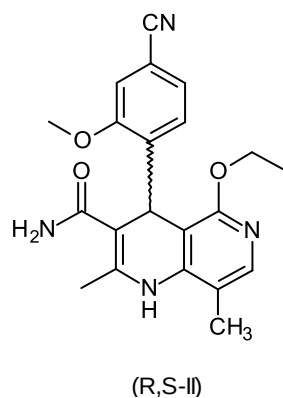


Claims

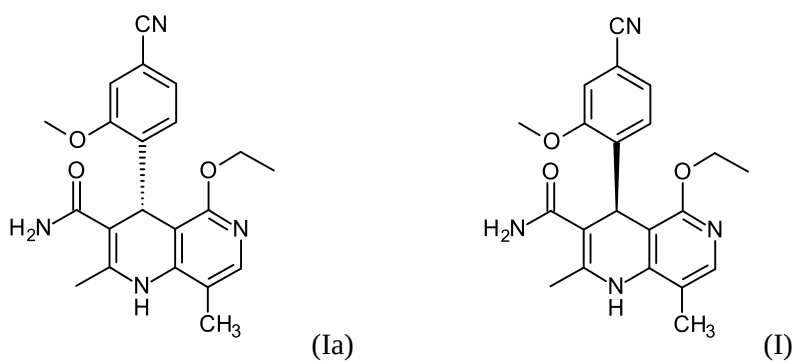
1. Racemate resolution of (II)

[Chemical Formula 3]

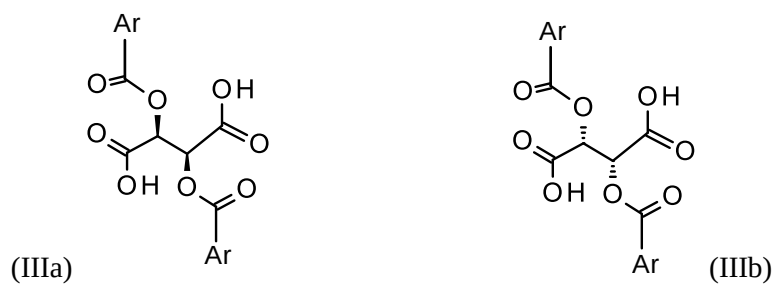


into (Ia) and/or (I)

[Chemical Formula 4]

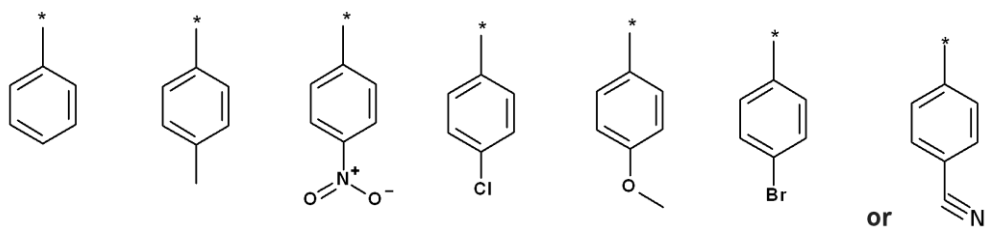


using chiral substituted tartaric acid ester of the general formulae (IIIa) or (IIIb)



where Ar represents

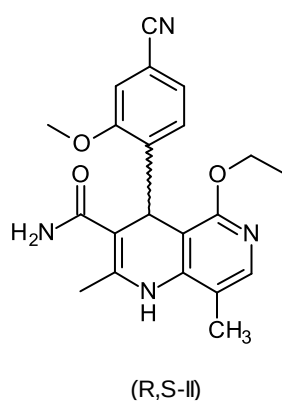
[Chemical Formula 2]



where * represents the point of attachment.

