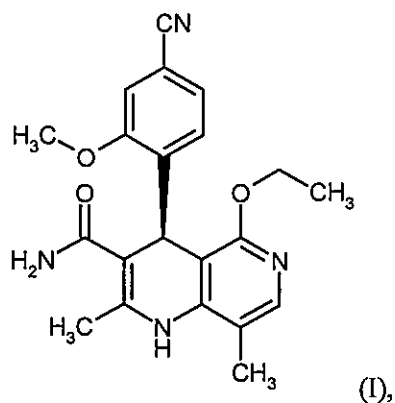
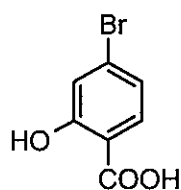


Claims

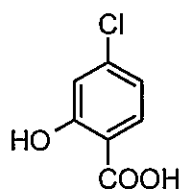
1. Process for preparing compound (I)



characterized in that the compound of the formula (XIV) or the formula (XIVa)

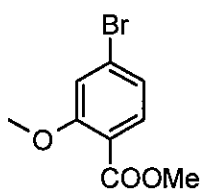


(XIV)

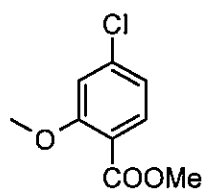


(XIVa)

are reacted by addition of dimethyl sulphate to give the compound of the formula (XV) or (XVa)

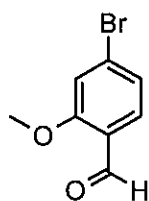


(XV)

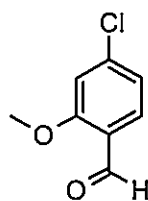


(XVa)

and the non-isolated methyl esters of the formula (XV) or (XVa) are reduced with 1.21 eq of REDAL (sodium bis(2-methoxyethoxy)aluminium dihydride and 1.28 eq of N-methylpiperazine to give the aldehyde of the formula (XVI) or (XVIa)

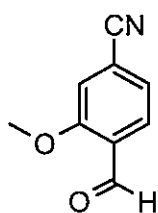


(XVI)



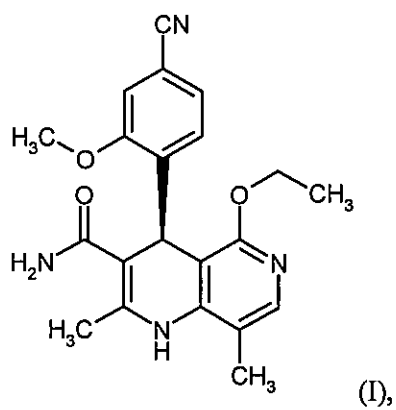
(XVIa),

and the aldehyde (XVI) or (XVIa) is reacted further without isolation to give the nitrile of the formula (VI)



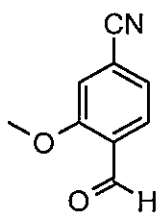
(VI).

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



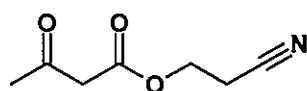
(I),

characterized in that the compound of the formula (VI)



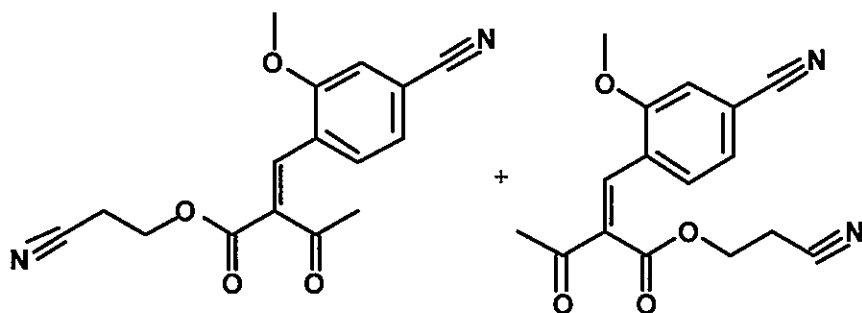
(VI)

dissolved in isopropanol (3-7 fold), 5-10 mol% of piperidine and 5- 10 mol% of glacial acetic acid at 30°C is reacted with the compound of the formula (VII)



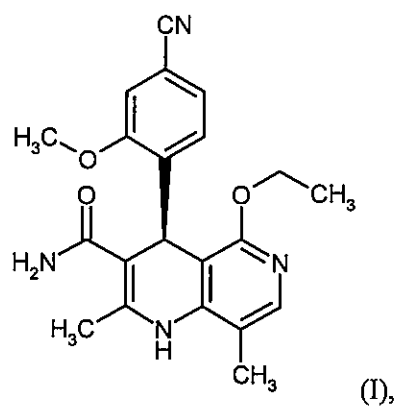
(VII)

to give the compounds (VIIIa+b).

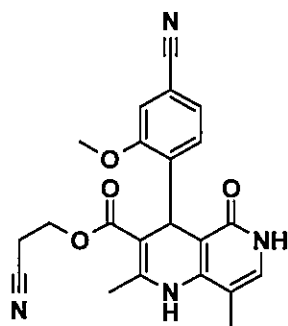


(VIII a+b).

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

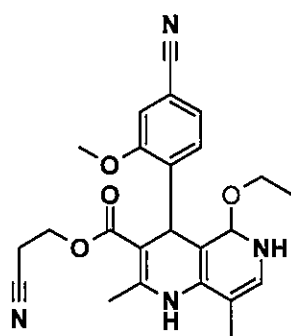


characterized in that the compound of the formula (X)



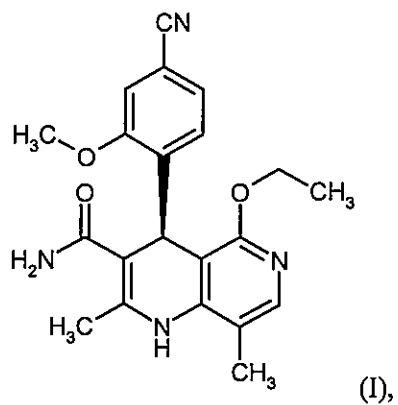
(X),

is reacted while stirring with 2.5 -5 eq of triethyl orthoacetate in dimethylacetamide at 100 to 120°C for 1.5 to 3 hours to give the compound of the formula (XI)

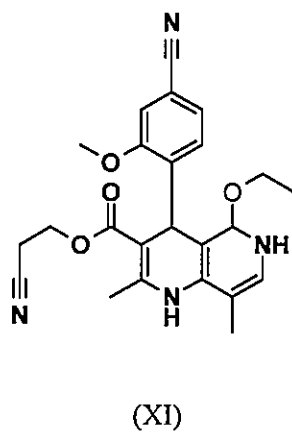


(XI).

