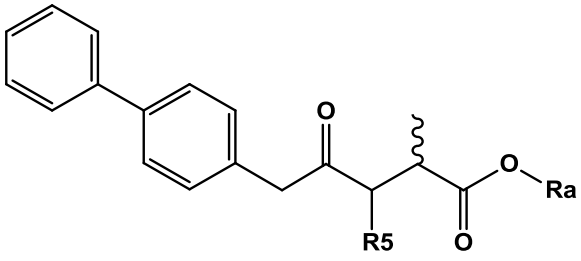
**Revised claims dated 22-July-2019**

**Marked up claims**

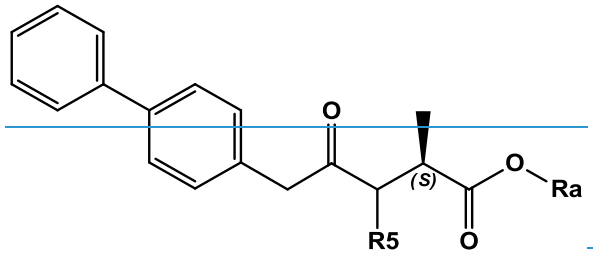
**We Claim:**

1. A compound of formula (XV), or a salt thereof




(XV)

~~preferably of formula (XV-a)~~




~~(XV-a)~~

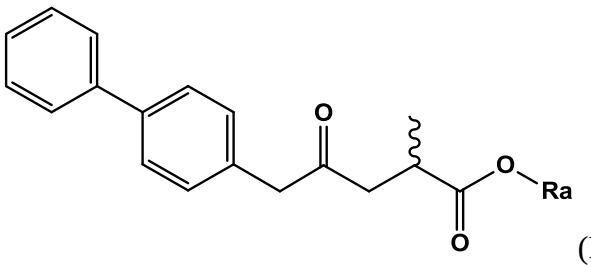
wherein

R5 is selected from hydrogen and a group –CO-OR*, and

Ra and R* are, independently of each other, selected from hydrogen, a carboxyl protecting group, and $C_1$-$C_6$-alkyl, ~~preferably ethyl,~~wherein the carboxyl protecting group is selected from $C_6$-$C_{10}$-aryl-$C_1$-$C_6$-alkyl and SiR11R12R13, wherein R11, R12, and R13 are, independently of each other, $C_1$-$C_7$-alkyl, $C_6$-$C_{10}$-aryl or phenyl-$C_1$-$C_4$-alkyl.

2. The compound of formula (XV) as claimed in ~~according to~~ claim 1, wherein

a) the compound is of formula (I), or a salt thereof;

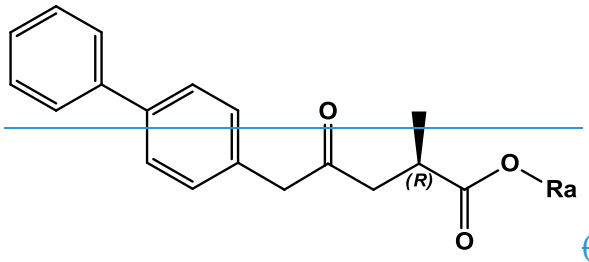



(I)

~~preferably of formula (I-a), or a salt thereof;~~

**Revised claims dated 22-July-2019**

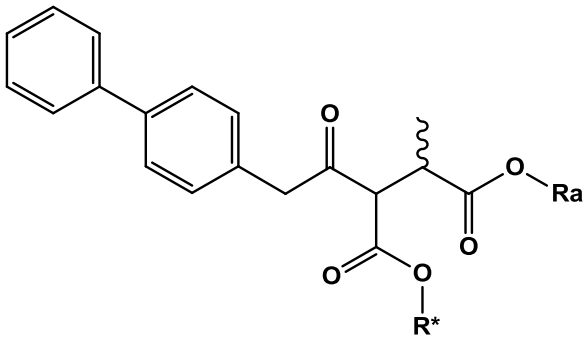
**Marked up claims**



~~(I-a)~~

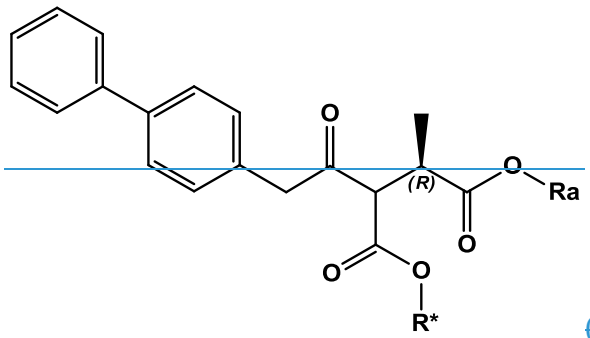
wherein Ra is selected from hydrogen, a carboxyl protecting group, and $C_1$-$C_6$-alkyl, ~~preferably ethyl,~~ wherein the carboxyl protecting group is selected from $C_6$-$C_{10}$-aryl-$C_1$-$C_6$-alkyl and SiR11R12R13, wherein R11, R12, and R13 are, independently of each other, $C_1$-$C_7$-alkyl, $C_6$-$C_{10}$-aryl or phenyl-$C_1$-$C_4$-alkyl or

b) the compound is of formula (II), or a salt thereof;



(II)

~~preferably of formula (II-a), or a salt thereof;~~



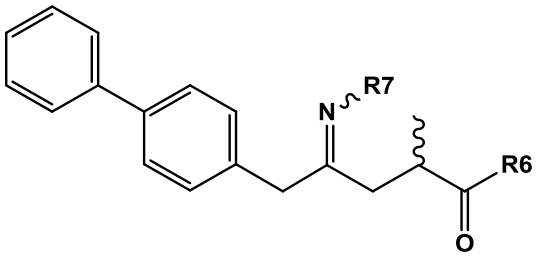
~~(II-a)~~

wherein Ra and R* are, independently of each other, selected from hydrogen, a carboxyl protecting group, and $C_1$-$C_6$-alkyl, ~~preferably ethyl~~wherein the carboxyl protecting group is selected from $C_6$-$C_{10}$-aryl-$C_1$-$C_6$-alkyl and SiR11R12R13, wherein R11, R12, and R13 are, independently of each other, $C_1$-$C_7$-alkyl, $C_6$-$C_{10}$-aryl or phenyl-$C_1$-$C_4$-alkyl.

3. A compound of formula (XVI), or a salt thereof

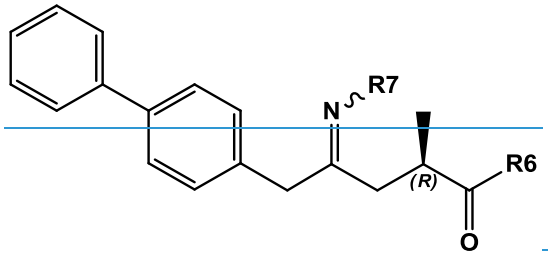
**Revised claims dated 22-July-2019**

**Marked up claims**




(XVI)

~~preferably of formula (XVI-a)~~




~~(XVI-a)~~

wherein

R6 is -O-Ra, and R7 is selected from

- -S(=O)-Rb
- -OH
- A, wherein A is -O-C(=O)-Rc or -O-Rd

wherein Ra is selected from hydrogen, a carboxyl protecting group, and $C_1$-$C_6$-alkyl, ~~preferably ethyl,~~ wherein the carboxyl protecting group is selected from $C_6$-$C_{10}$-aryl-$C_1$-$C_6$-alkyl and SiR11R12R13, wherein R11, R12, and R13 are, independently of each other, $C_1$-$C_7$-alkyl, $C_6$-$C_{10}$-aryl or phenyl-$C_1$-$C_4$-alkyl and

Rb, Rc and Rd are independently selected from $C_1$-$C_6$-alkyl, $C_6$-$C_{10}$-aryl, $C_6$-$C_{10}$-aryl-$C_1$-$C_6$-alkyl, $C_3$-$C_8$-cycloalkyl, $C_3$-$C_8$-cycloalkyl-$C_1$-$C_6$-alkyl, heterocyclyl or heterocyclyl-$C_1$-$C_6$-alkyl, wherein said heterocyclyl is a mono- or polycyclic, unsaturated, partially saturated, saturated or aromatic ring system with 5 to 14 ring atoms and with one or more heteroatoms independently selected from nitrogen, oxygen, sulfur, S(=O)- or S-$(=O)_2$, and wherein each aryl or heterocyclyl group can be optionally substituted by one, two or three substituents independently selected from halo, $C_1$-$C_7$-alkyl, halo-$C_1$-$C_7$-alkyl, and $C_1$-$C_7$-alkoxy, halo-$C_1$-$C_7$-alkoxy, and $C_1$-$C_7$-alkoxy-$C_1$-$C_7$-alkyl, or

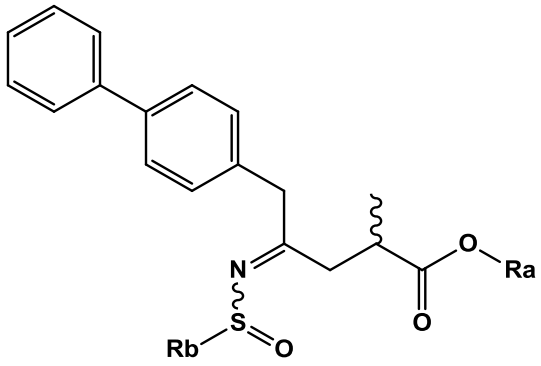
R6 and R7 together represent –O– or form a bond.