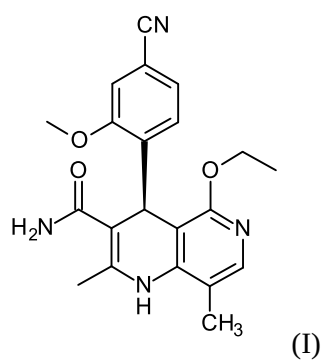
2. Process according to claim 1, characterized in that racemate resolution of the compound according to formula (II)

[Chemical Formula 5]



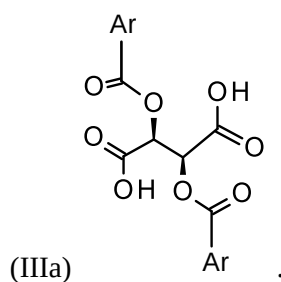
into (4S)-4-(4-cyano-2-methoxyphenyl)-5-ethoxy-2,8-dimethyl-1,4-dihydro-1,6-naphthyridine-3-carboxamide of the formula (I)

[Chemical Formula 6]



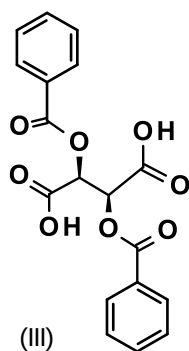
is carried out using a chiral substituted tartaric acid ester of the formula (IIIa)

[Chemical Formula 7]



3. Process according to Claim 1 or 2, characterized in that the racemate resolution is carried out in an ethanol/water mixture.
4. Process according to any of Claims 1 to 3, characterized in that the racemate resolution is carried out at a temperature in the range from 60 to 80°C.
5. Process according to any of Claims 1 to 4, characterized in that Ar represents phenyl.
6. Process according to any of Claims 1 to 5, characterized in that dibenzoyltartaric acid (III)

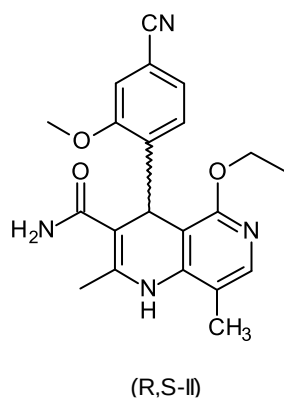
[Chemical Formula 8]



is employed for the racemate resolution.

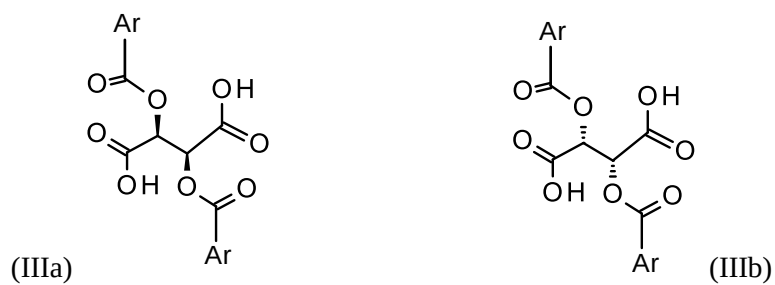
7. Process according to any of Claims 1 to 6, characterized in that the racemate

[Chemical Formula 9]



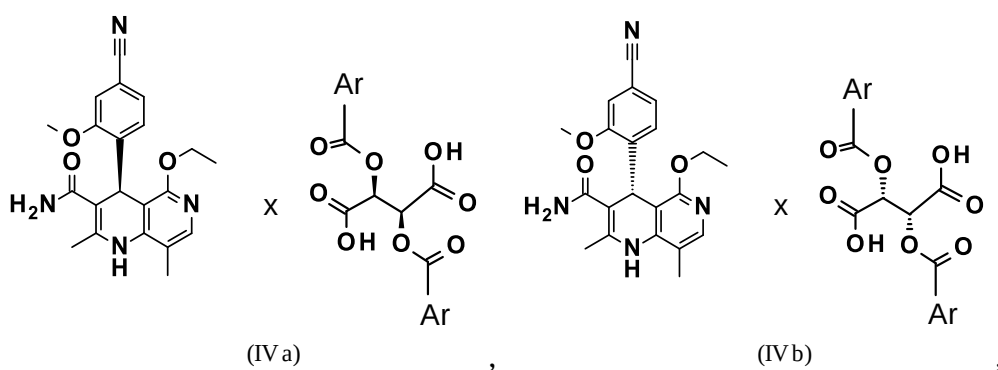
is reacted with chiral substituted tartaric acid ester of the general formulae (IIIa) or (IIIb)