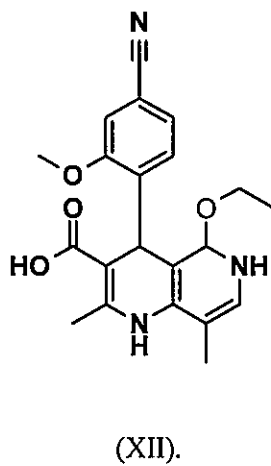
4. Process for preparing compound of the formula (I)



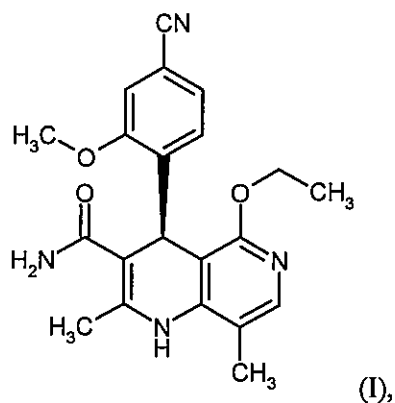
characterized in that the compound of the formula (XI)



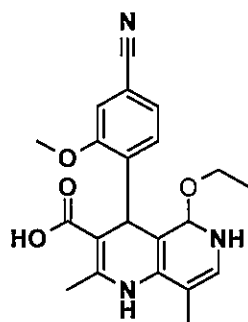
is saponified in a THF/water mixture (2:1, 9-fold) with aqueous sodium hydroxide solution to give the compound of the formula (XII)



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

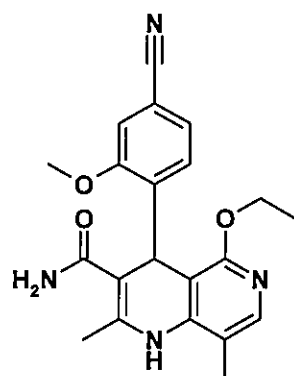


characterized in that the compound of the formula (XII)



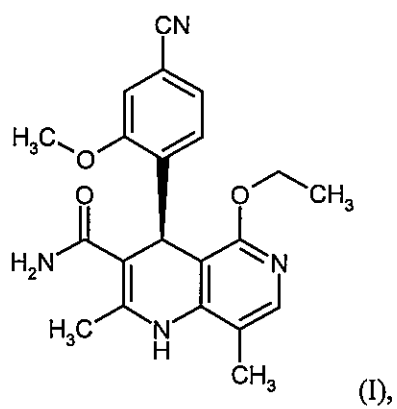
(XII)

is reacted in a one-pot reaction in THF firstly with carbodiimidazole and catalytic amounts of 4-(dimethylamino)pyridine, in a second step is heated under reflux together with hexamethyldisilazane for 16 to 24 hours and in a third step is hydrolysed in water with THF or water to give the compound of the formula (XIII)



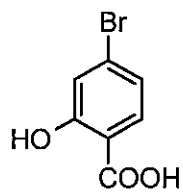
(XIII).

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

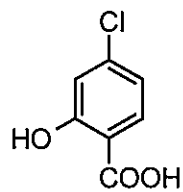


(I),

according to Claims 1 and 2, characterized in that the compound of the formula (XIV) or the formula (XIVa)

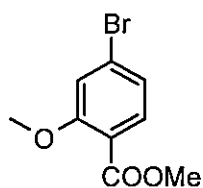


(XIV)

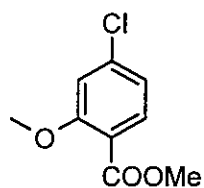


(XIVa)

are reacted by addition of dimethyl sulphate to give the compound of the formula (XV) or (XVa)

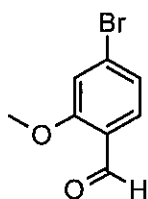


(XV)

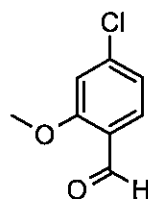


(XVa)

and the non-isolated methyl esters of the formula (XV) or (XVa) are reduced with 1.21 eq of REDAL (sodium bis(2-methoxyethoxy)aluminium dihydride) and 1.28 eq of N-methylpiperazine to give the aldehyde of the formula (XVI) or (XVIa)

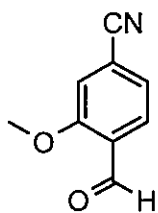


(XVI)



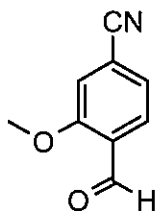
(XVIa),

and the aldehyde (XVI) or (XVIa) is reacted further without isolation to give the nitrile of the formula (VI)



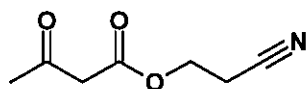
(VI)

and the compound of the formula (VI)



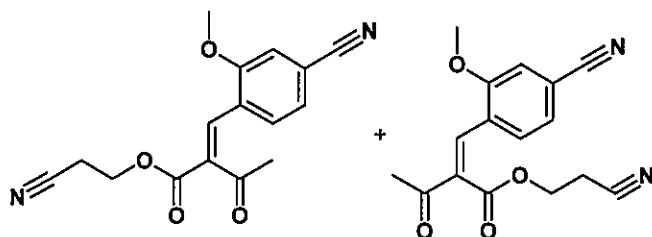
(VI)

dissolved in isopropanol (3-7 fold), 5-10 mol% of piperidine and 5-10 mol% of glacial acetic acid at 30°C is reacted with the compound of the formula (VII)



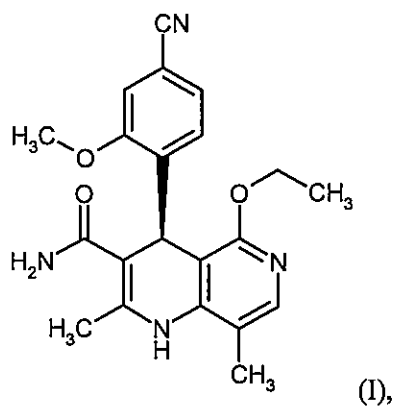
(VII)

to give the compounds (VIIIa+b).



