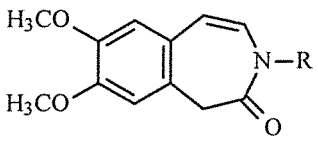
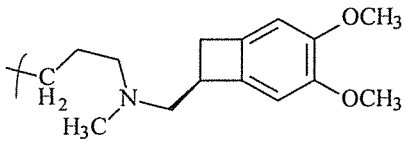
CLAIMS

1. Process for the synthesis of the compound of formula (I):



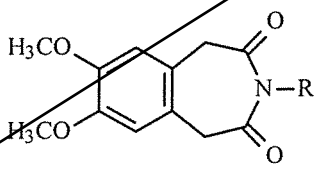
(I),

wherein R represents a *para*-methoxybenzyl (PMB) group or the following group:



,

characterised in that the compound of formula (VII):



(VII),

wherein R is as defined hereinbefore,

is subjected to a reduction reaction,

in the presence of $LiBH(Et)_3$,

in an organic solvent,

to yield the compound of formula (I).

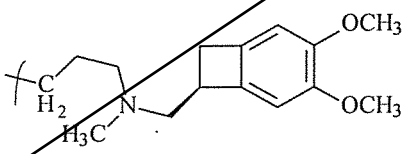
2. Synthesis process according to claim 1, characterised in that the amount of $LiBH(Et)_3$ used to carry out the reduction reaction on the compound of formula (VII) yielding the compound of formula (I) is from 1 to 3 equivalents.

3. Synthesis process according to either claim 1 or claim 2, characterised in that the organic solvent used to carry out the reduction reaction on the compound of formula (VII) yielding the compound of formula (I) is selected from tetrahydrofuran (THF), methyl tetrahydrofuran (MeTHF), dichloromethane, toluene and diisopropyl ether.

4. Synthesis process according to claim 3, characterised in that the organic solvent used to carry out the reduction reaction on the compound of formula (VII) yielding the compound of formula (I) is tetrahydrofuran.

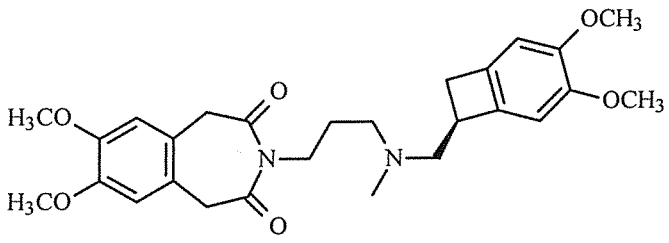
5. Synthesis process according to any one of claims 1 to 4, characterised in that the reduction reaction on the compound of formula (VII) yielding the compound of formula (I) is performed at a temperature from -100 °C to 20°C.

6. Process for the synthesis of ivabradine, in accordance with claim 1, wherein R represents the following group:



,

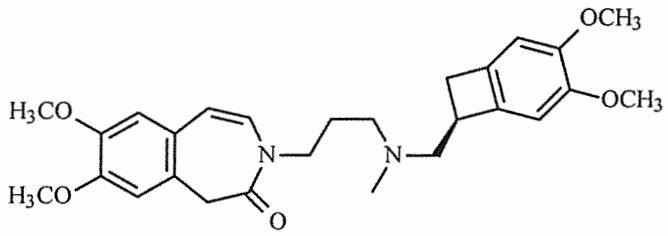
characterised in that the compound of formula (VIII), a particular case of the compounds of formula (VII):



(VIII)

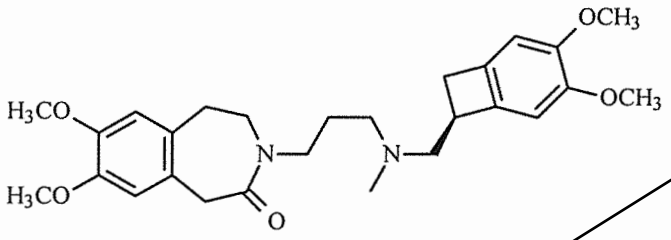
is subjected to a reduction reaction according to claim 1

to yield the compound of formula (VI), a particular case of the compounds of formula (I):