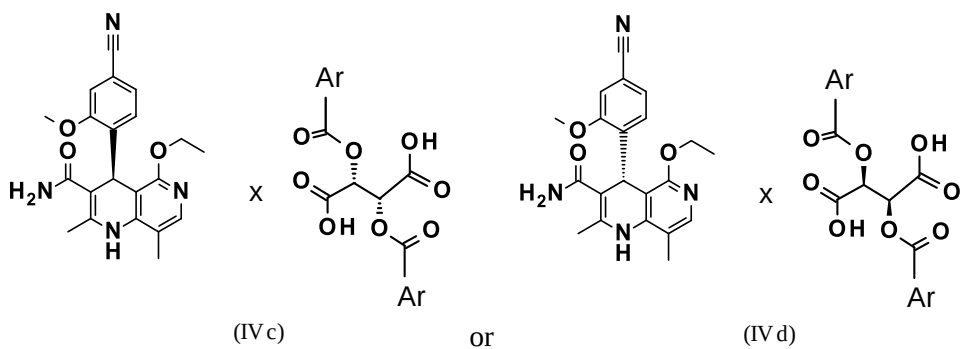
[Chemical Formula 10]



to give at least one of the diastereomeric salts (IVa), (IVb), (IVc) and/or (IVd)

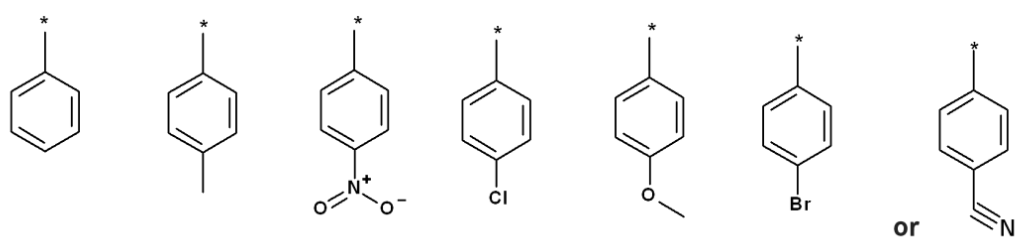
[Chemical Formula 11]





where Ar represents

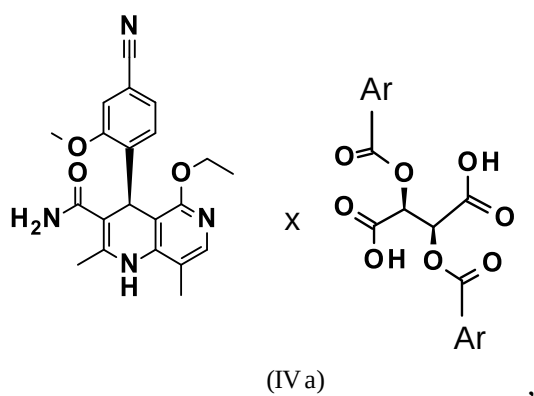
[Chemical Formula 12]

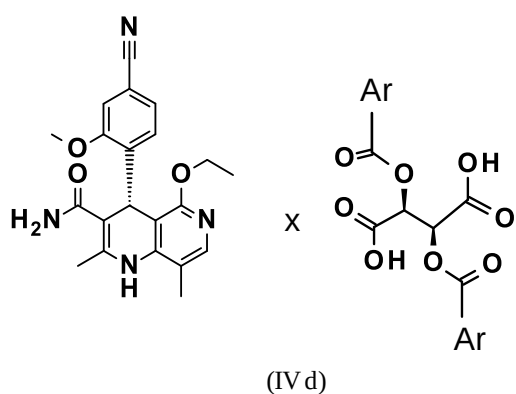
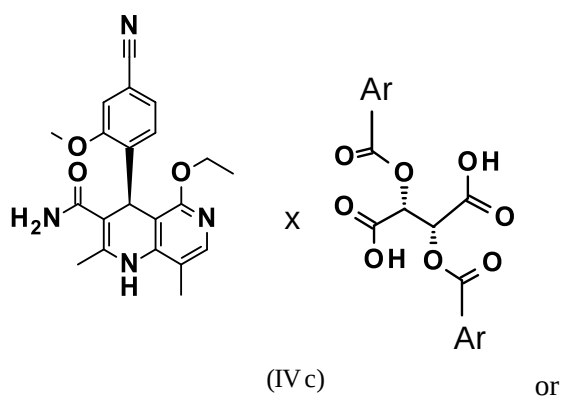
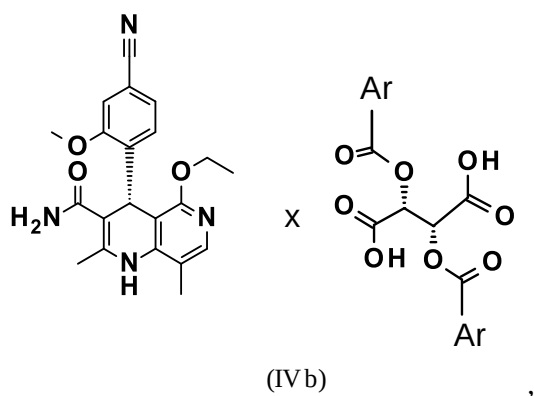


