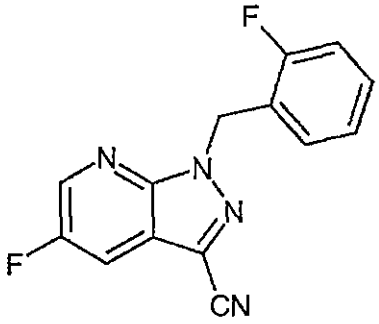
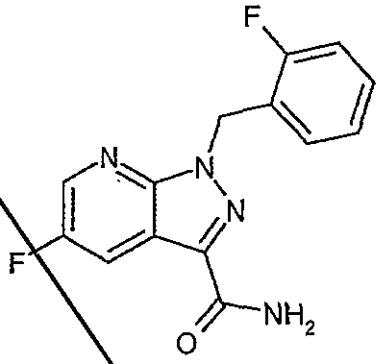
Claims

1. Process for preparing compounds of the formula (VI)



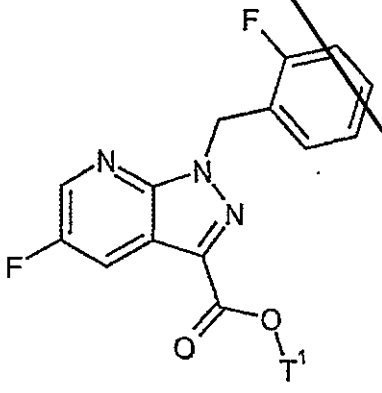
(VI),

characterized in that the compound of the formula (V)



(V)

is prepared by reaction of an ester of the formula (IVa)



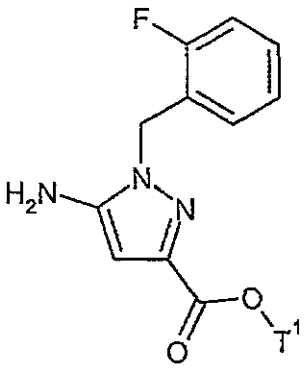
(IVa)

in which

T^1 is (C_1-C_4)-alkyl

with formamide.

2. Process according to Claim 1, characterized in that an ester of the formula (IVa) is prepared by cyclizing the 5-aminopyrazole derivative (IIa)

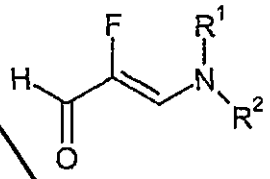


(IIa)

in which

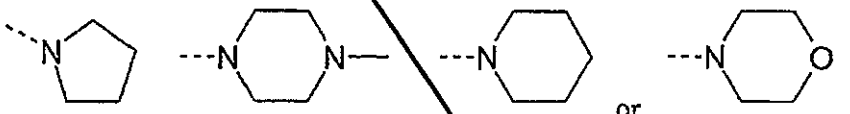
T^1 is (C_1-C_4)-alkyl

in the presence of an alkali metal salt and an acid with an aldehyde of the formula (III)



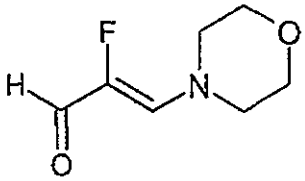
(III)

in which R^1 and R^2 are each independently methyl, ethyl, isopropyl, phenyl or, together with the nitrogen atom to which they are bonded, are



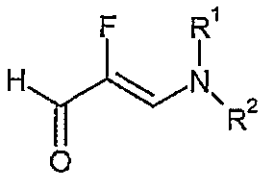
or .

3. Process according to Claims 1 and 2, characterized in that the aldehyde used in the cyclization reaction is the compound of the formula (IIIa)



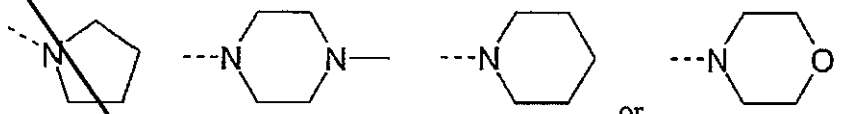
(IIIa).