(VI)

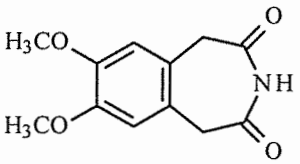
and then the compound of formula (VI) is subjected to catalytic hydrogenation to yield ivabradine of formula (II):



(II)

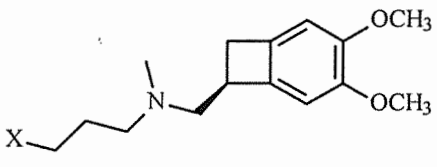
which may be converted into an addition salt thereof with a pharmaceutically acceptable acid selected from hydrochloric acid, hydrobromic acid, sulphuric acid, phosphoric acid, acetic acid, trifluoroacetic acid, lactic acid, pyruvic acid, malonic acid, succinic acid, glutaric acid, fumaric acid, tartaric acid, maleic acid, citric acid, ascorbic acid, oxalic acid, methanesulphonic acid, benzenesulphonic acid and camphoric acid, and into hydrates thereof.

7. Synthesis process according to claim 6, characterised in that the compound of formula (VIII) is prepared starting from the compound of formula (IX):



(IX),

which is reacted with the compound of formula (X):



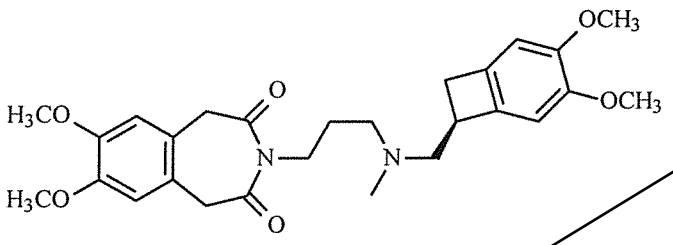
(X),

wherein X represents a halogen atom, a mesylate group or a tosylate group,

in the presence of a base,

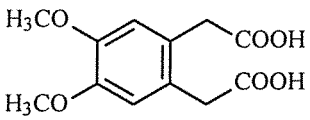
in an organic solvent,

to yield the compound of formula (VIII):



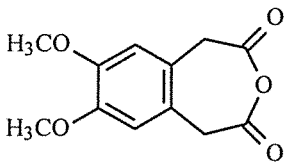
(VIII).

8. Synthesis process according to claim 6, characterised in that the compound of formula (VIII) is prepared starting from the compound of formula (XI):



(XI),

which is converted into the compound of formula (XII):

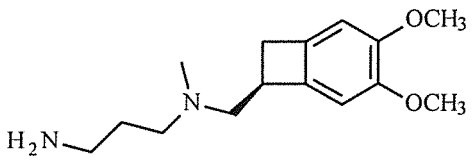


(XII)

in the presence of a coupling agent,

in an organic solvent,

said compound of formula (XII) then being reacted with the compound of formula (XIII):

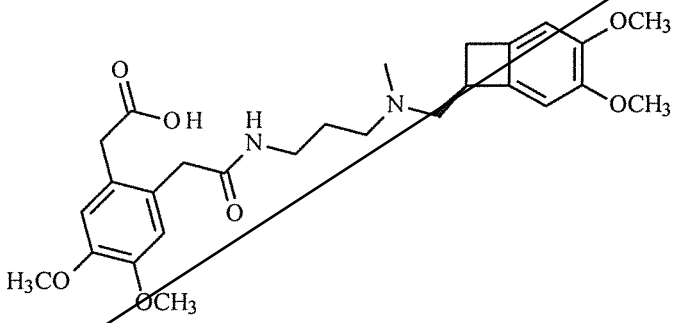


(XIII)

in the presence of a base,

in an organic solvent,

to yield the compound of formula (XIV):

