the compound of formula (IX), in a reaction mixture comprising a solvent, such that a compound of formula (X) is produced:



(IX) ;

wherein R_1, R_2 and X are as defined in claim 1;

wherein R_3 and R_4 are independently selected from the group consisting of halogen, heteroaryl, alkoxy and aryloxy;

wherein the heteroaryl, alkoxy and aryloxy moieties of R_3 and R_4 are optionally, independently substituted one or more times with alkyl, alkoxy, halogen and nitro.

3. The process of any one of the preceding claims, wherein the solvent of Step A comprises one or more solvents selected from aromatic solvents, aliphatic solvents, halogenated solvents, polar aprotic solvents and ethereal solvents.

4. The process of claim 3, wherein the solvent of Step A comprises tetrahydrofuran.

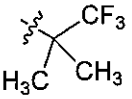
5. The process ofany one of the preceding claims, wherein the solvent of Step B comprises toluene and ethanol.

6. The process of any one of the preceding claims, wherein the base of Step A is lithium diisopropylamide.

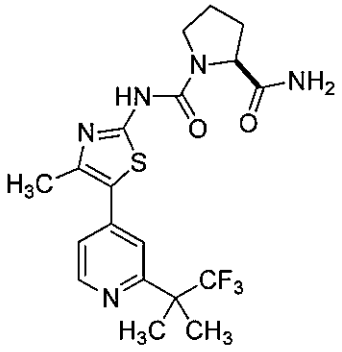
7. The process of any one of the preceding claims, wherein the oxidizing agent of Step B is an electrophilic halogen reagent.

8. The process of claim 7, wherein the oxidizing agent of Step B is N-bromosuccinimide.

9. The process of any one of the preceding claims, wherein the solvent of Step A comprises tetrahydrofuran, the base of Step A is lithium diisopropylamide, the solvent of Step B comprises toluene and ethanol, the oxidizing agent of Step B is N-bromosuccinimide, the solvent of Step C comprises tetrahydrofuran, the base of Step C is pyridine and the solvent of Step D comprises tetrahydrofuran and water.

10. The process of any one of the preceding claims, wherein R_1 is , R_2 is methyl, R_3 is phenoxy, R_4 is chlorine and X is bromine.

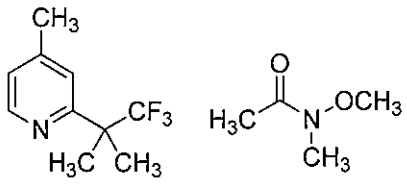
11. A process for making the compound of formula (10):



(10)

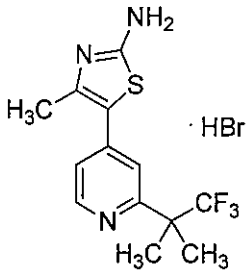
comprising the following steps:

Step A: contacting the compound of formula (1) with a solvent and a base, and contacting the resulting mixture with the compound of formula (2), such that the compound of formula (3) is produced:



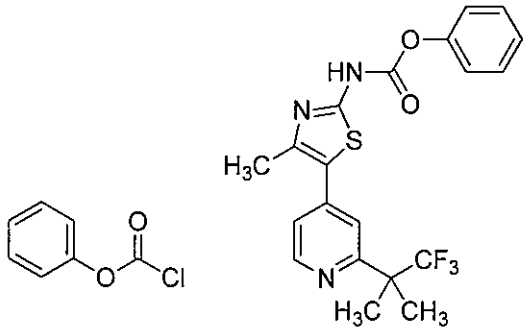
(1) (2) (3) ;

Step B: contacting the compound of formula (3) with thiourea, in a reaction mixture comprising a solvent and an oxidizing agent, such that the compound of formula (5) is produced:



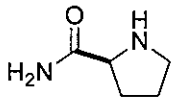
(5) ;

Step C: contacting the compound of formula (5) with the compound of formula (7), in a reaction mixture comprising a solvent and a base, such that the compound of formula (8) is produced:



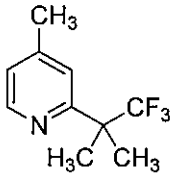
(7) (8) ; and

Step D: contacting the compound of formula (8) with the compound of formula (IX), in a reaction mixture comprising a solvent, such that the compound of formula (10) is produced:



(IX)

12. The compound according to formula (1):



(1)