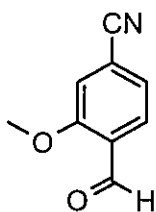
(VIII a+b).

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



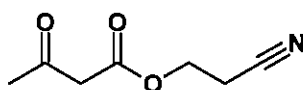
(I),

according to Claims 2 and 3, characterized in that the compound of the formula (VI)



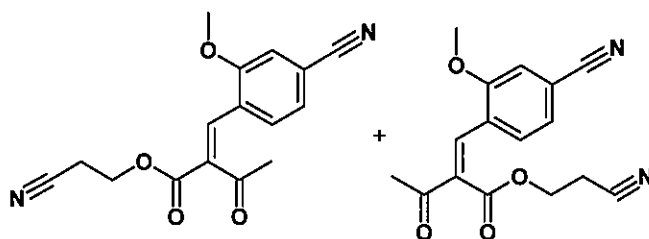
(VI)

dissolved in isopropanol (3-7 fold), 5-10 mol% of piperidine and 5-10 mol% of glacial acetic acid at 30°C is reacted with the compound of the formula (VII)



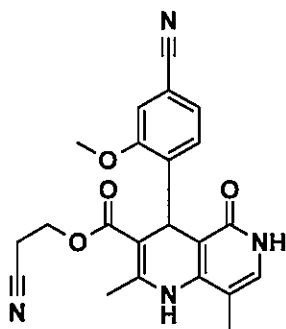
(VII)

to give the compounds (VIIIa+b).



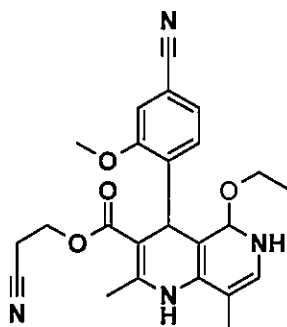
(VIII a+b)

and that the compound of the formula (X)



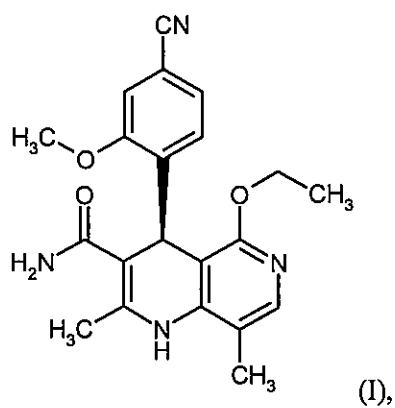
(X),

is reacted while stirring with 2.5 -5 eq of triethyl orthoacetate in dimethylacetamide at 100 to 120°C for 1.5 to 3 hours to give the compound of the formula (XI)



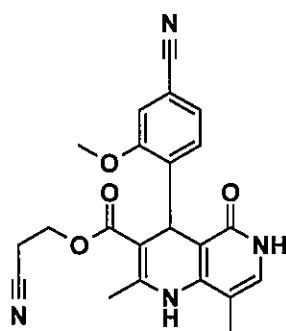
(XI).

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



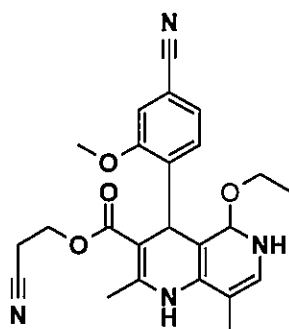
(I),

according to Claims 3 and 4, characterized in that the compound of the formula (X)



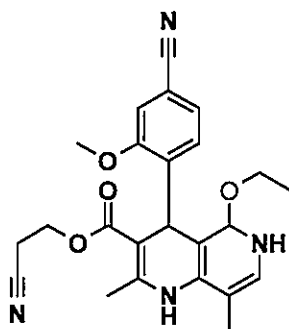
(X),

is reacted while stirring with 2.5 -5 eq of triethyl orthoacetate in dimethylacetamide at 100 to 120°C for 1.5 to 3 hours to give the compound of the formula (XI)



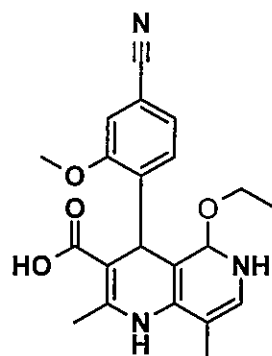
(XI)

and that the compound of the formula (XI)



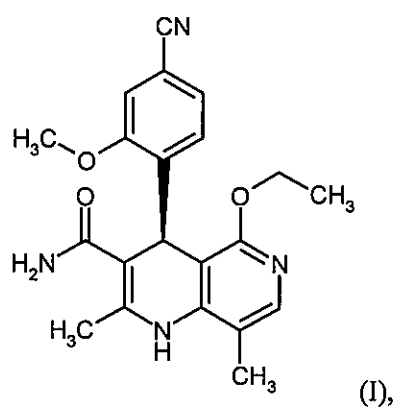
(XI)

is saponified in a THF/water mixture (2:1, 9-fold) with aqueous sodium hydroxide solution to give the compound of the formula (XII)



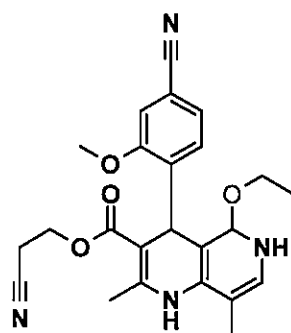
(XII).