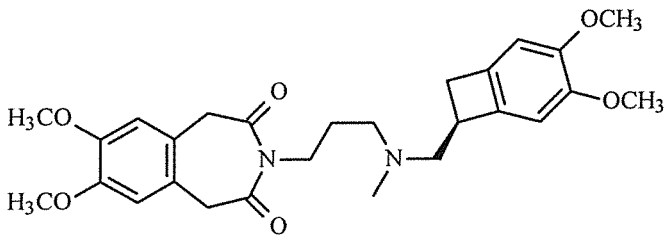


(XIV),

which is subjected to a cyclisation reaction in the presence of a coupling agent,

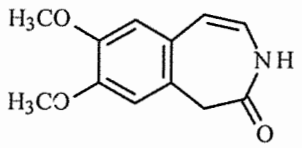
in an organic solvent,

to yield the compound of formula (VIII):



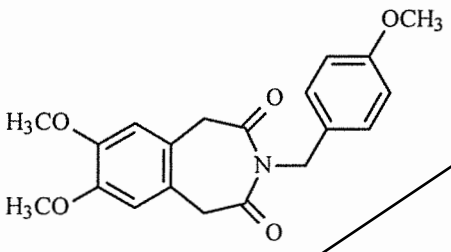
(VIII).

9. Process according to claim 1, wherein R represents a *para*-methoxybenzyl group, for preparation of the compound of formula (XV):



(XV),

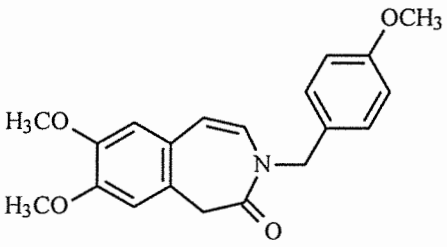
characterised in that the compound of formula (XVI), a particular case of the compounds of formula (VII):



(XVI)

is subjected to a reduction reaction according to claim 1

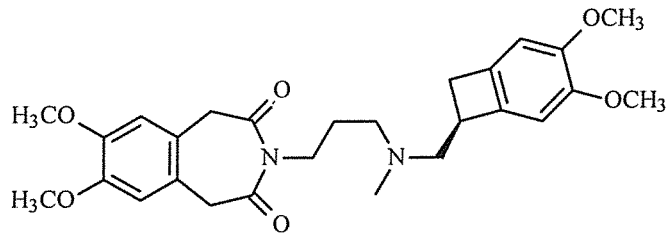
to yield the compound of formula (XVII), a particular case of the compounds of formula (I):



(XVII)

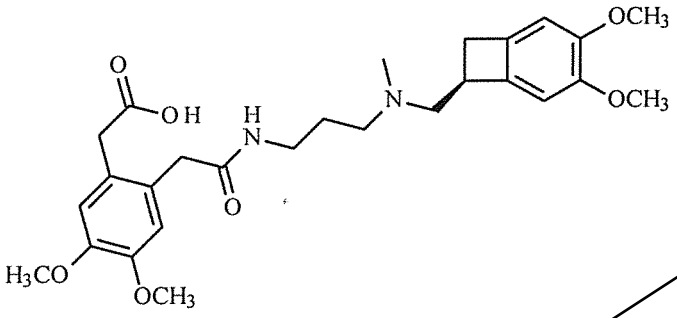
and then the compound of formula (XVII) is deprotected to yield the compound of formula (XV).

10. Compound of formula (VIII):



(VIII).

11. Compound of formula (XIV):

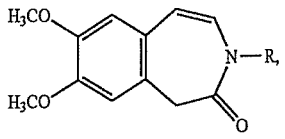


(XIV).

CLAIMS

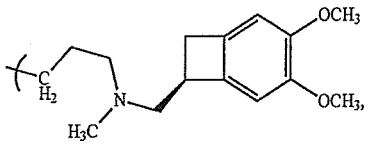
The invention claimed is:

1. A process for the synthesis of a compound of formula (I):

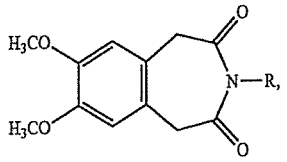


(I)

wherein R represents a para-methoxybenzyl (PMB) group or the following group:



wherein a compound of formula (VII):



(VII)

wherein R is as defined hereinbefore,
is subjected to a reduction reaction,
in the presence of $LiBH(Et)_3$,
in an organic solvent,
to yield the compound of formula (I).