4. Process for preparing aldehydes of the formula (III)

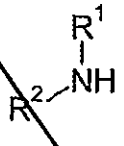


(III)

in which R^1 and R^2 are each independently methyl, ethyl, isopropyl, phenyl or, together with the nitrogen atom to which they are bonded, are

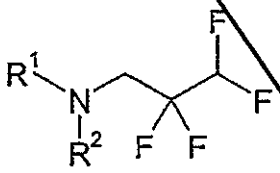


characterized in that trifluoromethanesulphonic anhydride is reacted with 2,2,3,3-tetrafluoro-1-propanol without solvent and the resulting 2,2,3,3-tetrafluoropropyl trifluoromethanesulphonate is reacted with a compound of the formula (XIIa)



(XIIa)

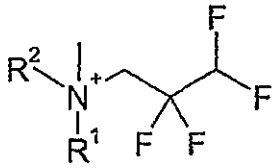
in which R^1 and R^2 are each as defined above to give a compound of the formula (XIIIa)



(XIIIa)

in which R^1 and R^2 are each as defined above

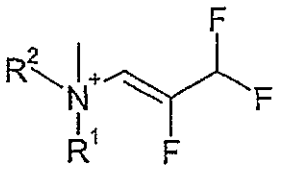
and with methyl methanesulphonate to give a compound of the formula (XIVa)



$CH_3SO_3^-$ (XIVa)

in which R^1 and R^2 are each as defined above

and with sodium hydroxide to give a compound of the formula (XVa)

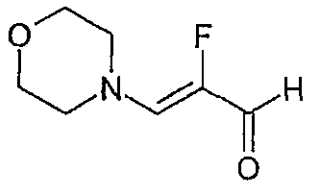


$CH_3SO_3^-$ (XVa)

in which R^1 and R^2 are each as defined above

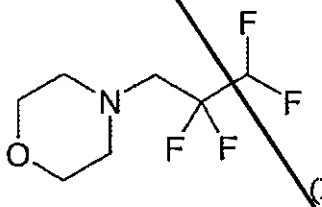
and finally with a compound of the formula (XIIa) to give the compound of the formula (III).

5. Process for preparing compounds of the formula (IIIa)



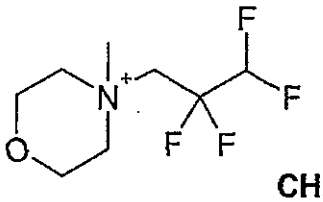
(IIIa)

wherein trifluoromethanesulphonic anhydride of the formula (X) is reacted with 2,2,3,3-tetrafluoro-1-propanol of the formula XI without solvent and the resulting 2,2,3,3-tetrafluoropropyl trifluoromethanesulphonate of the formula XII is reacted with morpholine to give a compound of the formula (XIII)



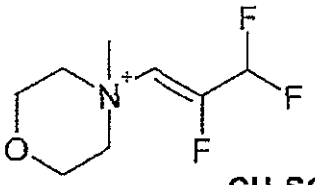
(XIII)

and with methyl methanesulphonate to give a compound of the formula (XIV)



$CH_3SO_3^-$ (XIV)

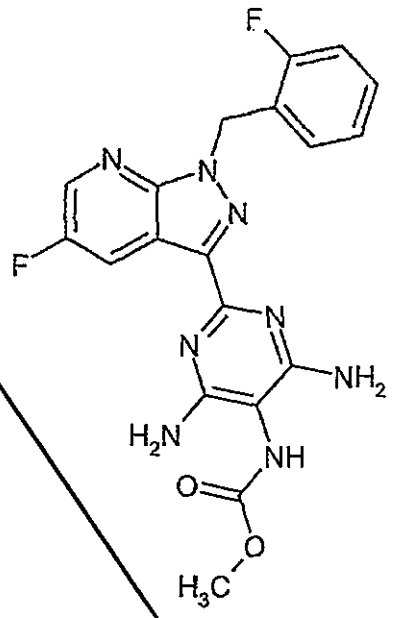
and with sodium hydroxide to give a compound of the formula (XV)



(XV)

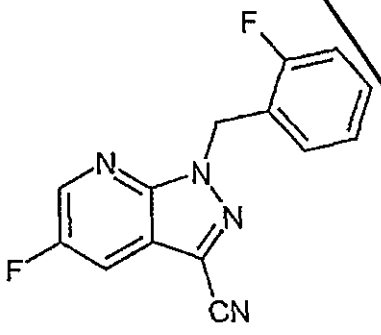
and finally with addition of morpholine to give the compound of the formula (IIIa).