**Revised claims dated 22-July-2019**

**Marked up claims**

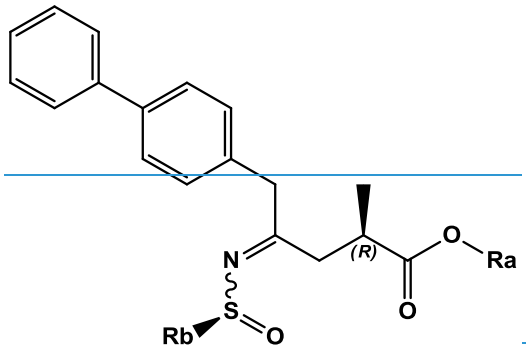
4. The compound of formula (XVI) as claimed in ~~according to~~ claim 3, wherein

a) the compound is of formula (X), or a salt thereof;




(X)

~~preferably of formula (X-a),~~



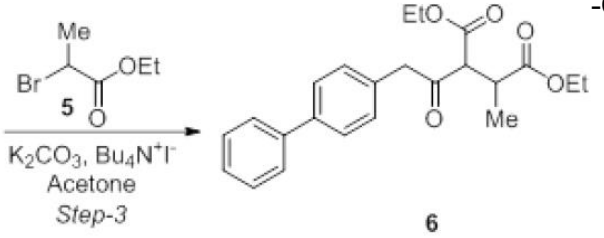

~~(X-a)~~

wherein

Ra is selected from hydrogen, a carboxyl protecting group, and $C_1$-$C_6$-alkyl, ~~preferably ethyl,~~ wherein the carboxyl protecting group is selected from $C_6$-$C_{10}$-aryl-$C_1$-$C_6$-alkyl and SiR11R12R13, wherein R11, R12, and R13 are, independently of each other, $C_1$-$C_7$-alkyl, $C_6$-$C_{10}$-aryl or phenyl-$C_1$-$C_4$-alkyl,

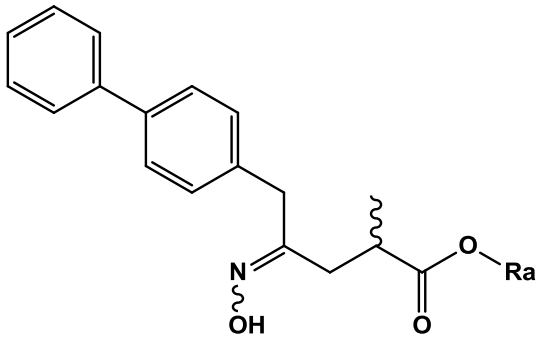
Rb is selected from $C_1$-$C_6$-alkyl, $C_6$-$C_{10}$-aryl, $C_6$-$C_{10}$-aryl-$C_1$-$C_6$-alkyl, $C_3$-$C_8$-cycloalkyl, $C_3$-$C_8$-cycloalkyl-$C_1$-$C_6$-alkyl, heterocyclyl or heterocyclyl-$C_1$-$C_6$-alkyl, wherein said heterocyclyl is a mono- or polycyclic, unsaturated, partially saturated, saturated or aromatic ring system with 5 to 14 ring atoms and with one or more heteroatoms independently selected from nitrogen, oxygen, sulfur, S(=O)- or S-(=O)$_2$, and wherein each aryl or heterocyclyl group can be optionally substituted by one, two or three substituents independently selected from halo, $C_1$-$C_7$-a -$C_1$-$C_7$-alkoxy, and $C_1$-$C_7$-alkoxy-$C_1$-$C_7$-alky

b) the compound is



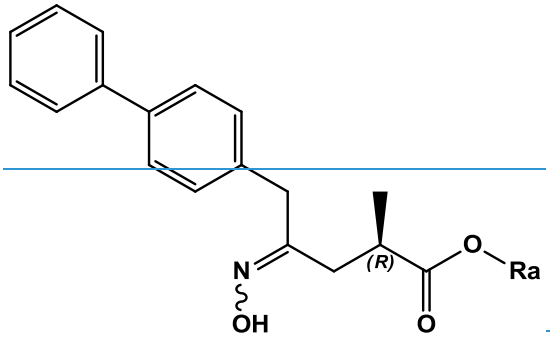
**Revised claims dated 22-July-2019**

**Marked up claims**




(XVII)

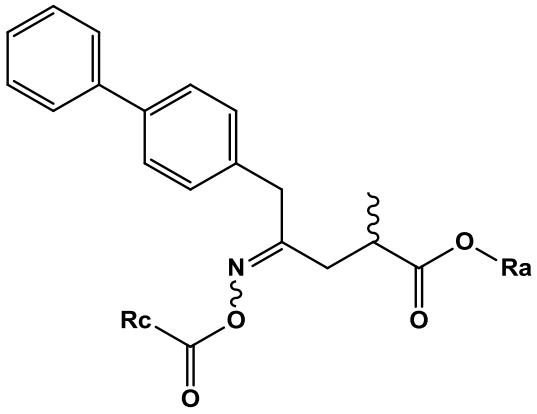
~~preferably of formula (XVII-a),~~




~~(XVII-a)~~

wherein Ra is selected from hydrogen, a carboxyl protecting group, and $C_1$-$C_6$-alkyl, ~~preferably ethyl,~~ wherein the carboxyl protecting group is selected from $C_6$-$C_{10}$-aryl-$C_1$-$C_6$-alkyl and SiR11R12R13, wherein R11, R12, and R13 are, independently of each other, $C_1$-$C_7$-alkyl, $C_6$-$C_{10}$-aryl or phenyl-$C_1$-$C_4$-alkyl,

c) the compound is of formula (XVII*),

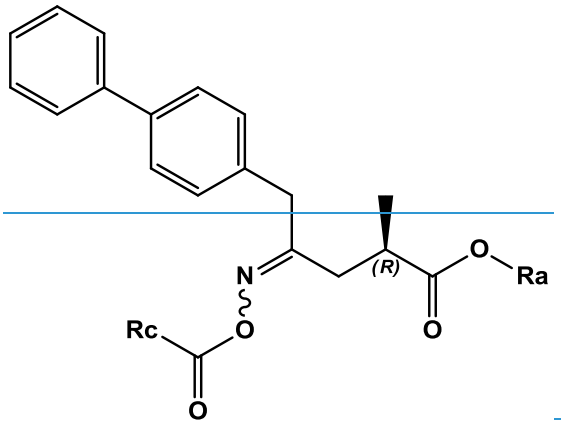



(XVII*)

~~preferably of formula (XVII*-a),~~

**Revised claims dated 22-July-2019**

**Marked up claims**



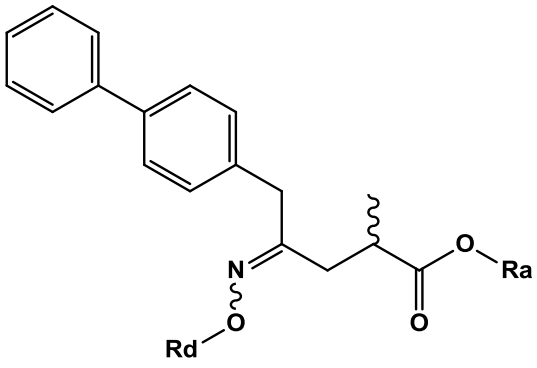

~~(XVII* a)~~

wherein

Ra is selected from hydrogen, a carboxyl protecting group, and $C_1$-$C_6$-alkyl, ~~preferably ethyl,~~ wherein the carboxyl protecting group is selected from $C_6$-$C_{10}$-aryl-$C_1$-$C_6$-alkyl and SiR11R12R13, wherein R11, R12, and R13 are, independently of each other, $C_1$-$C_7$-alkyl, $C_6$-$C_{10}$-aryl or phenyl-$C_1$-$C_4$-alkyl,

Rc is selected from $C_1$-$C_6$-alkyl, $C_6$-$C_{10}$-aryl, $C_6$-$C_{10}$-aryl-$C_1$-$C_6$-alkyl, $C_3$-$C_8$-cycloalkyl, $C_3$-$C_8$-cycloalkyl-$C_1$-$C_6$-alkyl, heterocyclyl or heterocyclyl-$C_1$-$C_6$-alkyl, wherein said heterocyclyl is a mono- or polycyclic, unsaturated, partially saturated, saturated or aromatic ring system with 5 to 14 ring atoms and with one or more heteroatoms independently selected from nitrogen, oxygen, sulfur, S(=O)- or S-(=O)$_2$, and wherein each aryl or heterocyclyl group can be optionally substituted by one, two or three substituents independently selected from halo, $C_1$-$C_7$-alkyl, halo-$C_1$-$C_7$-alkyl, and $C_1$-$C_7$-alkoxy, halo-$C_1$-$C_7$-alkoxy, and $C_1$-$C_7$-alkoxy-$C_1$-$C_7$-alkyl,

d) the compound is of formula (XVII**),

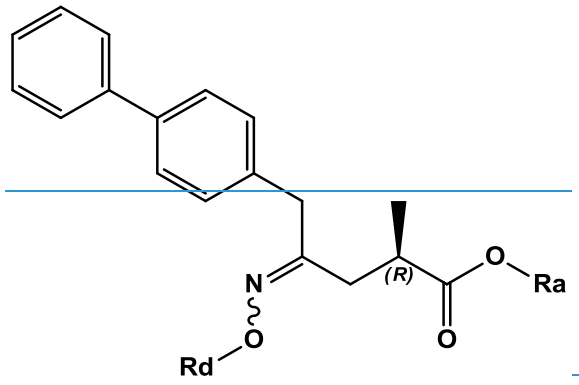



(XVII**)

~~preferably of formula (XVII** a),~~

**Revised claims dated 22-July-2019**

**Marked up claims**



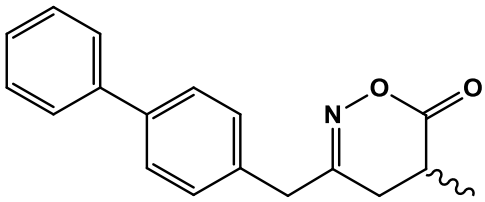

~~(XVII** a)~~

wherein

Ra is selected from hydrogen, a carboxyl protecting group, and $C_1$-$C_6$-alkyl, ~~preferably ethyl,~~ wherein the carboxyl protecting group is selected from $C_6$-$C_{10}$-aryl-$C_1$-$C_6$-alkyl and SiR11R12R13, wherein R11, R12, and R13 are, independently of each other, $C_1$-$C_7$-alkyl, $C_6$-$C_{10}$-aryl or phenyl-$C_1$-$C_4$-alkyl,