2. The process according to claim 1, wherein the amount of $LiBH(Et)_3$ used to carry out the reduction reaction on the compound of formula (VII) yielding the compound of formula (I) is from 1 to 3 equivalents.

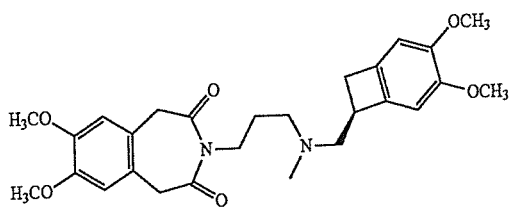
3. The process according to claim 1, wherein the organic solvent used to carry out the reduction reaction on the compound of formula (VII) yielding the compound of formula (I) is selected from the group consisting of tetrahydrofuran (THF), methyl tetrahydrofuran (MeTHF), dichloromethane, toluene and diisopropyl ether.

4. The process according to claim 3, wherein the organic solvent used to carry out the reduction reaction on the compound of formula (VII) yielding the compound of formula (I) is tetrahydrofuran.

5. The process according to claim 1, wherein the reduction reaction on the compound of formula (VII) yielding the compound of formula (I) is performed at a temperature from −100° C. to 20° C.

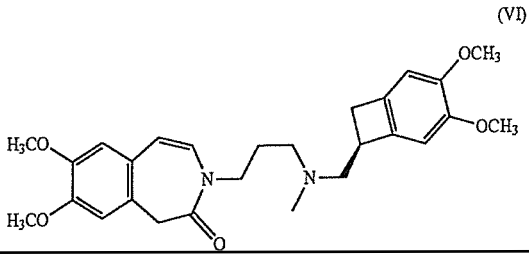
6. A process for the synthesis of ivabradine, wherein a compound of formula (VIII):

(VIII)



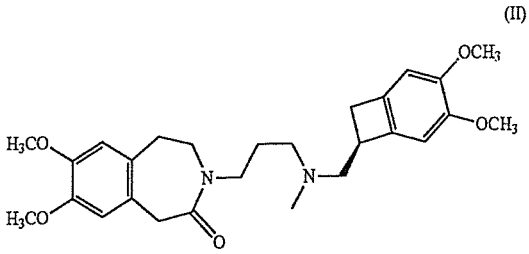
is subjected to a reduction reaction according to claim 1 to yield a compound of formula (VI),:

(VI)



which compound of formula (VI) is subjected to catalytic hydrogenation to yield ivabradine of formula (II):

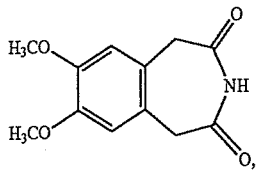
(II)



which may be converted into an addition salt thereof with a pharmaceutically acceptable acid selected from hydrochloric acid, hydrobromic acid, sulphuric acid, phosphoric acid, acetic

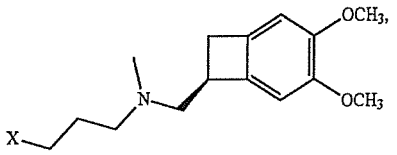
acid, trifluoroacetic acid, lactic acid, pyruvic acid, malonic acid, succinic acid, glutaric acid, fumaric acid, tartaric acid, maleic acid, citric acid, ascorbic acid, oxalic acid, methanesulphonic acid, benzenesulphonic acid and camphoric acid, and into hydrates thereof.