6. Process for preparing compound of the formula (I)



(I),

characterized in that compounds of the formula (VI)

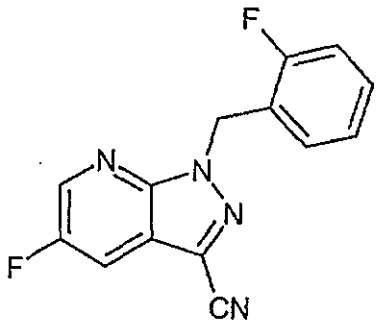


(VI)

are used,

these being characterized in that they are prepared by the process from Claim 1 and the resulting compounds of the formula (I) are optionally converted with the appropriate (i) solvents and/or (ii) acids or bases to the solvates, salts and/or solvates of the salts thereof.

7. Process for preparing compound of the formula (I), characterized in that compounds of the formula (VI)

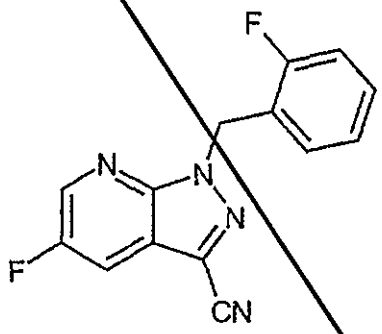


(VI)

are used,

these being characterized in that they are prepared by the process from Claims 1 and 2 and the resulting compounds of the formula (I) are optionally converted with the appropriate (i) solvents and/or (ii) acids or bases to the solvates, salts and/or solvates of the salts thereof.

8. Process for preparing compound of the formula (I), characterized in that compounds of the formula (VI)

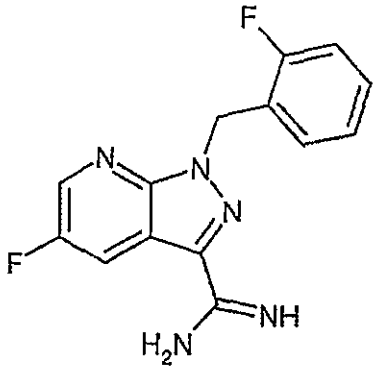


(VI)

are used,

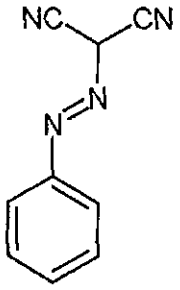
these being characterized in that they are prepared by the process from Claims 1 to 3 and the resulting compounds of the formula (I) are optionally converted with the appropriate (i) solvents and/or (ii) acids or bases to the solvates, salts and/or solvates of the salts thereof.

9. Process for preparing compound (I), characterized in that the compound of the formula (VI) is used, this being prepared according to Claims 1 to 3, by converting the compound of the formula (VI) to the compound of the formula (VII)



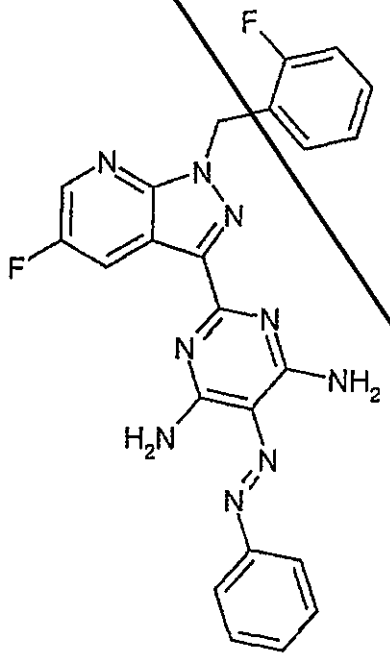
x HCl (VII),

subsequently reacting the latter in an inert solvent in the presence of a suitable base with the compound of the formula (VIIIa)