where * represents the point of attachment.

8. Process according to any one of Claims 1 to 7, characterized in that the diastereomeric salt (IVa), (IVb), (IVc) and/or (IVd)

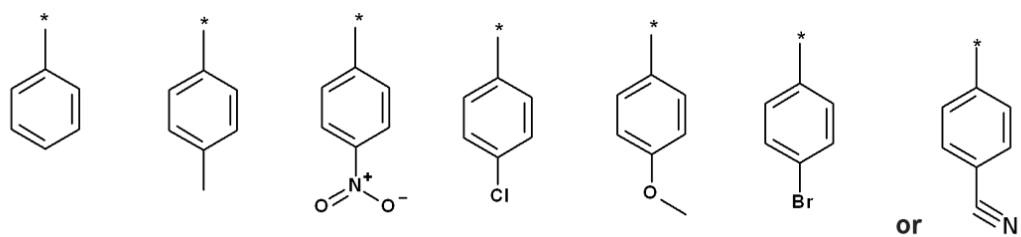
[Chemical Formula 13]





where Ar represents

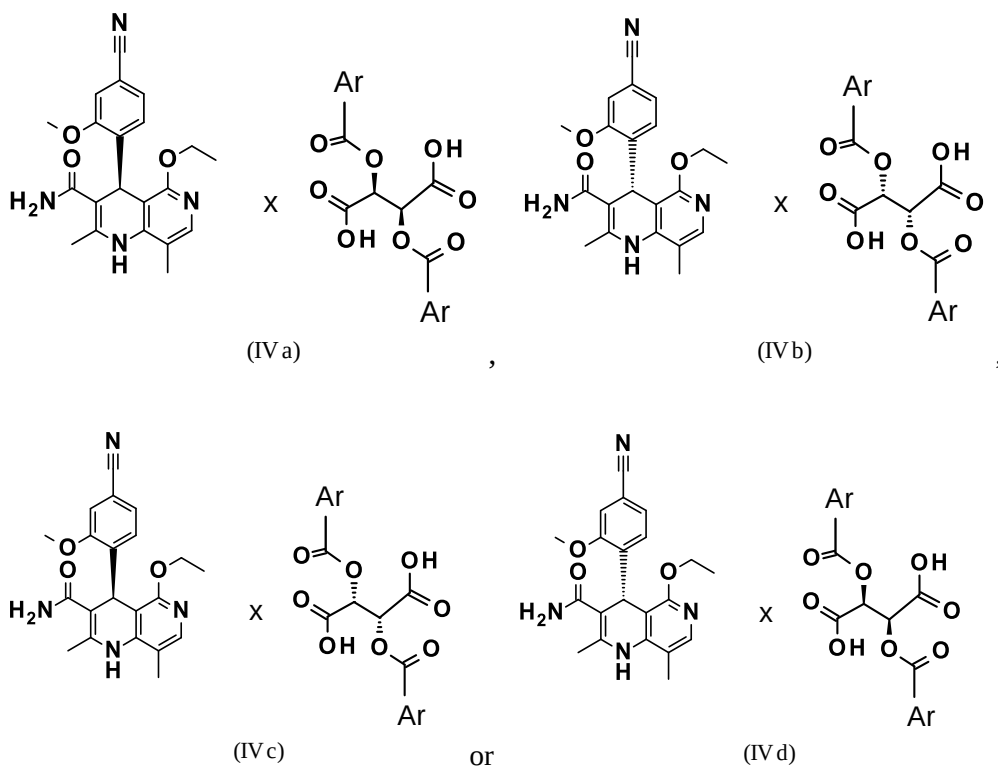
[Chemical Formula 14]



where * represents the point of attachment, precipitates.