7. The process according to claim 6, wherein the compound of formula (VIII) is prepared starting from a compound of formula (IX):



(IX)

which is reacted with a compound of formula (X):



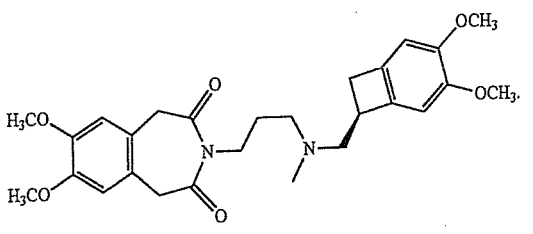
(X)

wherein X represents a halogen atom, a mesylate group or a tosylate group,

in the presence of a base,

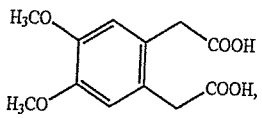
in an organic solvent,

to ~~yield the compound of formula (VIII):~~



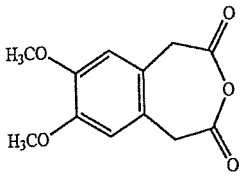
(VIII)

8. The process according to claim 6, wherein the compound of formula (VIII) is prepared starting from a compound of formula (XI):



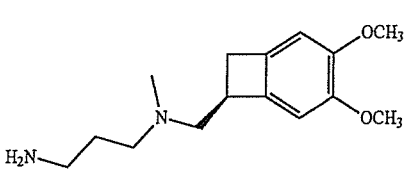
(XI)

which is converted into a compound of formula (XII):



(XII)

in the presence of a coupling agent,
in an organic solvent,
which compound of formula (XII) is then reacted with a compound of formula (XIII):



(XIII)

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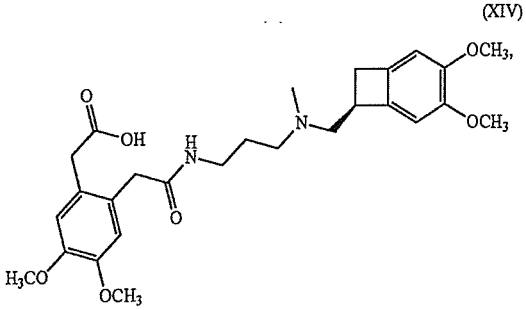
in the presence of a base,
in an organic solvent,
to yield a compound of formula (XIV):



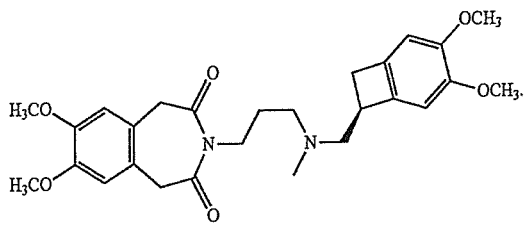
(XIV)

which is subjected to a cyclisation reaction in the presence of a coupling agent,

in an organic solvent,

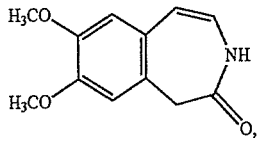
to yield the compound of formula (VIII):

(VIII)



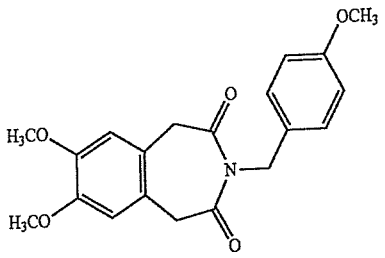
9. A process for preparation of a compound of formula (XV):

(XV)



wherein a compound of formula (XVI):

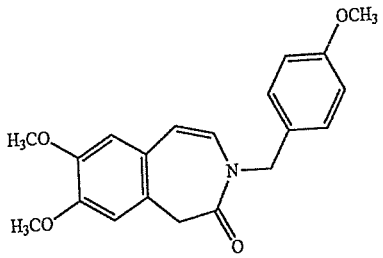
(XVI)



is subjected to a reduction reaction according to claim 1

to yield a compound of formula (XVII):

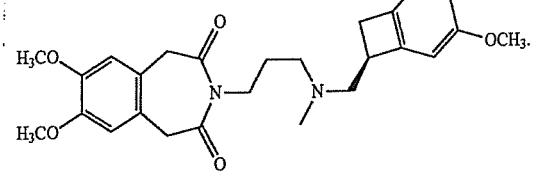
(XVII)



which compound of formula (XVII) is deprotected to yield the compound of formula (XV).

10. A compound of formula (VIII):

(VIII)



11. A compound of formula (XIV):

(XIV)