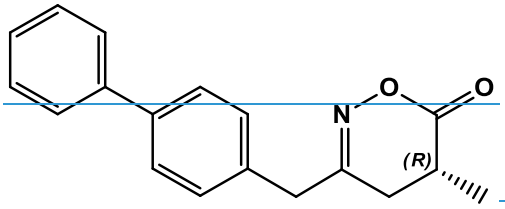
Rd is selected from $C_1$-$C_6$-alkyl, $C_6$-$C_{10}$-aryl, $C_6$-$C_{10}$-aryl-$C_1$-$C_6$-alkyl, $C_3$-$C_8$-cycloalkyl, $C_3$-$C_8$-cycloalkyl-$C_1$-$C_6$-alkyl, heterocyclyl or heterocyclyl-$C_1$-$C_6$-alkyl, wherein said heterocyclyl is a mono- or polycyclic, unsaturated, partially saturated, saturated or aromatic ring system with 5 to 14 ring atoms and with one or more heteroatoms independently selected from nitrogen, oxygen, sulfur, S(=O)- or S-(=O)$_2$, and wherein each aryl or heterocyclyl group can be optionally substituted by one, two or three substituents independently selected from halo, $C_1$-$C_7$-alkyl, halo-$C_1$-$C_7$-alkyl, and $C_1$-$C_7$-alkoxy, halo-$C_1$-$C_7$-alkoxy, and $C_1$-$C_7$-alkoxy-$C_1$-$C_7$-alkyl,

e) the compound is of formula (XVIII),




(XVIII)

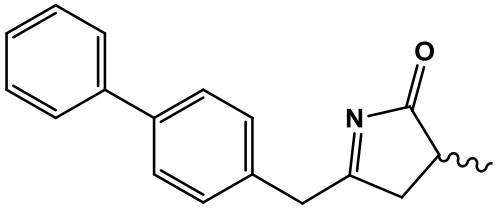
~~preferably of formula (XVIII-a)~~




~~(XVIII-a)~~

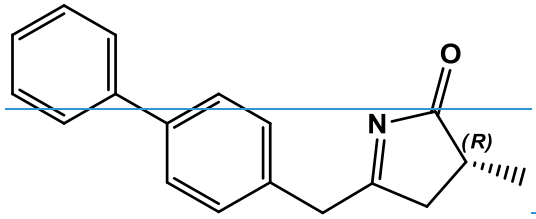
or

f) the compound is of formula (XIX),



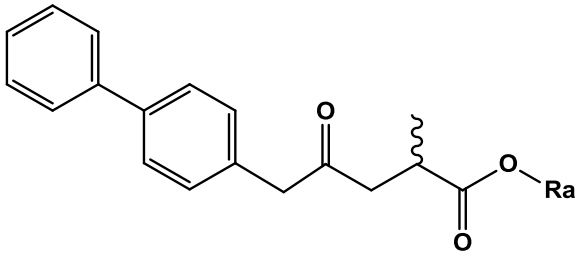

(XIX)

~~preferably of formula (XIX-a)~~



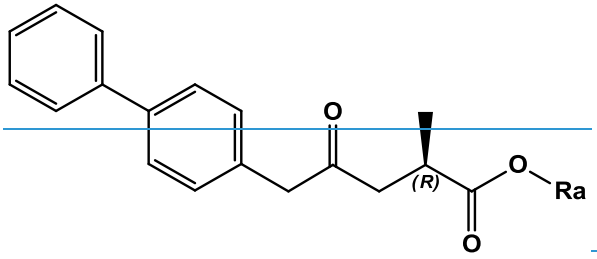

~~(XIX-a)~~

5. A process for the manufacture of a compound of formula (I), or a salt thereof;




(I)

~~preferably of formula (I-a), or a salt thereof;~~



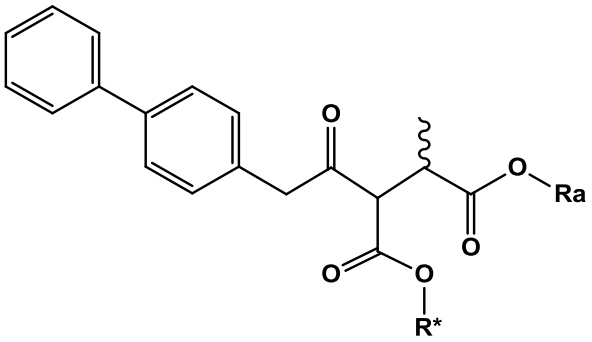

~~(I-a)~~

wherein Ra is selected from hydrogen, a carboxyl protecting group and $C_1$-$C_6$-alkyl, ~~preferably ethyl,~~

comprising reacting a compound of formula (II), or a salt thereof

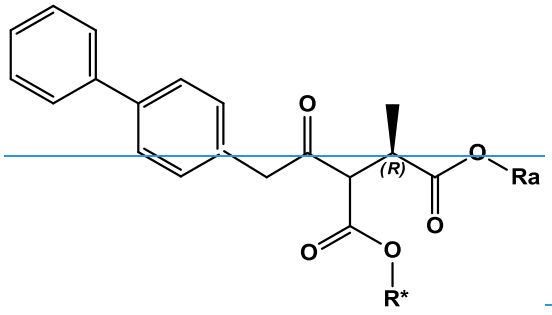
**Revised claims dated 22-July-2019**

**Marked up claims**



(II)

~~preferably of formula (II-a), or a salt thereof;~~

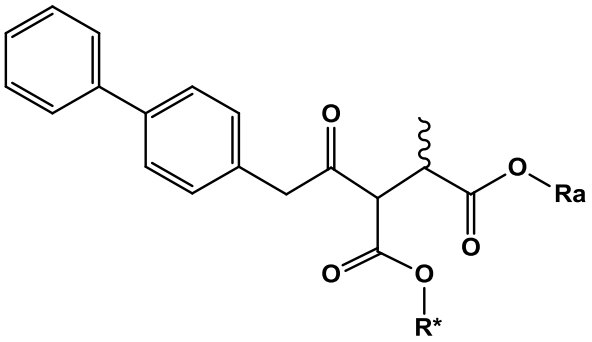


~~(II-a)~~

wherein Ra and R* are, independently of each other, selected from hydrogen, a carboxyl protecting group, and $C_1$-$C_6$-alkyl, ~~preferably ethyl,~~

under – if required – deprotection reaction conditions, followed by decarboxylation reaction conditions, and optionally by introduction of a moiety Ra selected from a carboxyl protecting group and $C_1$-$C_6$-alkyl, to provide the compound of formula (I).

6. The~~A~~ process as claimed in ~~according to~~ claim 5, wherein the compound of the formula (II), or a salt thereof

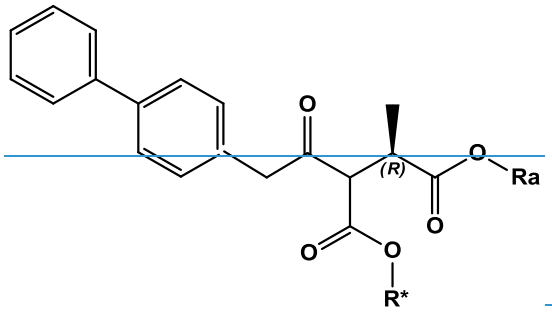


(II)

~~preferably of formula (II-a), or a salt thereof;~~

**Revised claims dated 22-July-2019**

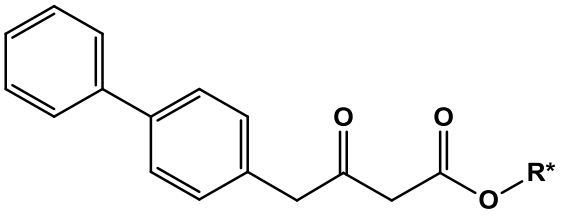
**Marked up claims**




~~(II-a)~~

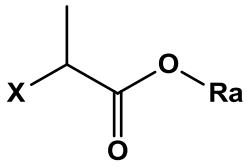
wherein Ra and R* are, independently of each other, selected from hydrogen, a carboxyl protecting group, and $C_1$-$C_6$-alkyl, ~~preferably ethyl,~~

is prepared by a process comprising reacting a compound of formula (III),



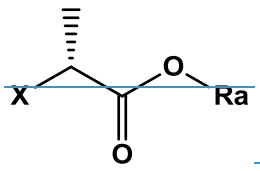

(III)

wherein R* is selected from a carboxyl protecting group and $C_1$-$C_6$-alkyl, ~~preferably ethyl,~~ with a propionate derivative of formula (IV),




(IV)

~~preferably of formula (IV-a),~~




~~(IV-a)~~

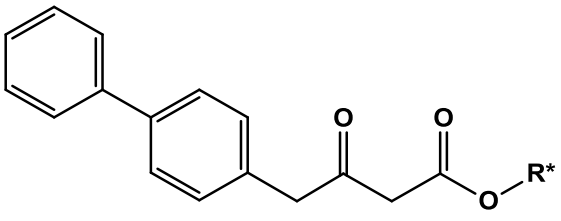
wherein X is a leaving group and Ra is selected from a carboxyl protecting group and $C_1$-$C_6$-alkyl, ~~preferably ethyl,~~

and, if required, replacing the carboxyl protecting groups R* and Ra with a group selected from hydrogen and $C_1$-$C_6$-alkyl, to provide the compound of formula (II).