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



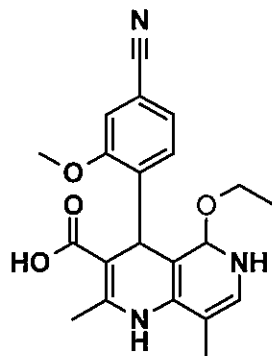
(I),

according to Claims 4 and 5, characterized in that the compound of the formula (XI)



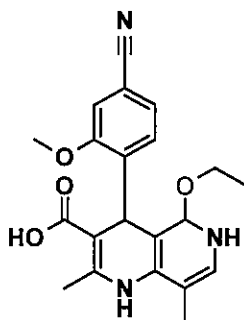
(XI)

is saponified in a THF/water mixture (2:1, 9-fold) with aqueous sodium hydroxide solution to give the compound of the formula (XII)



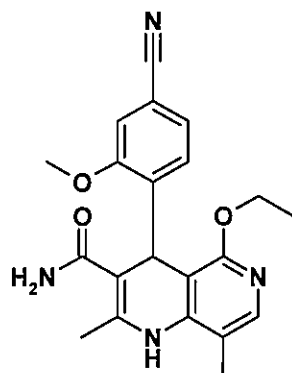
(XII)

and that the compound of the formula (XII)



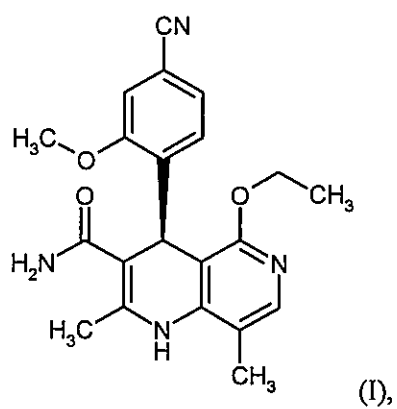
(XII)

is reacted in a one-pot reaction in THF firstly with carbodiimidazole and catalytic amounts of 4-(dimethylamino)pyridine, in a second step is heated under reflux together with hexamethyldisilazane for 16 to 24 hours and in a third step is hydrolysed in water with THF or water to give the compound of the formula (XIII)



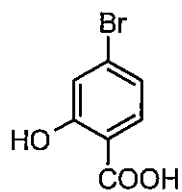
(XIII).

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

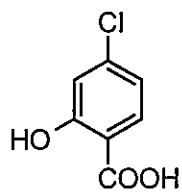


(I),

according to Claims 1, 2 and 3, characterized in that the compound of the formula (XIV) or the formula (XIVa)

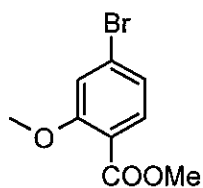


(XIV)

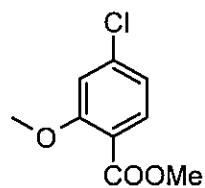


(XIVa)

are reacted by addition of dimethyl sulphate to give the compound of the formula (XV) or (XVa)

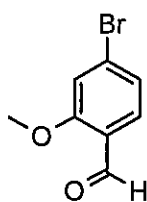


(XV)

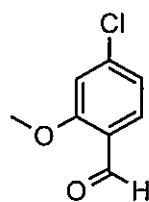


(XVa)

and the non-isolated methyl esters of the formula (XV) or (XVa) are reduced with 1.21 eq of REDAL (sodium bis(2-methoxyethoxy)aluminium dihydride and 1.28 eq of N-methylpiperazine to give the aldehyde of the formula (XVI) or (XVIa)

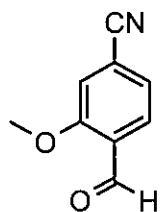


(XVI)



(XVIa),

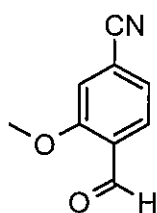
and the aldehyde (XVI) or (XVIa) is reacted further without isolation to give the nitrile of the formula (VI)



(VI)

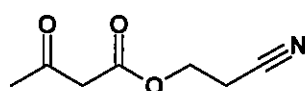
and

the compound of the formula (VI)



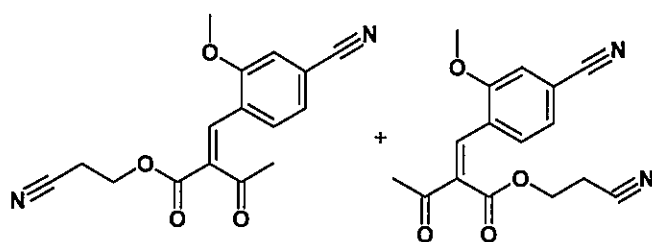
(VI)

dissolved in isopropanol (3-7 fold), 5-10 mol% of piperidine and 5- 10 mol% of glacial acetic acid at 30°C is reacted with the compound of the formula (VII)



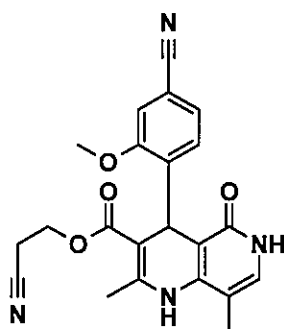
(VII)

to give the compounds (VIIIa+b)



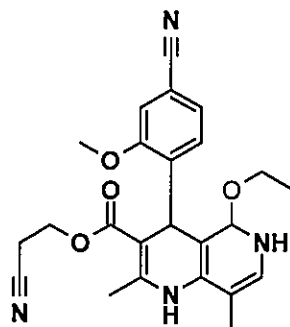
(VIII a+b)

and that the compound of the formula (X)



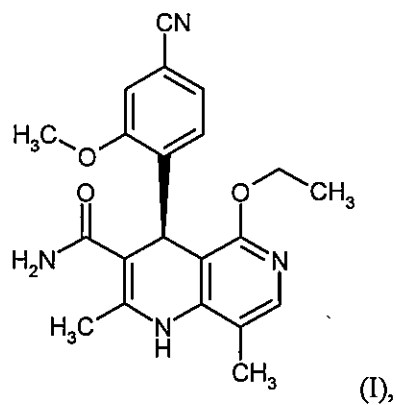
(X),

is reacted while stirring with 2.5 -5 eq of triethyl orthoacetate in dimethylacetamide at 100 to 120°C for 1.5 to 3 hours to give the compound of the formula (XI)



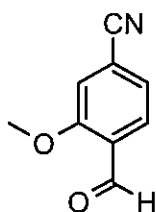
(XI).