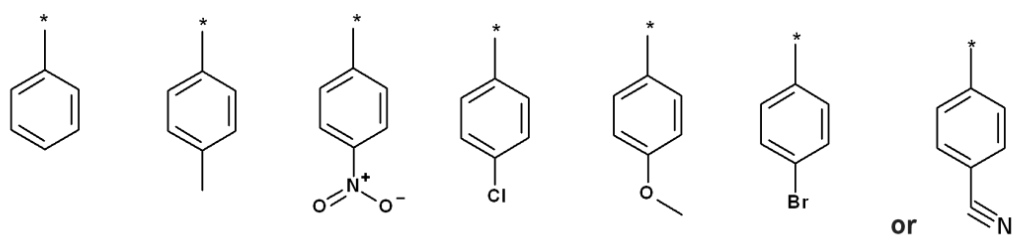
9. Process according to any of Claims 1 to 8, characterized in that the precipitated diastereomeric salt (IVa), (IVb), (IVc) and/or (IVd)

[Chemical Formula 15]



Ar represents

[Chemical Formula 16]



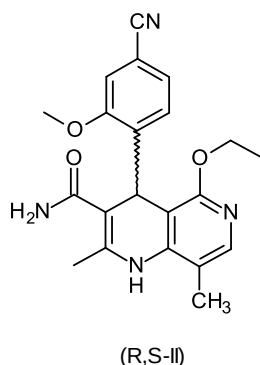
where * represents the point of attachment,

is isolated.

10. Process according to any of Claims 1 to 9, characterized in that formation of diastereomeric salts takes place in solvent mixtures comprising water and water-miscible organic solvents.

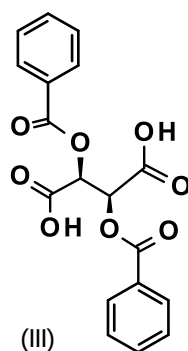
11. Process according to any of Claims 3 to 10, characterized in that the diastereomeric salt is treated with a base and the solvent is removed.
12. Process according to any of Claims 1 to 11, characterized in that the base used is potassium hydroxide, potassium phosphate or sodium phosphate.
13. Process according to any of Claims 1 to 12, characterized in that the water-miscible organic solvent is selected from ethanol, isopropanol, 1,2-ethandiol, methoxyethanol, methanol, acetone, spirit and mixtures thereof.
14. Process according to any of Claims 1 to 13, wherein the racemate

[Chemical Formula 17]



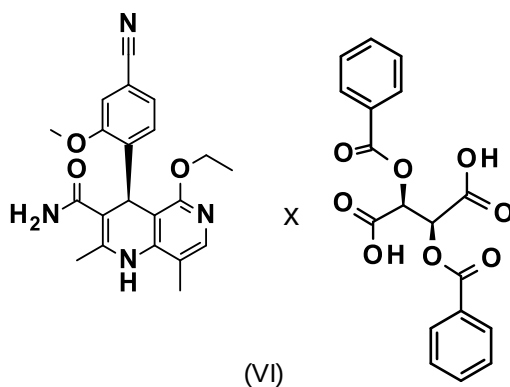
is reacted with dibenzoyltartaric acid of the formula (III)

[Chemical Formula 18]



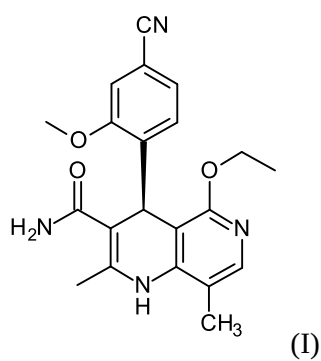
in a spirits/water mixture to give the diastereomeric salt (VI)

[Chemical Formula 19]



and subsequently the compound according to formula (I)

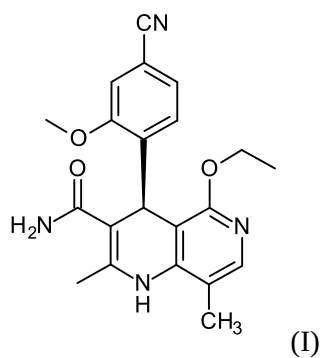
[Chemical Formula 20]



is released using sodium phosphate, likewise in a spirits/water mixture.