7. The~~A~~ process as claimed in ~~according to~~ claim 6, wherein the compound of the formula (III),

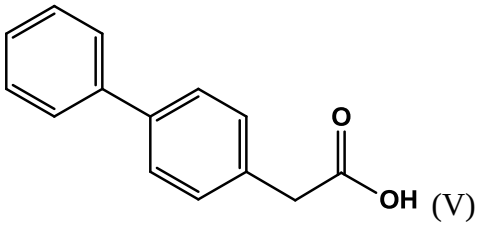
**Revised claims dated 22-July-2019**

**Marked up claims**



(III)

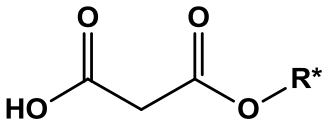
wherein R* is selected from a carboxyl protecting group and $C_1$-$C_6$-alkyl, ~~preferably ethyl,~~ is prepared by a process comprising reacting a compound of formula (V),



(V)

or a reactive derivative thereof,

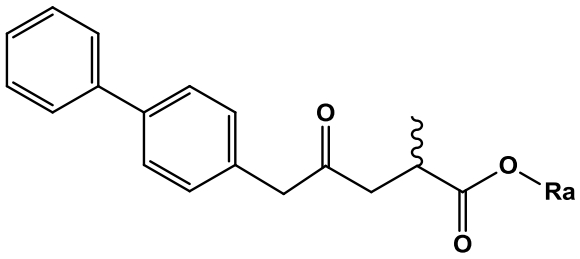
with a salt of a malonic acid half ester of formula (VI),



(VI)

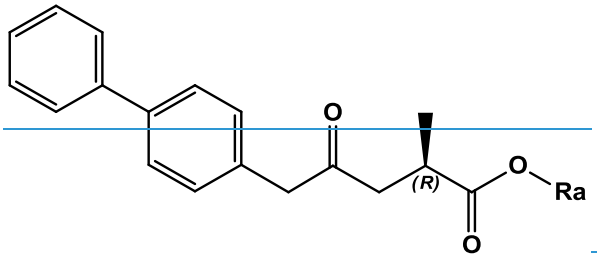
wherein R* is selected from a carboxyl protecting group and $C_1$-$C_6$-alkyl~~, preferably ethyl~~.

8. A process for the manufacture of a compound of formula (I), or a salt thereof;



(I)

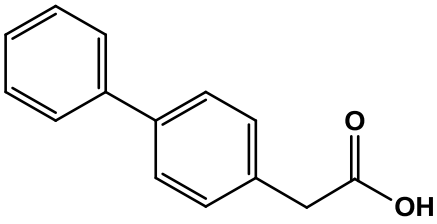
~~preferably of formula (I-a), or a salt thereof;~~



~~(I-a)~~

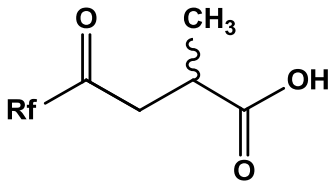
wherein Ra is selected from hydrogen, a carboxyl protecting group and $C_1$-$C_6$-alkyl, ~~preferably ethyl,~~

comprising reacting an activated dianionic derivate of the compound of formula (V), or a salt thereof



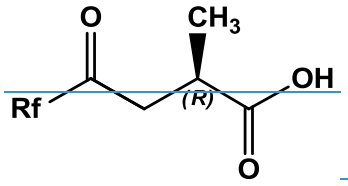
(V)

with a compound of formula (XIV), or a salt thereof



(XIV)

~~preferably of formula (XIV-a)~~



~~(XIV-a)~~

wherein Rf is selected from

- -O-R* wherein R* is selected from a carboxyl protecting group and $C_1$-$C_6$-alkyl, ~~preferably methyl,~~
- -N(CH3)-O(CH3),
- morpholinyl, and
- imidazolinyl,

in the presence of a base, and

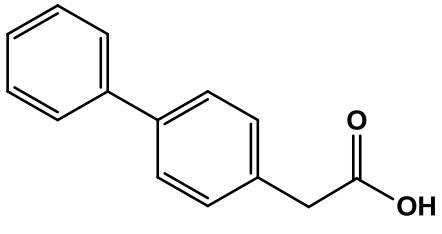
followed by a decarboxylation reaction,

to obtain compound of formula (I), or a salt thereof wherein Ra is hydrogen,

optionally followed by reacting the obtained compound of formula (I), or a salt thereof, wherein Ra is hydrogen, with an agent introducing a carboxyl protecting group, to provide the compound of formula (I), wherein Ra is a carboxyl protecting group, and/or

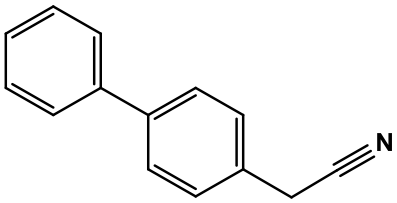
optionally followed by reacting the compound of the formula (I), or a salt thereof, wherein Ra is hydrogen, with a coupling reagent in the presence of an $C_1$-$C_6$-alkanol, especially ethanol, to provide the compound of formula (I), wherein Ra is $C_1$-$C_6$-alkyl~~, preferably ethyl~~.

9. The~~A~~ process as claimed in ~~according to~~ claim 7 or 8, wherein the compound of formula (V),



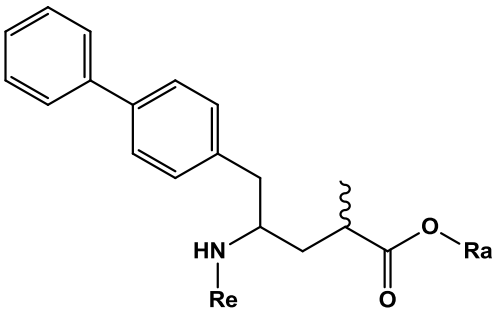
(V)

is prepared by a process comprising hydrolysing a cyanide of the formula (VII)



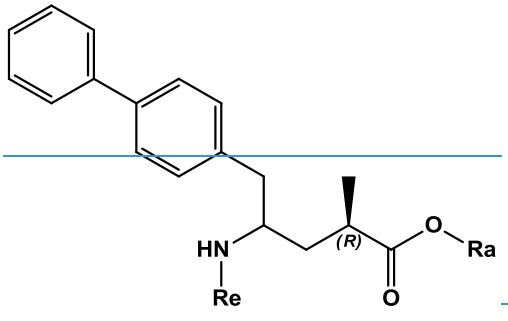
(VII)

10. A process for the manufacture of a compound of formula (VIII), or a salt thereof



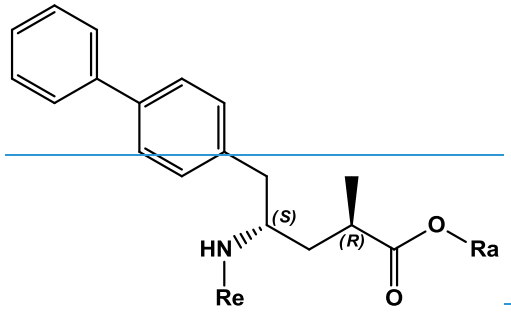
(VIII)

~~preferably of formula (VIII-a), or a salt thereof~~



~~(VIII-a)~~

~~more preferably of formula (VIII-aa), or a salt thereof~~



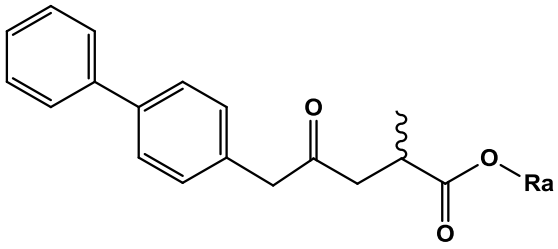

~~(VIII-aa)~~

wherein Ra is selected from hydrogen and $C_1$-$C_6$-alkyl, ~~preferably ethyl,~~ and

Re is selected from hydrogen and a nitrogen protecting group,

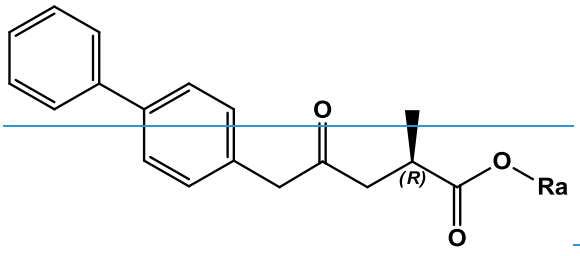
by a process comprising

(i) reacting a compound of formula (I), or a salt thereof;




(I)

~~preferably of formula (I-a), or a salt thereof;~~




~~(I-a)~~

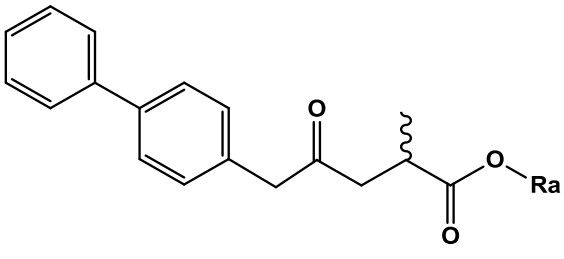
wherein Ra is hydrogen,

with ammonia, a primary or secondary amine, or salts thereof, to provide a compound of formula (VIII), ~~preferably to the compound of formula (VIII-a), more preferably of formula (VIII-aa),~~ wherein Ra and Re are hydrogen, or a salt thereof, or

(ii) converting a compound of formula (I), or a salt thereof;

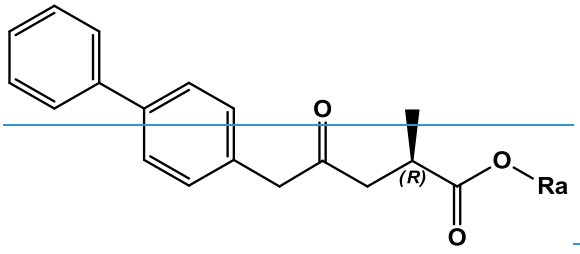
**Revised claims dated 22-July-2019**

**Marked up claims**




(I)