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



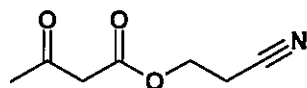
(I),

according to Claims 2, 3 and 4, characterized in that the compound of the formula (VI)



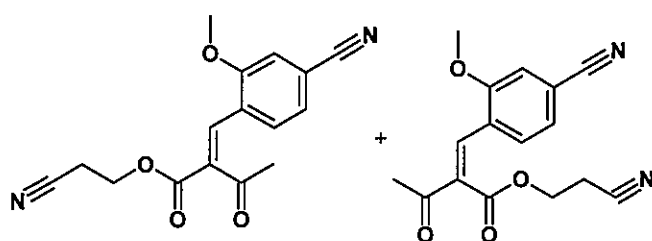
(VI)

dissolved in isopropanol (3-7 fold), 5-10 mol% of piperidine and 5-10 mol% of glacial acetic acid at 30°C is reacted with the compound of the formula (VII)



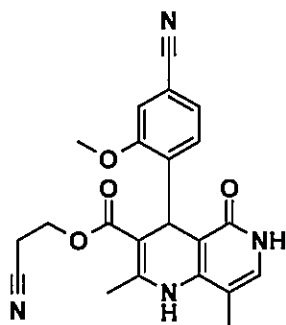
(VII)

to give the compounds (VIIIa+b)



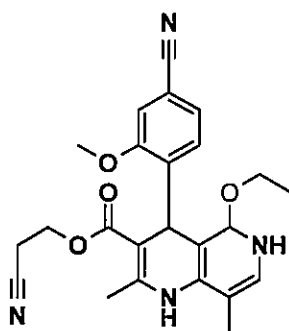
(VIII a+b)

and that the compound of the formula (X)



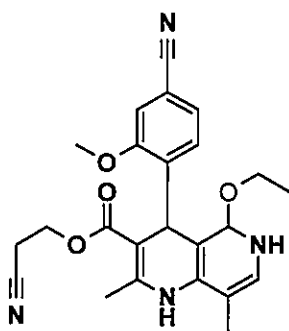
(X),

is reacted while stirring with 2.5 -5 eq of triethyl orthoacetate in dimethylacetamide at 100 to 120°C for 1.5 to 3 hours to give the compound of the formula (XI)



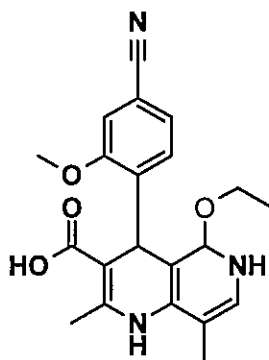
(XI)

and that the compound of the formula (XI)



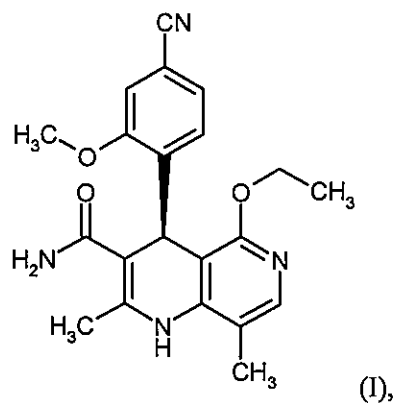
(XI)

is saponified in a THF/water mixture (2:1, 9-fold) with aqueous sodium hydroxide solution to give the compound of the formula (XII)

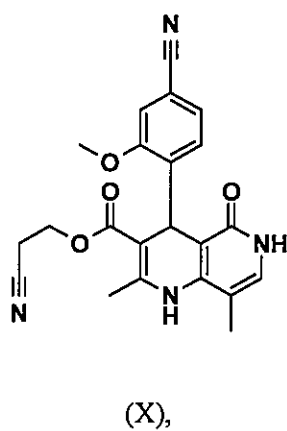


(XII).

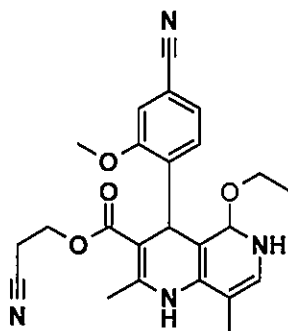
12. Process for preparing the compound of the formula (I)



according to Claims 3, 4 and 5, characterized in that the compound of the formula (X)

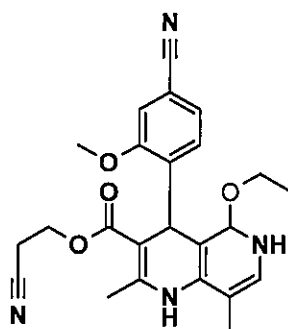


is reacted while stirring with 2.5 -5 eq of triethyl orthoacetate in dimethylacetamide at 100 to 120°C for 1.5 to 3 hours to give the compound of the formula (XI)



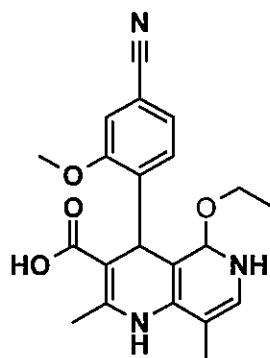
(XI)

and that the compound of the formula (XI)



(XI)