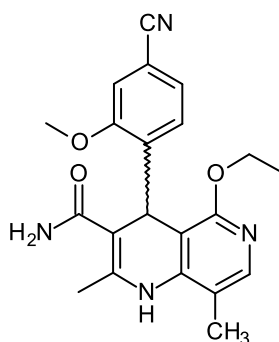
15. Use of the racemate resolution according to any one of claims 2 to 14 in a process for the preparation of (4S)-4-(4-cyano-2-methoxyphenyl)-5-ethoxy-2,8-dimethyl-1,4-dihydro-1,6-naphthyridine-3-carboxamide of the formula (I)

[Chemical Formula 24]



by racemate resolution of the formula (II)

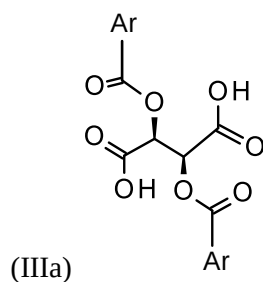
[Chemical Formula 23]



(R,S-II)

using a chiral substituted tartaric acid ester of the formula (IIIa)

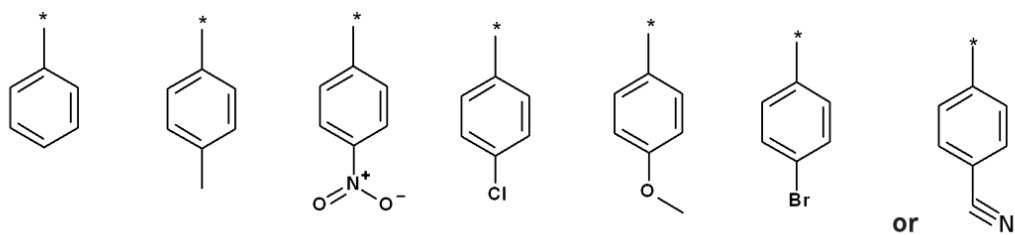
[Chemical Formula 21]



(IIIa)

Ar represents

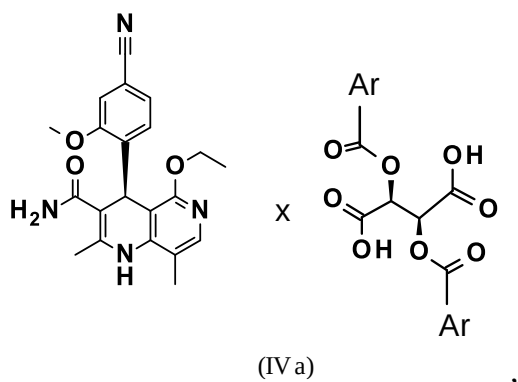
[Chemical Formula 22]



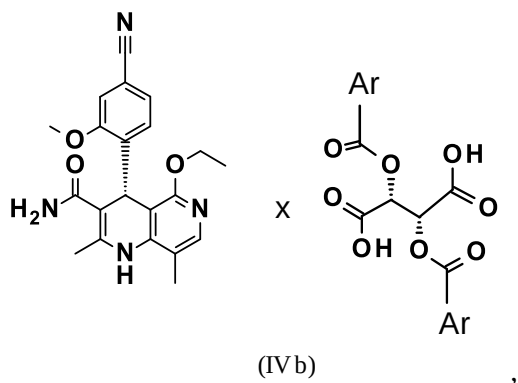
where * represents the point of attachment.

16. Diastereomeric salt of the formula

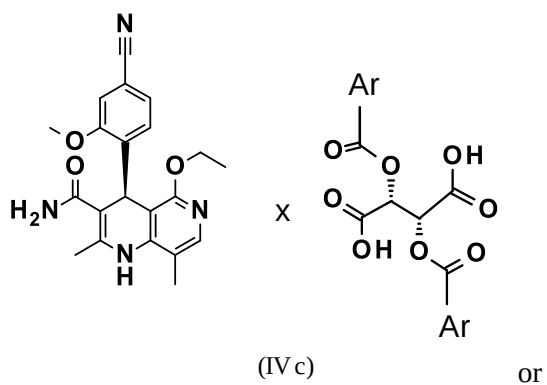
[Chemical Formula 25]