~~preferably of formula (I-a), or a salt thereof;~~

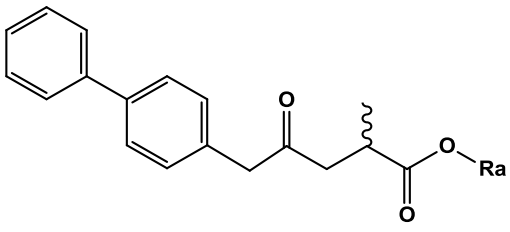



~~(I-a)~~

wherein Ra is selected from hydrogen and $C_1$-$C_6$-alkyl, ~~preferably hydrogen,~~ into the compound of formula (VIII), ~~preferably to the compound of formula (VIII-a), more preferably of formula (VIII-aa),~~ wherein Ra is selected from hydrogen and $C_1$-$C_6$-alkyl, ~~preferably hydrogen,~~ and Re is hydrogen, or a salt thereof, by bringing it in contact with an (S)-selective ω-transaminase in the presence of an amine donor and a coenzyme, wherein the conversion rate from the compound of formula (I) to the compound of formula (VIII)~~,~~ ~~preferably the conversion rate from the compound of formula (I-a) to the compound of formula (VIII-a), more preferably of formula (VIII-aa),~~ is more than 50%, or

(iii)

a) reacting a compound of formula (I), or a salt thereof;

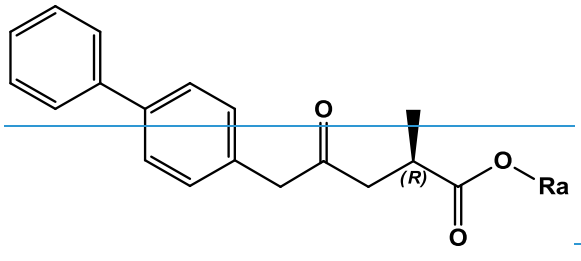



(I)

~~preferably of formula (I-a), or a salt thereof;~~

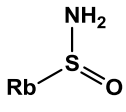
**Revised claims dated 22-July-2019**

**Marked up claims**



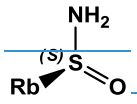
~~(I-a)~~

wherein Ra is selected from a carboxyl protecting group and $C_1$-$C_6$-alkyl, ~~preferably ethyl,~~ with an aminosulfinyl compound of formula (IX), or a salt thereof,



(IX)

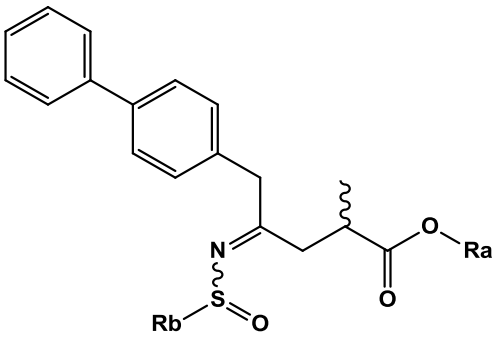
~~especially of formula (IX-a),~~



~~(IX-a)~~,

wherein Rb is selected from $C_1$-$C_6$-alkyl, $C_6$-$C_{10}$-aryl, $C_6$-$C_{10}$-aryl-$C_1$-$C_6$-alkyl, $C_3$-$C_8$-cycloalkyl, $C_3$-$C_8$-cycloalkyl-$C_1$-$C_6$-alkyl, heterocyclyl or heterocyclyl-$C_1$-$C_6$-alkyl, wherein said heterocyclyl is a mono- or polycyclic, unsaturated, partially saturated, saturated or aromatic ring system with 5 to 14 ring atoms and with one or more heteroatoms independently selected from nitrogen, oxygen, sulfur, S(=O)- or S-(=O)$_2$, and wherein each aryl or heterocyclyl group can be optionally substituted by one, two or three substituents independently selected from halo, $C_1$-$C_7$-alkyl, halo-$C_1$-$C_7$-alkyl, and $C_1$-$C_7$-alkoxy, halo-$C_1$-$C_7$-alkoxy, and $C_1$-$C_7$-alkoxy-$C_1$-$C_7$-alkyl,

to give a sulfinimide compound of the formula (X), or a salt thereof

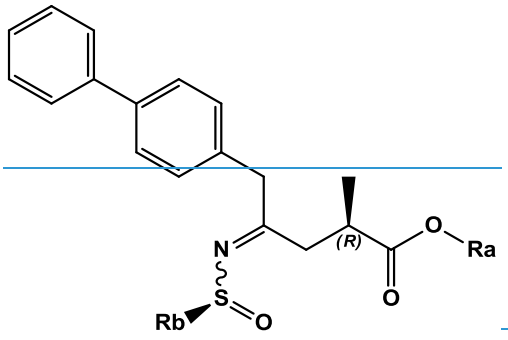


(X)

~~preferably of formula (X-a),~~

**Revised claims dated 22-July-2019**

**Marked up claims**

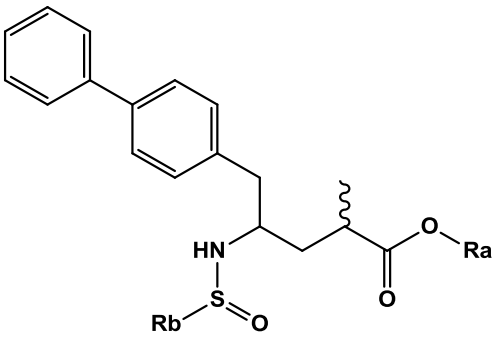



~~(X-a)~~

wherein Rb is selected from $C_1$-$C_6$-alkyl, $C_6$-$C_{10}$-aryl, $C_6$-$C_{10}$-aryl-$C_1$-$C_6$-alkyl, $C_3$-$C_8$-cycloalkyl, $C_3$-$C_8$-cycloalkyl-$C_1$-$C_6$-alkyl, heterocyclyl or heterocyclyl-$C_1$-$C_6$-alkyl, wherein said heterocyclyl is a mono- or polycyclic, unsaturated, partially saturated, saturated or aromatic ring system with 5 to 14 ring atoms and with one or more heteroatoms independently selected from nitrogen, oxygen, sulfur, S(=O)- or S-(=O)$_2$, and wherein each aryl or heterocyclyl group can be optionally substituted by one, two or three substituents independently selected from halo, $C_1$-$C_7$-alkyl, halo-$C_1$-$C_7$-alkyl, and $C_1$-$C_7$-alkoxy, halo-$C_1$-$C_7$-alkoxy, and $C_1$-$C_7$-alkoxy-$C_1$-$C_7$-alkyl, and

Ra is selected from a carboxyl protecting group and $C_1$-$C_6$-alkyl, ~~preferably ethyl,~~

b) reducing the obtained compound of formula (X), or a salt thereof, in the presence of a reducing agent to give a sulfinamide compound of the formula (XI), or a salt thereof

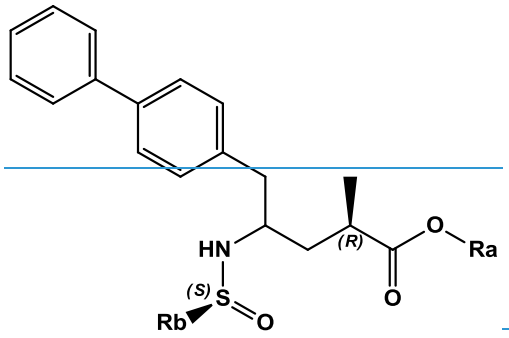



(XI)

~~preferably of formula (XI-a), or a salt thereof~~

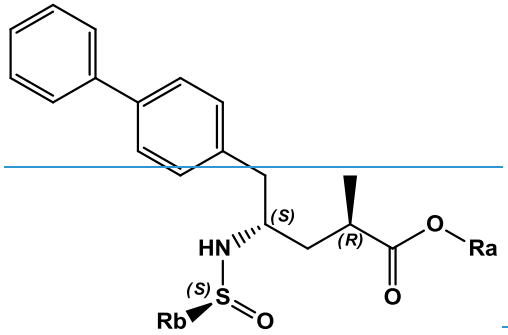
**Revised claims dated 22-July-2019**

**Marked up claims**




~~(XI-a)~~

~~more preferably of formula (XI-aa), or a salt thereof~~




~~(XI-aa)~~

wherein Rb is selected from $C_1$-$C_6$-alkyl, $C_6$-$C_{10}$-aryl, $C_6$-$C_{10}$-aryl-$C_1$-$C_6$-alkyl, $C_3$-$C_8$-cycloalkyl, $C_3$-$C_8$-cycloalkyl-$C_1$-$C_6$-alkyl, heterocyclyl or heterocyclyl-$C_1$-$C_6$-alkyl, wherein said heterocyclyl is a mono- or polycyclic, unsaturated, partially saturated, saturated or aromatic ring system with 5 to 14 ring atoms and with one or more heteroatoms independently selected from nitrogen, oxygen, sulfur, S(=O)- or S-(=O)$_2$, and wherein each aryl or heterocyclyl group can be optionally substituted by one, two or three substituents independently selected from halo, $C_1$-$C_7$-alkyl, halo-$C_1$-$C_7$-alkyl, and $C_1$-$C_7$-alkoxy, halo-$C_1$-$C_7$-alkoxy, and $C_1$-$C_7$-alkoxy-$C_1$-$C_7$-alkyl, and