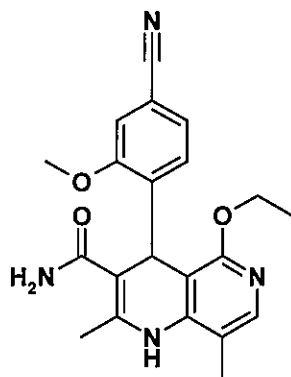
is saponified in a THF/water mixture (2:1, 9-fold) with aqueous sodium hydroxide solution to give the compound of the formula (XII)



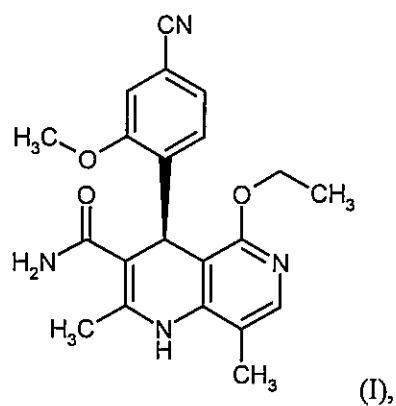
(XII)

and that the compound of the formula (XII)

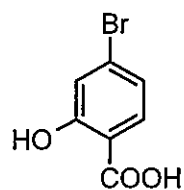
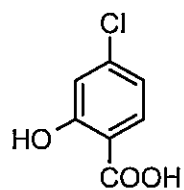
is reacted in a one-pot reaction in THF firstly with carbodiimidazole and catalytic amounts of 4-(dimethylamino)pyridine, in a second step is heated under reflux together with hexamethyldisilazane for 16 to 24 hours and in a third step is hydrolysed in water with THF or water to give the compound of the formula (XIII)



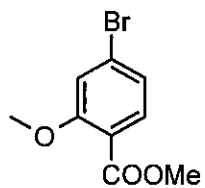
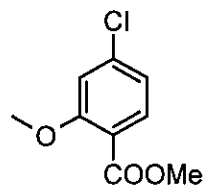
13. Process for preparing the compound of the formula (I)



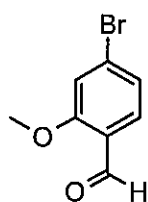
according to Claims 1, 2, 3 and 4, characterized in that the compound of the formula (XIV) or the formula (XIVa)



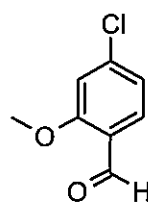
are reacted by addition of dimethyl sulphate to give the compound of the formula (XV) or (XVa)



and the non-isolated methyl esters of the formula (XV) or (XVa) are reduced with 1.21 eq of REDAL (sodium bis(2-methoxyethoxy)aluminium dihydride) and 1.28 eq of N-methylpiperazine to give the aldehyde of the formula (XVI) or (XVIa)

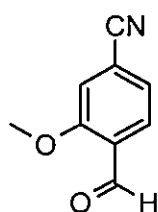


(XVI)



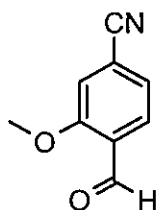
(XVIa),

and the aldehyde (XVI) or (XVIa) is reacted further without isolation to give the nitrile of the formula (VI)



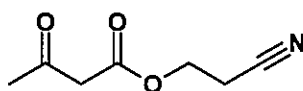
(VI)

and the compound of the formula (VI)



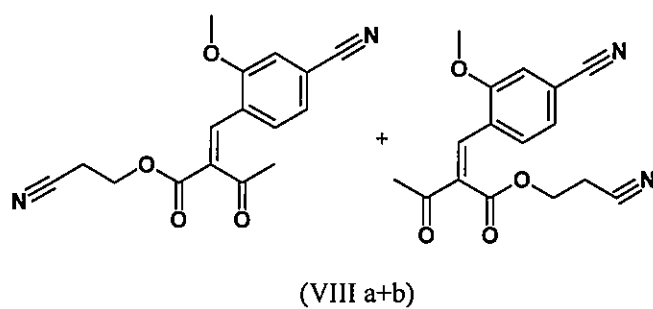
(VI)

dissolved in isopropanol (3-7 fold), 5-10 mol% of piperidine and 5-10 mol% of glacial acetic acid at 30°C is reacted with the compound of the formula (VII)

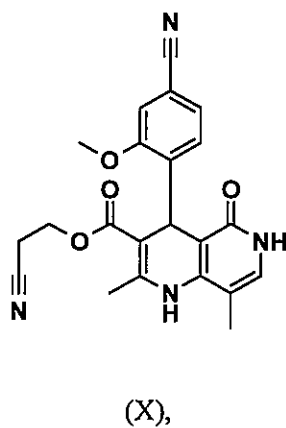


(VII)

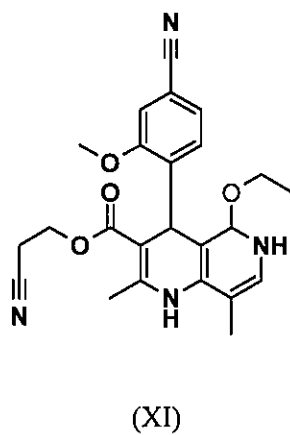
to give the compounds (VIIIa+b)



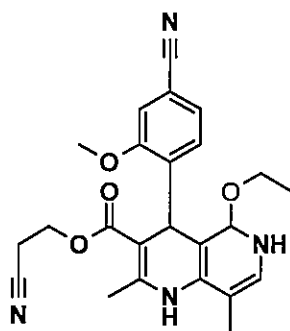
and that the compound of the formula (X)



is reacted while stirring with 2.5 -5 eq of triethyl orthoacetate in dimethylacetamide at 100 to 120°C for 1.5 to 3 hours to give the compound of the formula (XI)

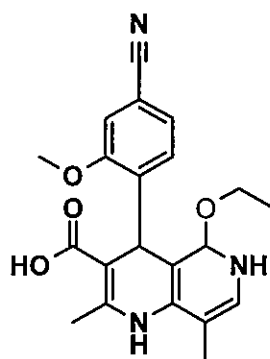


and that the compound of the formula (XI)



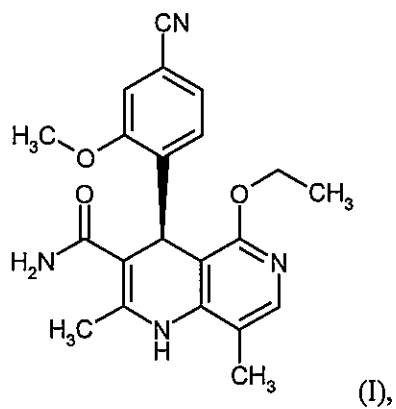
(XI)

is saponified in a THF/water mixture (2:1, 9-fold) with aqueous sodium hydroxide solution to give the compound of the formula (XII)



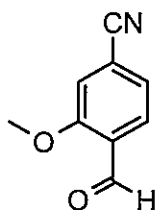
(XII).