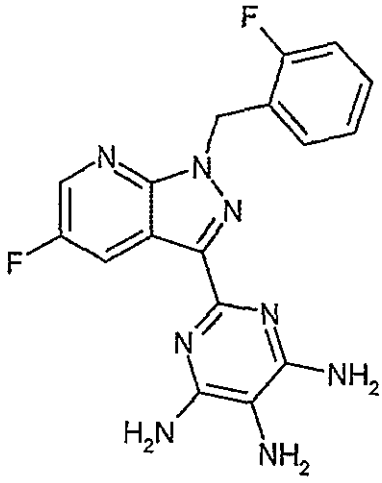
(VIIIa)

to give the compound of the formula (VIII)



(VIII),

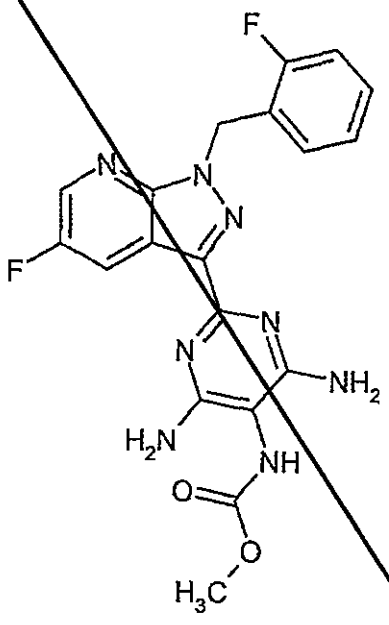
and then reducing the latter in an inert solvent in the presence of a suitable reducing agent to give the compound (IX)



(IX),

and thereafter reacting the latter with methyl chloroformate or with dimethyl dicarbonate in the presence of a suitable base with or without solvent to give the compound of the formula (I), and optionally converting the resulting compounds of the formula (I) optionally with the appropriate (i) solvents and/or (ii) acids or bases to the solvates, salts and/or solvates of the salts thereof.

10. Compound of the formula (I) in crystalline form of polymorph I

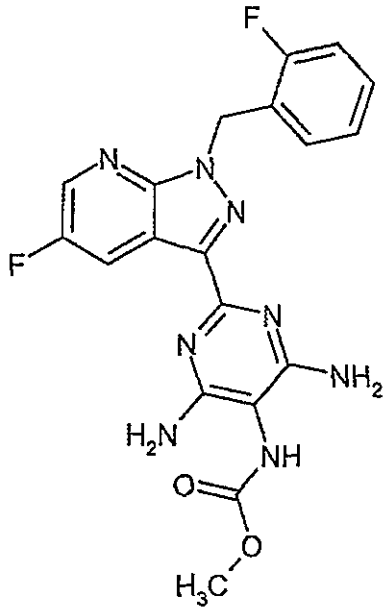


(I),

characterized in that the x-ray diffractogram of the compound exhibits peak maxima of the 2 theta angle at 5.9, 6.9, 22.7.

11. Compound according to Claim 10, characterized in that the x-ray diffractogram of the compound exhibits peak maxima of the 2 theta angle at 5.9, 6.9, 16.2, 16.5, 24.1, 22.7, 24.7.

12. Compound of the formula (I) in crystalline form of polymorph I



(I),

characterized in that the IR spectrum of the compound exhibits band maxima at 1707, 1633, 1475 cm^{-1}.

13. Compound according to Claim 12, characterized in that the IR spectrum of the compound exhibits band maxima at 1707, 1633, 1566, 1475, 1255, 1223 cm^{-1}.

14. Process for preparing the compound of the formula (I) in crystalline form of polymorph I, characterized in that the compound of the formula (I), present in one or more polymorphs or as a solvate in an inert solvent, is stirred at a temperature of 20°C - 120°C and the compound of the formula (I) is isolated in crystalline polymorph I.