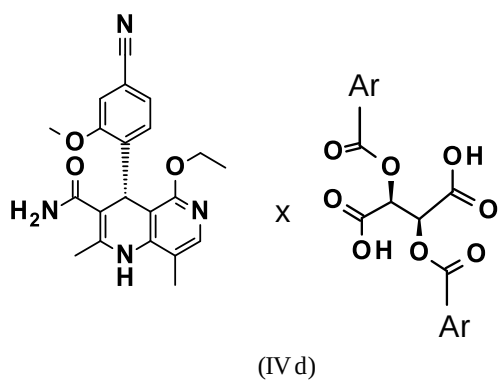
[Chemical Formula 26]



[Chemical Formula 27]



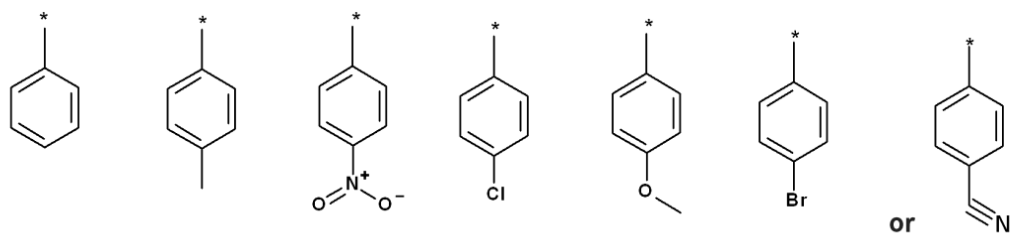
[Chemical Formula 28]



where

Ar represents

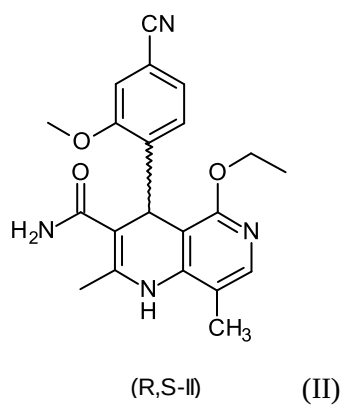
[Chemical Formula 29]



where * represents the point of attachment.

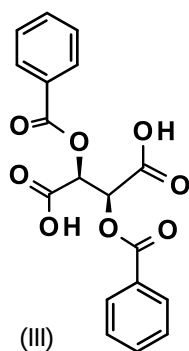
17. Diastereomeric salt according to Claim 16, characterized in that Ar is phenyl.
18. Diastereomeric salt according to Claim 16 or 17, characterized in that Ar represents phenyl.
19. A process for preparing the compound according to formula (I) having a dibenzoyltartaric acid content of $\leq 0.15\%$, which comprises a step of reacting a racemate (II)

[Chemical Formula 30]



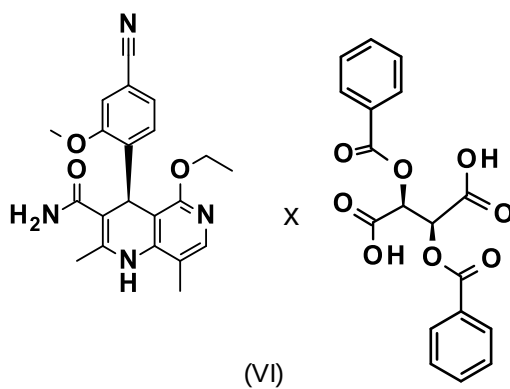
with dibenzoyltartaric acid of the formula (III)

[Chemical Formula 31]



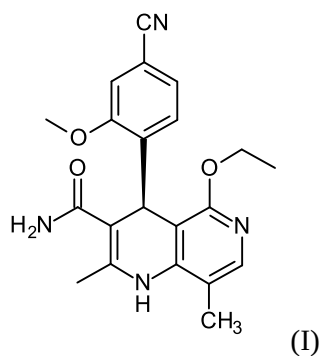
in a spirits/water mixture to give the diastereomeric salt (VI)

[Chemical Formula 32]



a step of releasing finerenone (I)

[Chemical Formula 33]



using sodium phosphate, likewise in a spirits/water mixture,

a step of again reacting with sodium phosphate in a spirits/water mixture and

a step of crystallizing pure finerenone having a dibenzoyltartaric acid content of $\leq 0.15\%$.

20. The process according to Claim 19, characterized in that the dibenzoyltartaric acid content of $\leq 0.1\%$.