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



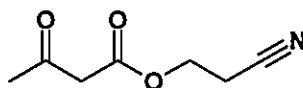
(I),

according to Claims 2, 3, 4 and 5, characterized in that the compound of the formula (VI)



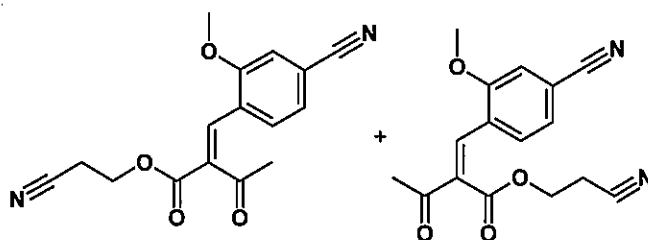
(VI)

dissolved in isopropanol (3-7 fold), 5-10 mol% of piperidine and 5- 10 mol% of glacial acetic acid at 30°C is reacted with the compound of the formula (VII)



(VII)

to give the compounds (VIIIa+b)

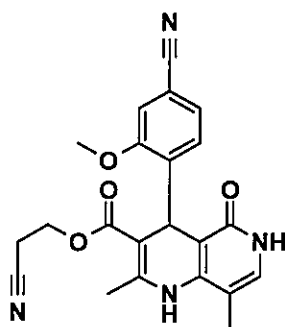


(VIII a+b)

and

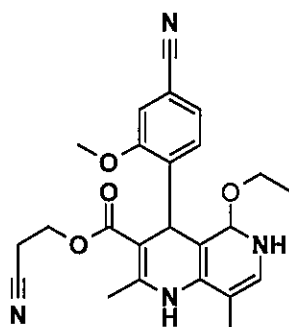
that the compound of the formula (X)

100



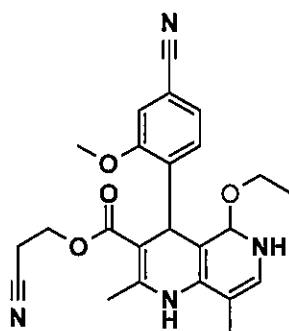
(X),

is reacted while stirring with 2.5 - 5 eq of triethyl orthoacetate in dimethylacetamide at 100 to 120°C for 1.5 to 3 hours to give the compound of the formula (XI)



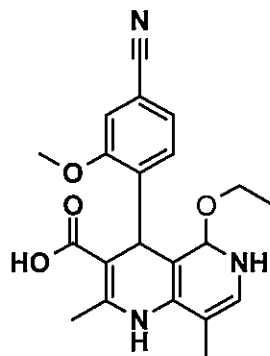
(XI)

and that the compound of the formula (XI)



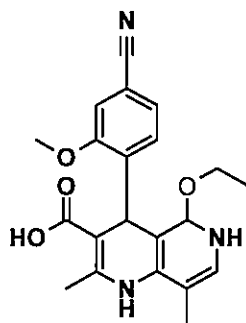
(XI)

is saponified in a THF/water mixture (2:1, 9-fold) with aqueous sodium hydroxide solution to give the compound of the formula (XII)



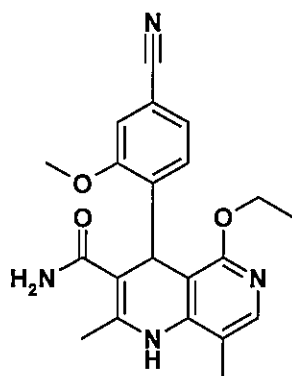
(XII)

and that the compound of the formula (XII)



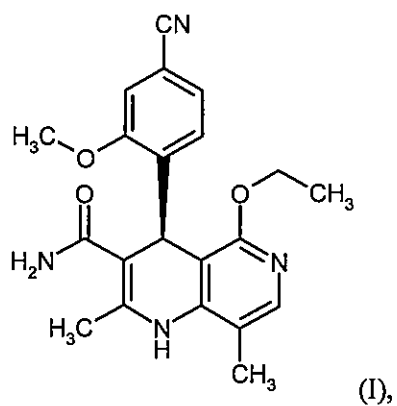
(XII)

is reacted in a one-pot reaction in THF firstly with carbodiimidazole and catalytic amounts of 4-(dimethylamino)pyridine, in a second step is heated under reflux together with hexamethyldisilazane for 16 to 24 hours and in a third step is hydrolysed in water with THF or water to give the compound of the formula (XIII)



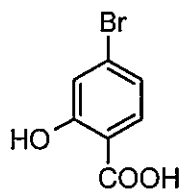
(XII).