15. Compound according to any of Claims 10 to 13 for treatment of disorders.

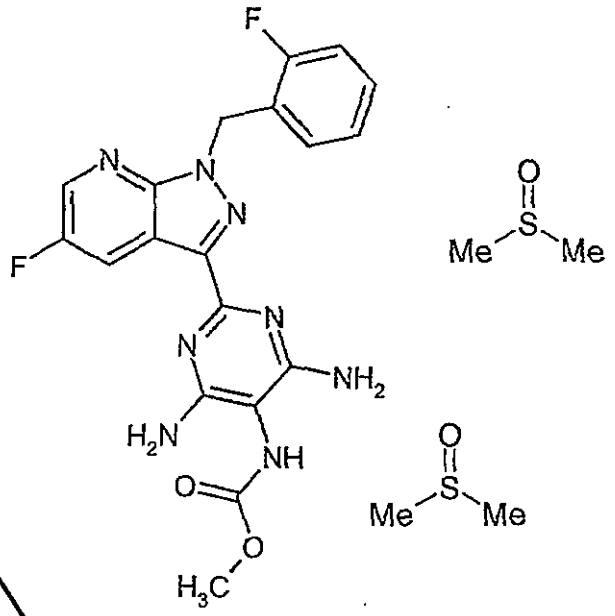
16. Medicament comprising a compound according to any of Claims 10 to 13 and no greater proportions of any other form of the compound of the formula (I).

17. Medicament comprising a compound according to any of Claims 10 to 13 in more than 90 per cent by weight based on the total amount of the compound of the formula (I) present.

18. Use of the compound according to any of Claims 10 to 13 for production of a medicament for treatment of cardiovascular disorders.

19. Method for treatment of cardiovascular disorders by administering an effective amount of a compound according to any of Claims 10 to 13.

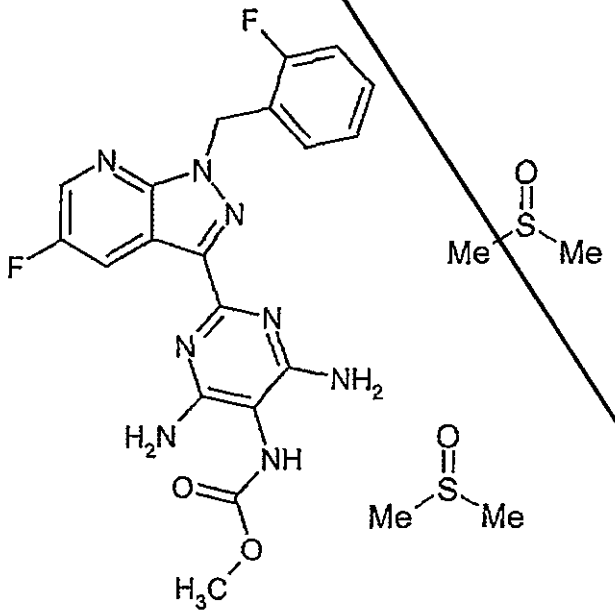
20. Crystalline substance compound of the formula (I) in the form of the di-dimethyl sulphoxide solvate,



characterized in that the x-ray diffractogram of the compound exhibits peak maxima of the 2 theta angle at 18.8, 20.3, 21.7.

21. Compound according to Claim 20, characterized in that the x-ray diffractogram of the compound exhibits peak maxima of the 2 theta angle at 12.0, 16.6, 17.8, 18.8, 20.3, 21.7.

22. Crystalline substance compound of the formula (I) in the form of the di-dimethyl sulphoxide solvate,

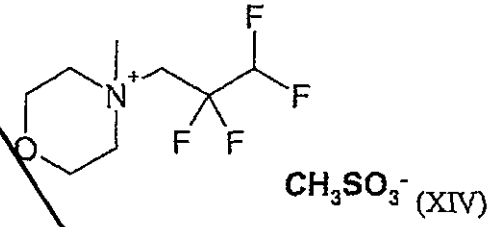


characterized in that the IR spectrum of the compound exhibits band maxima at 1720, 1628, 1481 cm^{-1}.

23. Compound according to Claim 22, characterized in that the IR spectrum of the compound exhibits band maxima at 1720, 1628, 1481, 1234, 1041, 1017 cm^{-1}.

24. Process for preparing the compound of the formula (I) as the di-dimethyl sulphoxide solvate in crystalline form, characterized in that the compound of the formula (I), present in one or more polymorphs or as a solvate in dimethyl sulphoxide or a mixture of dimethyl sulphoxide and an inert solvent, is stirred at a temperature of 20 - 120°C and the di-dimethyl sulphoxide solvate is isolated.