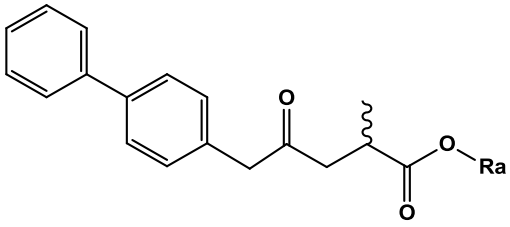
Ra is selected from a carboxyl protecting group and $C_1$-$C_6$-alkyl, ~~preferably ethyl,~~

c) reacting the obtained sulfinamide compound of formula (XI), or a salt thereof, by hydrolyzing the sulfonamide group in the presence of an acid to provide a compound of formula (VIII), or a salt thereof, wherein Ra is selected from a carboxyl protecting group and $C_1$-$C_6$-alkyl, ~~preferably ethyl,~~ and Re is hydrogen, and

d) removing – if present - any carboxyl protecting group from the obtained compound of formula (VIII), or a salt thereof, to provide a compound of formula (VIII), or a salt thereof, wherein Ra is selected from hydrogen and $C_1$-$C_6$-alkyl, ~~preferably ethyl,~~ and Re is hydrogen or

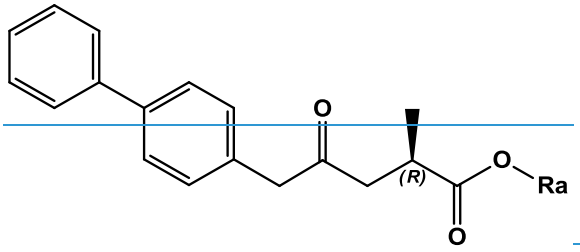
(iv)

a) reacting a compound of formula (I), or a salt thereof;




(I)

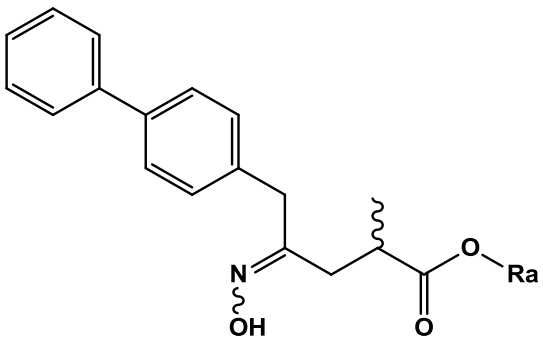
~~preferably of formula (I-a), or a salt thereof;~~




~~(I-a)~~

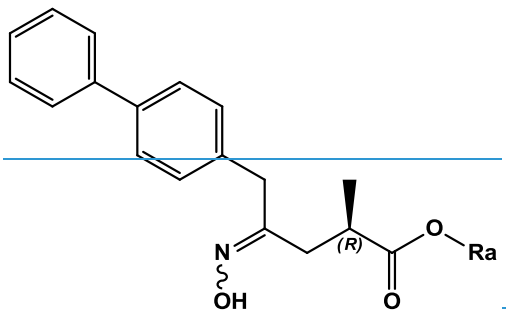
wherein Ra is hydrogen,

with hydroxylamine or a salt thereof to provide a compound of formula (XVII), or a salt thereof




(XVII)

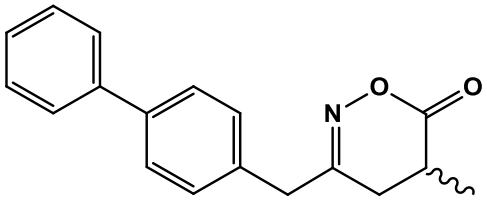
~~preferably of formula (XVII-a),~~




~~(XVII-a)~~

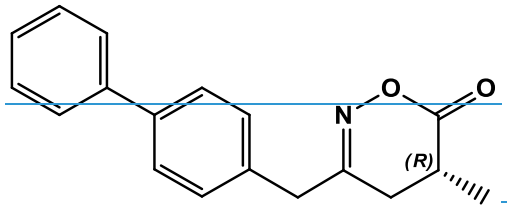
wherein Ra is hydrogen,

b) subsequently cyclizing the obtained compound of formula (XVII) to give the corresponding compound of the formula (XVIII)




(XVIII)

~~preferably of formula (XVIII-a)~~

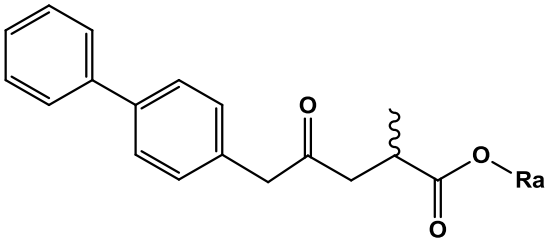



~~(XVIII-a)~~

c) reducing the obtained compound of formula (XVIII) in the presence of a reducing agent, to obtain the compound of formula (VIII), wherein Ra and Re are both hydrogen, or

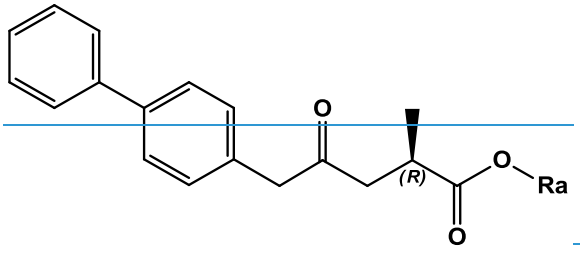
(v)

a) reacting a compound of formula (I), or a salt thereof;




(I)

~~preferably of formula (I-a), or a salt thereof;~~



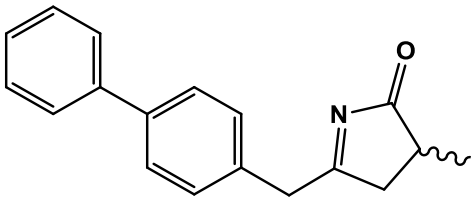

~~(I-a)~~

wherein Ra is hydrogen,

with ammonia or an ammonium salt, yielding a compound of the formula (XIX)

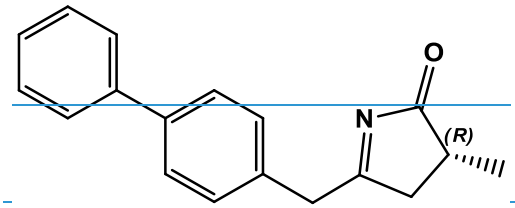
**Revised claims dated 22-July-2019**

**Marked up claims**



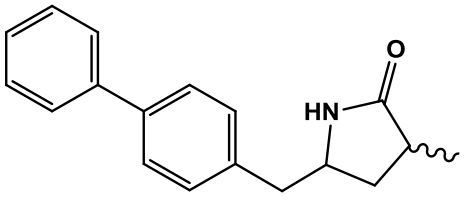

(XIX)

~~preferably of formula (XIX-a)~~



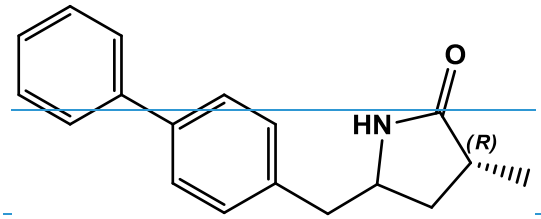

~~(XIX-a)~~

b) reducing the obtained compound of formula (XIX)~~, especially (XIX-a),~~ with a reducing agent, to give a lactam compound of formula (XX),



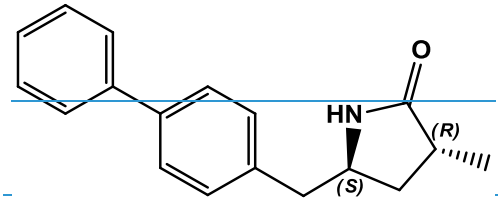

(XX)

~~preferably of formula (XX-a)~~




~~(XX-a)~~

~~more preferably of formula (XX-aa), and~~




~~(XX-aa)~~

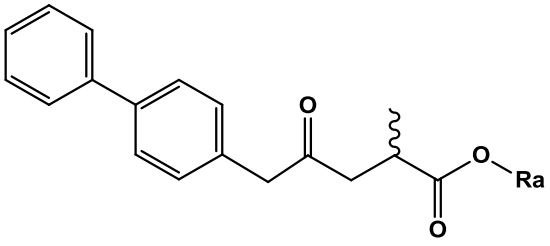
c) reacting the obtained compound of formula (XX) under ring opening conditions, optionally in the presence of an $C_1$-$C_7$-alcohol, to provide the compound of formula (VIII), wherein Ra is selected from hydrogen and $C_1$-$C_6$-alkyl, ~~preferably ethyl,~~ and Re is hydrogen, or

(vi)

**Revised claims dated 22-July-2019**

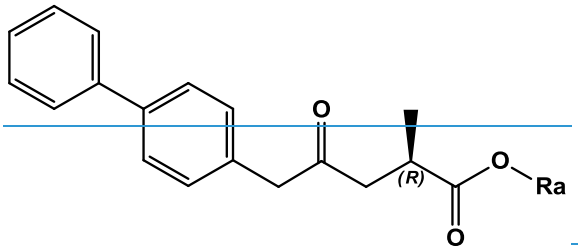
**Marked up claims**

a) reacting a compound of formula (I), or a salt thereof;




(I)

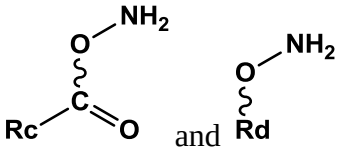
~~preferably of formula (I-a), or a salt thereof;~~




~~(I-a)~~

wherein Ra is selected from hydrogen, a carboxyl protecting group and $C_1$-$C_6$-alkyl, preferably ethyl,

with an O-substituted hydroxylamine selected from



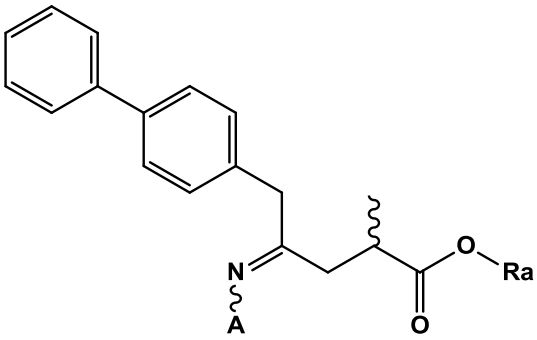

or in each case a salt thereof.