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

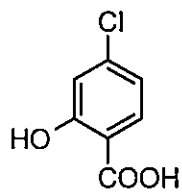


(I),

according to Claims 1, 2, 3, 4 and 5, characterized in that the compound of the formula (XIV) or the formula (XIVa)

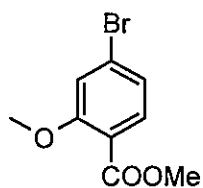


(XIV)

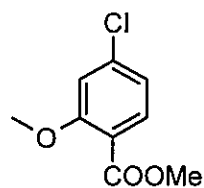


(XIVa)

are reacted by addition of dimethyl sulphate to give the compound of the formula (XV) or (XVa)

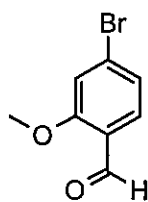


(XV)

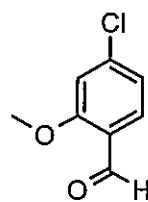


(XVa)

and the non-isolated methyl esters of the formula (XV) or (XVa) are reduced with 1.21 eq of REDAL (sodium bis(2-methoxyethoxy)aluminium dihydride and 1.28 eq of N-methylpiperazine to give the aldehyde of the formula (XVI) or (XVIa)

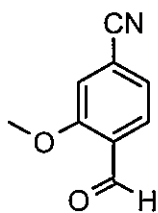


(XVI)



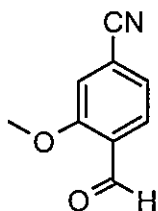
(XVIa),

and the aldehyde (XVI) or (XVIa) is reacted further without isolation to give the nitrile of the formula (VI)



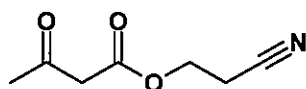
(VI)

and the compound of the formula (VI)



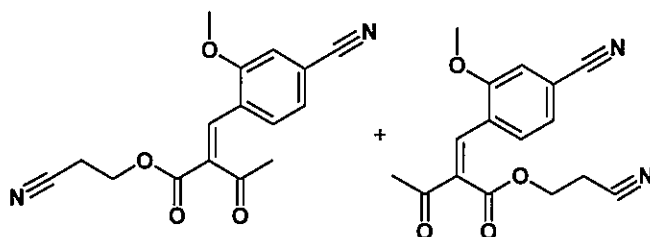
(VI)

dissolved in isopropanol (3-7 fold), 5-10 mol% of piperidine and 5-10 mol% of glacial acetic acid at 30°C is reacted with the compound of the formula (VII)



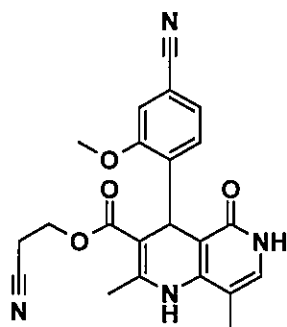
(VII)

to give the compounds (VIIIa+b)



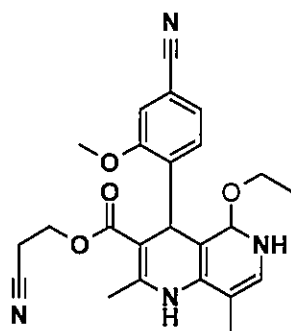
(VIII a+b)

and that the compound of the formula (X)



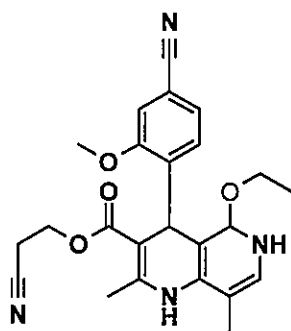
(X),

is reacted while stirring with 2.5 -5 eq of triethyl orthoacetate in dimethylacetamide at 100 to 120°C for 1.5 to 3 hours to give the compound of the formula (XI)



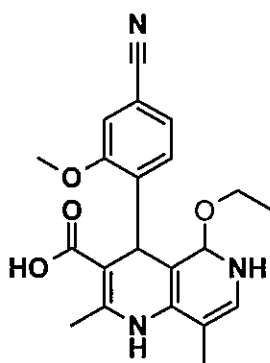
(XI)

and that the compound of the formula (XI)



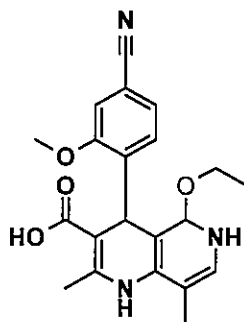
(XI)

is saponified in a THF/water mixture (2:1, 9-fold) with aqueous sodium hydroxide solution to give the compound of the formula (XII)



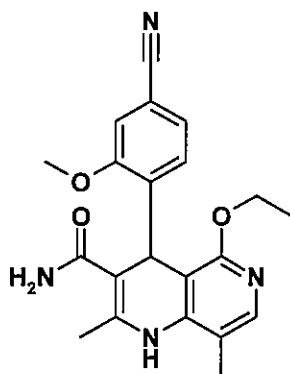
(XII)

and that the compound of the formula (XII)



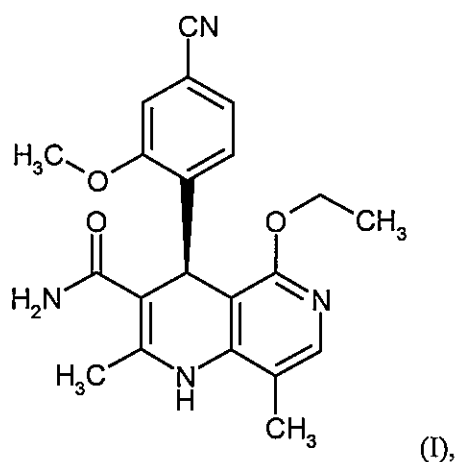
(XII)

is reacted in a one-pot reaction in THF firstly with carbodiimidazole and catalytic amounts of 4-(dimethylamino)pyridine, in a second step is heated under reflux together with hexamethyldisilazane for 16 to 24 hours and in a third step is hydrolysed in water with THF or water to give the compound of the formula (XIII)



(XIII).

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



characterized in that the Raman spectrum of the compound exhibits band maxima at 3074, 2920, 2231, 1601, 1577, 1443, 1327, 1267, 827, 155 cm^{-1} .

19. 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.
20. Compound according to any of Claims 16 to 18 for use in treatment of disorders.
21. Medicament comprising a compound according to any of Claims 16 to 18 and no greater proportions of any other form of the compound of the formula (I).
22. Medicament comprising a compound according to any of Claims 16 to 18 in more than 90 per cent by weight based on the total amount of the compound of the formula (I) present.
23. Use of the compound according to any of Claims 16 to 18 in the manufacture of a medicament for treatment of cardiovascular disorders.