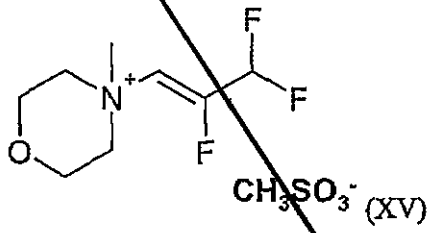
25. Compound of the formula (XIV)



(XIV)

and the salts, solvates and solvates of the salts thereof.

26. Compound of the formula (XV)



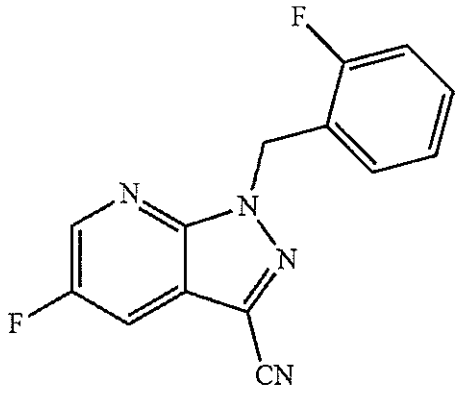
(XV)

and the salts, solvates and solvates of the salts thereof.

CLAIMS

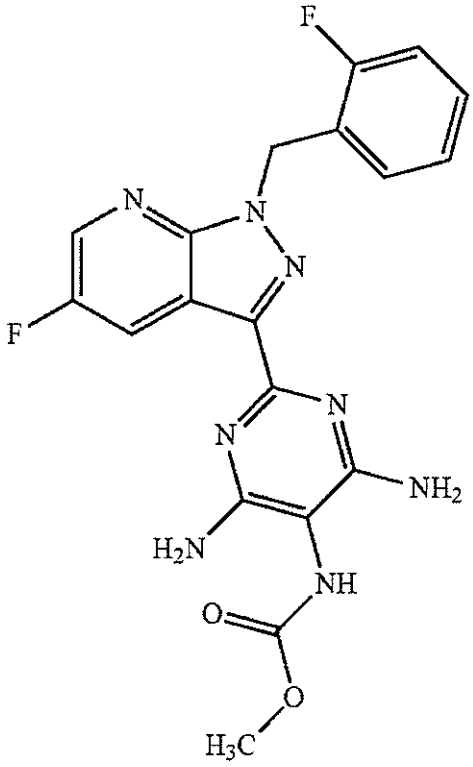
1. A process of preparing a compound of formula (I), comprising using the compound of formula (VI)

(VI)



to prepare a compound of formula (I)

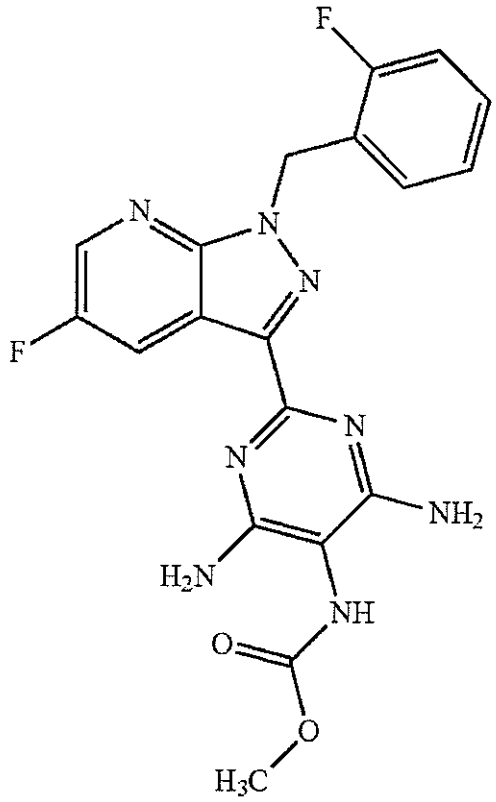
(I)



wherein the compound of formula (I) is optionally converted with an appropriate (i) solvent and/or (ii) acid or base to the solvate, salt and/or solvate of the salt thereof.