wherein Rc and Rd are independently selected from $C_1$-$C_6$-alkyl, $C_6$-$C_{10}$-aryl, $C_6$-$C_{10}$-aryl-$C_1$-$C_6$-alkyl, $C_3$-$C_8$-cycloalkyl, $C_3$-$C_8$-cycloalkyl-$C_1$-$C_6$-alkyl, heterocyclyl or heterocyclyl-$C_1$-$C_6$-alkyl, wherein said heterocyclyl is a mono- or polycyclic, unsaturated, partially saturated, saturated or aromatic ring system with 5 to 14 ring atoms and with one or more heteroatoms independently selected from nitrogen, oxygen, sulfur, S(=O)- or S-(=O)$_2$, and wherein each aryl or heterocyclyl group can be optionally substituted by one, two or three substituents independently selected from halo, $C_1$-$C_7$-alkyl, halo-$C_1$-$C_7$-alkyl, and $C_1$-$C_7$-alkoxy, halo-$C_1$-$C_7$-alkoxy, and $C_1$-$C_7$-alkoxy-$C_1$-$C_7$-alkyl,

to provide a compound of formula (XVII***),

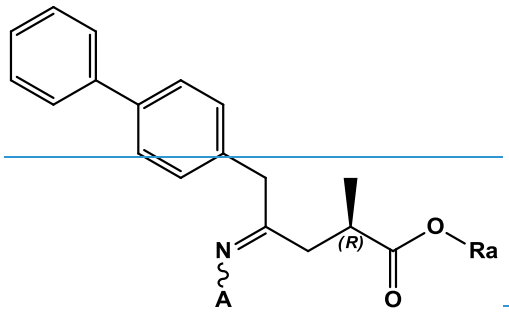
**Revised claims dated 22-July-2019**

**Marked up claims**




(XVII***)

~~preferably of formula (XVII-a),~~




~~(XVII***-a)~~

wherein Ra is selected from hydrogen, a carboxyl protecting group, and $C_1$-$C_6$-alkyl, ~~preferably ethyl,~~ and

A is -O-C(=O)-Rc or -O-Rd,

wherein Rc and Rd are independently selected from $C_1$-$C_6$-alkyl, $C_6$-$C_{10}$-aryl, $C_6$-$C_{10}$-aryl-$C_1$-$C_6$-alkyl, $C_3$-$C_8$-cycloalkyl, $C_3$-$C_8$-cycloalkyl-$C_1$-$C_6$-alkyl, heterocyclyl or heterocyclyl-$C_1$-$C_6$-alkyl, wherein said heterocyclyl is a mono- or polycyclic, unsaturated, partially saturated, saturated or aromatic ring system with 5 to 14 ring atoms and with one or more heteroatoms independently selected from nitrogen, oxygen, sulfur, S(=O)- or S-(=O)$_2$, and wherein each aryl or heterocyclyl group can be optionally substituted by one, two or three substituents independently selected from halo, $C_1$-$C_7$-alkyl, halo-$C_1$-$C_7$-alkyl, and $C_1$-$C_7$-alkoxy, halo-$C_1$-$C_7$-alkoxy, and $C_1$-$C_7$-alkoxy-$C_1$-$C_7$-alkyl,

b) reducing the obtained compound of formula (XVII***), or a salt thereof to provide the compound of formula (VIII) or a salt thereof, wherein Ra is selected from hydrogen, a carboxyl protecting group and $C_1$-$C_6$-alkyl, ~~preferably ethyl,~~ and Re is hydrogen, and

c) removing – if present – any carboxyl protecting group from the obtained compound of formula (VIII), or a salt thereof,

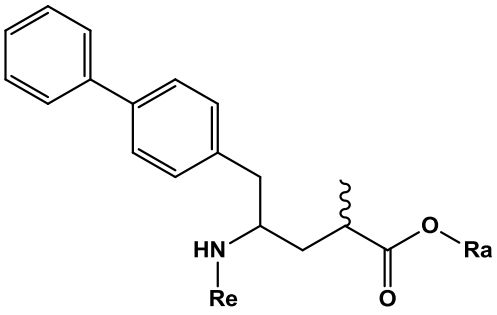
and wherein all reaction variants (i) to (vi) are optionally followed by

optionally reacting the obtained compound of formula (VIII), or a salt thereof, wherein Ra is selected from hydrogen or $C_1$-$C_6$-alkyl, ~~preferably ethyl,~~ and Re is hydrogen, with an agent introducing an amino protecting group, to provide the compound of formula (VIII), wherein Ra is selected from hydrogen and $C_1$-$C_6$-alkyl, ~~preferably ethyl,~~ and Re is a nitrogen protecting group, and/or

optionally followed by reacting the compound of the formula (VIII) wherein Ra is hydrogen and Re is selected from hydrogen and a nitrogen protecting group, with a coupling reagent in the presence of an $C_1$-$C_6$-alkanol, especially ethanol, to provide the compound of formula (VIII), wherein Ra is $C_1$-$C_6$-alkyl, ~~preferably ethyl,~~ and Re is a nitrogen protecting group.

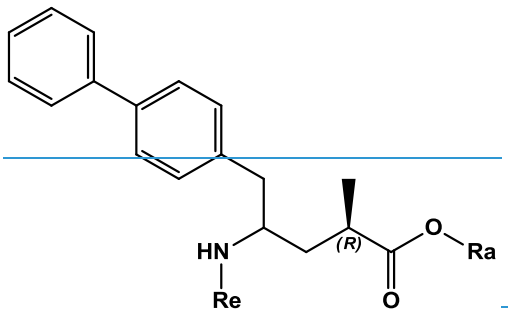
11. The ~~A~~ process as claimed in ~~according to~~ claim 9, wherein the compound of the formula (I) is obtained by a process as claimed in any one of claims 5 to 8.

12. The ~~A~~ process as claimed in ~~according to~~ claim 10 or 11, wherein the obtained compound of formula (VIII) or a salt thereof




(VIII)

~~preferably of formula (VIII-a), or a salt thereof~~

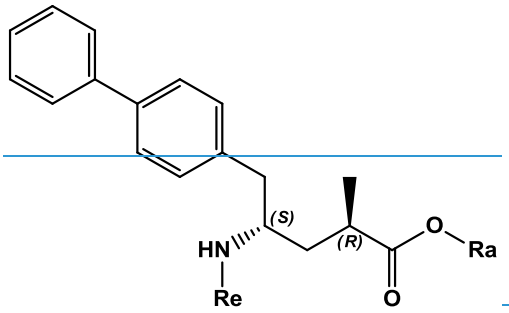



~~(VIII-a)~~

~~more preferably of formula (VIII-aa), or a salt thereof~~

**Revised claims dated 22-July-2019**

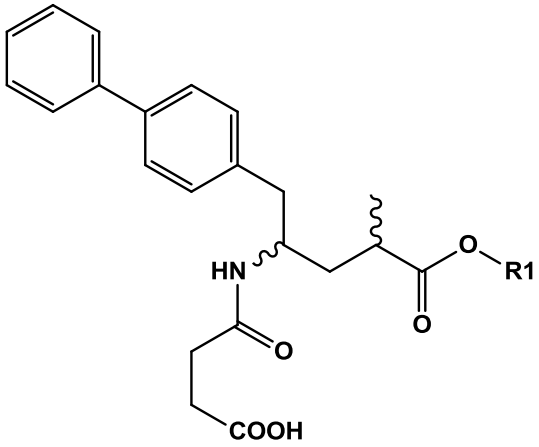
**Marked up claims**




~~(VIII-aa)~~

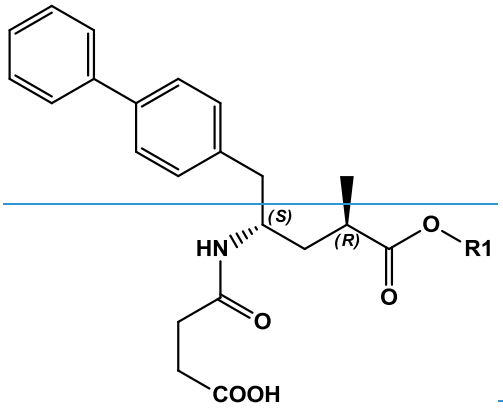
wherein Ra is selected from hydrogen and ethyl, and Re is selected from hydrogen and a nitrogen protecting group,

is converted into a compound of formula (10)




(10)

~~preferably of formula (10-a)~~




~~(10-a)~~,

wherein R1 is hydrogen or $C_1$-$C_6$-alkyl, preferably ethyl, in particular to the compound *N*-(3-carboxy-1-oxopropyl)-(4*S*)-*p*-phenylphenylmethyl)-4-amino-(2*R*)-methylbutanoic acid

or a salt thereof, or *N*-(3-carboxy-1-oxopropyl)-(4*S*)-*p*-phenylphenylmethyl)-4-amino-(2*R*)-methylbutanoic acid ethyl ester or a salt thereof, by

optionally removing – if present – any nitrogen protecting group Re,

optionally reacting the obtained compound of formula (VIII) wherein Ra and Re are hydrogen with a coupling reagent in the presence of a $C_1$-$C_6$-alkanol, ~~preferably ethanol,~~ to provide the compound of formula (VIII), wherein Ra is selected from $C_1$-$C_6$-alkyl, ~~preferably ethyl,~~ and Re is hydrogen, and

reacting the compound of formula (VIII) wherein Ra is selected from hydrogen and $C_1$-$C_6$-alkyl, ~~preferably ethyl,~~ and Re is hydrogen, with succinic acid anhydride.