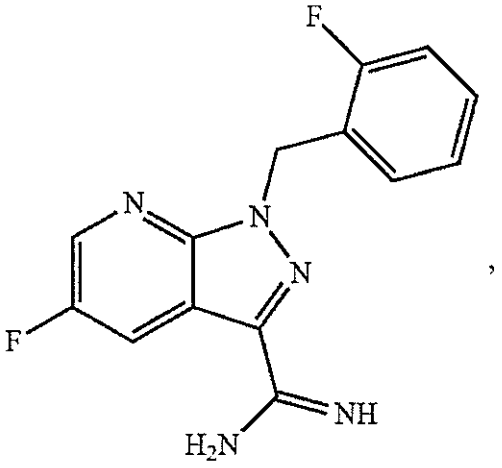
2. A process of preparing a compound of formula (I)

(I)



by converting the compound of the formula (VI) to the compound of the formula (VII)

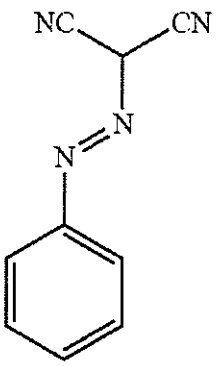
(VII)



x HCl

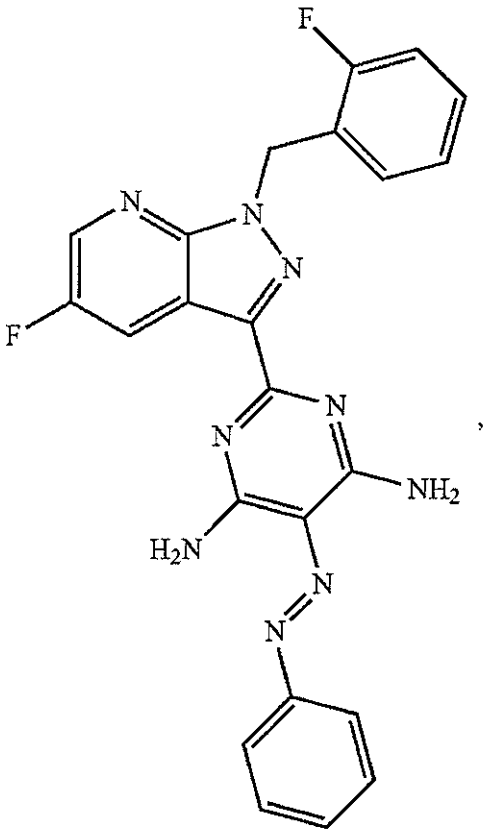
reacting the compound of formula (VII) in an inert solvent in the presence of a suitable base with the compound of the formula (VIIIa)

(VIIIa)



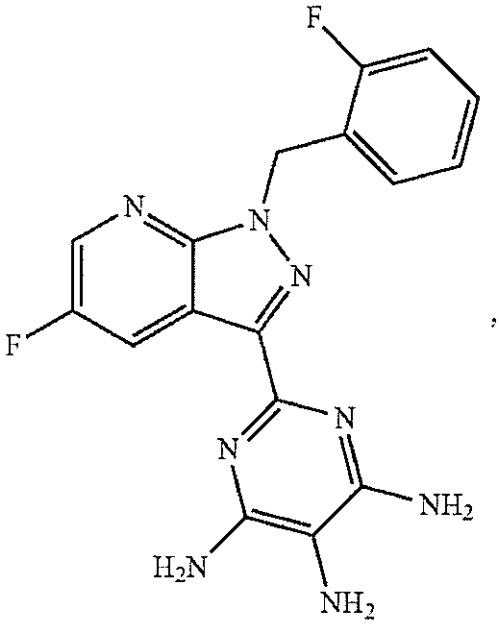
to give the compound of the formula (VIII)

(VIII)



and reducing the compound of formula (VIII) in an inert solvent in the presence of a suitable reducing agent to give the compound (IX)

(IX)



and reacting the compound of formula (IX) with methyl chloroformate or with dimethyl dicarbonate in the presence of a suitable base with or without solvent to give the compound of the formula (I), and

optionally, converting the resulting compound of formula (I) with the appropriate (i) solvent and/or (ii) acid or base to the solvate, salt and/or solvate of the salt thereof.