13. The ~~use of a~~ compound ~~according to~~ as claimed in any one of claims 1 to 4, used in the manufacture of *N*-(3-carboxy-1-oxopropyl)-(4*S*)-*p*-phenylphenylmethyl)-4-amino-(2*R*)-methylbutanoic acid or a salt thereof, or *N*-(3-carboxy-1-oxopropyl)-(4*S*)-*p*-phenylphenylmethyl)-4-amino-(2*R*)-methylbutanoic acid ethyl ester or a salt thereof, or Trisodium [3-((1*S*,3*R*)-1-biphenyl-4-ylmethyl-3-ethoxycarbonyl-1-butylcarbamoyl)propionate-(*S*)-3'-methyl-2'-(pentanoyl{2''-(tetrazol-5-ylate)biphenyl-4'-ylmethyl}amino)butyrate] hemipentahydrate.

**Dated this 09th day of December, 2016**

**Archana Shanker**

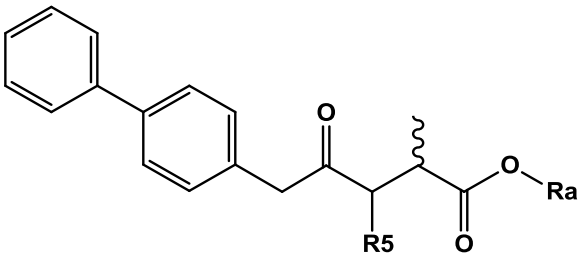
**Of Anand and Anand Advocates**

**Agents for the Applicant**

**IN/PA- 149**

**We Claim:**

1. A compound of formula (XV), or a salt thereof




(XV)

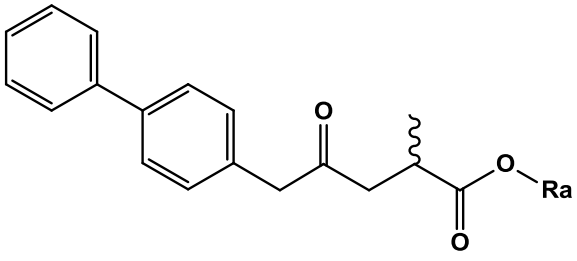
wherein

R5 is selected from hydrogen and a group –CO-OR*, and

Ra and R* are, independently of each other, selected from hydrogen, a carboxyl protecting group, and $C_1$-$C_6$-alkyl, wherein the carboxyl protecting group is selected from $C_6$-$C_{10}$-aryl-$C_1$-$C_6$-alkyl and SiR11R12R13, wherein R11, R12, and R13 are, independently of each other, $C_1$-$C_7$-alkyl, $C_6$-$C_{10}$-aryl or phenyl-$C_1$-$C_4$-alkyl.

2. The compound of formula (XV) as claimed in claim 1, wherein

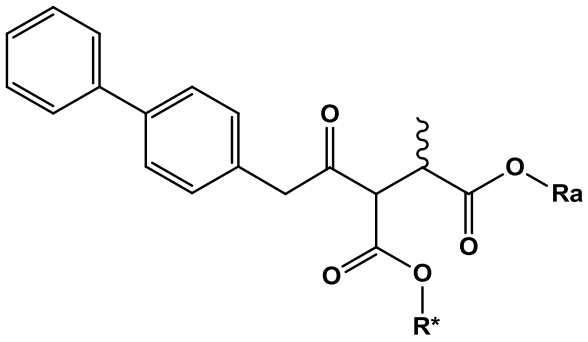
a) the compound is of formula (I), or a salt thereof;




(I)

wherein Ra is selected from hydrogen, a carboxyl protecting group, and $C_1$-$C_6$-alkyl, wherein the carboxyl protecting group is selected from $C_6$-$C_{10}$-aryl-$C_1$-$C_6$-alkyl and SiR11R12R13, wherein R11, R12, and R13 are, independently of each other, $C_1$-$C_7$-alkyl, $C_6$-$C_{10}$-aryl or phenyl-$C_1$-$C_4$-alkyl or

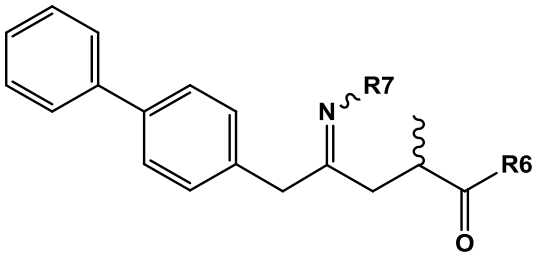
b) the compound is of formula (II), or a salt thereof;




(II)

wherein Ra and R* are, independently of each other, selected from hydrogen, a carboxyl protecting group, and $C_1$-$C_6$-alkyl, wherein the carboxyl protecting group is selected from $C_6$-$C_{10}$-aryl-$C_1$-$C_6$-alkyl and SiR11R12R13, wherein R11, R12, and R13 are, independently of each other, $C_1$-$C_7$-alkyl, $C_6$-$C_{10}$-aryl or phenyl-$C_1$-$C_4$-alkyl.

3. A compound of formula (XVI), or a salt thereof




(XVI)

wherein

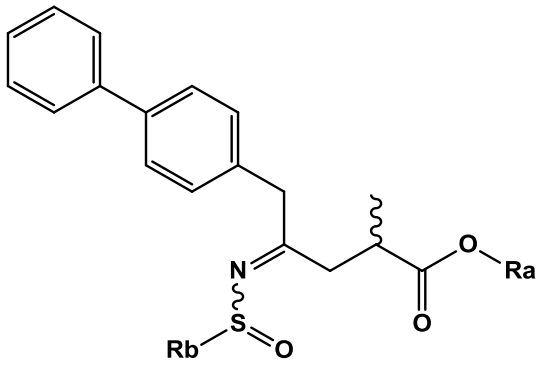
R6 is -O-Ra, and R7 is selected from

- -S(=O)-Rb
- -OH
- A, wherein A is -O-C(=O)-Rc or -O-Rd

wherein Ra is selected from hydrogen, a carboxyl protecting group, and $C_1$-$C_6$-alkyl, wherein the carboxyl protecting group is selected from $C_6$-$C_{10}$-aryl-$C_1$-$C_6$-alkyl and SiR11R12R13, wherein R11, R12, and R13 are, independently of each other, $C_1$-$C_7$-alkyl, $C_6$-$C_{10}$-aryl or phenyl-$C_1$-$C_4$-alkyl and

Rb, Rc and Rd are independently selected from $C_1$-$C_6$-alkyl, $C_6$-$C_{10}$-aryl, $C_6$-$C_{10}$-aryl-$C_1$-$C_6$-alkyl, $C_3$-$C_8$-cycloalkyl, $C_3$-$C_8$-cycloalkyl-$C_1$-$C_6$-alkyl, heterocyclyl or heterocyclyl-$C_1$-$C_6$-alkyl, wherein said heterocyclyl is a mono- or polycyclic, unsaturated, partially saturated, saturated or aromatic ring system with 5 to 14 ring atoms and with one or more heteroatoms independently selected from nitrogen, oxygen, sulfur, S(=O)- or S-$(=O)_2$, and wherein each aryl or heterocyclyl group can be optionally substituted by one, two or three substituents independently selected from halo, $C_1$-$C_7$-alkyl, halo-$C_1$-$C_7$-alkyl, and $C_1$-$C_7$-alkoxy, halo-$C_1$-$C_7$-alkoxy, and $C_1$-$C_7$-alkoxy-$C_1$-$C_7$-alkyl, or
R6 and R7 together represent –O– or form a bond.

4. The compound of formula (XVI) as claimed in claim 3, wherein
a) the compound is of formula (X), or a salt thereof;

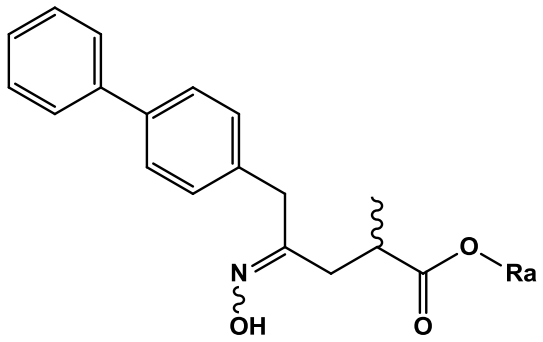



(X)

wherein
Ra is selected from hydrogen, a carboxyl protecting group, and $C_1$-$C_6$-alkyl, wherein the carboxyl protecting group is selected from $C_6$-$C_{10}$-aryl-$C_1$-$C_6$-alkyl and SiR11R12R13, wherein R11, R12, and R13 are, independently of each other, $C_1$-$C_7$-alkyl, $C_6$-$C_{10}$-aryl or phenyl-$C_1$-$C_4$-alkyl,
Rb is selected from $C_1$-$C_6$-alkyl, $C_6$-$C_{10}$-aryl, $C_6$-$C_{10}$-aryl-$C_1$-$C_6$-alkyl, $C_3$-$C_8$-cycloalkyl, $C_3$-$C_8$-cycloalkyl-$C_1$-$C_6$-alkyl, heterocyclyl or heterocyclyl-$C_1$-$C_6$-alkyl, wherein said heterocyclyl is a mono- or polycyclic, unsaturated, partially saturated, saturated or aromatic ring system with 5 to 14 ring atoms and with one or more heteroatoms independently selected from nitrogen, oxygen, sulfur, S(=O)- or S-$(=O)_2$, and wherein each aryl or heterocyclyl

group can be optionally substituted by one, two or three substituents independently selected from halo, $C_1$-$C_7$-alkyl, halo-$C_1$-$C_7$-alkyl, and $C_1$-$C_7$-alkoxy, halo-$C_1$-$C_7$-alkoxy, and $C_1$-$C_7$-alkoxy-$C_1$-$C_7$-alkyl,

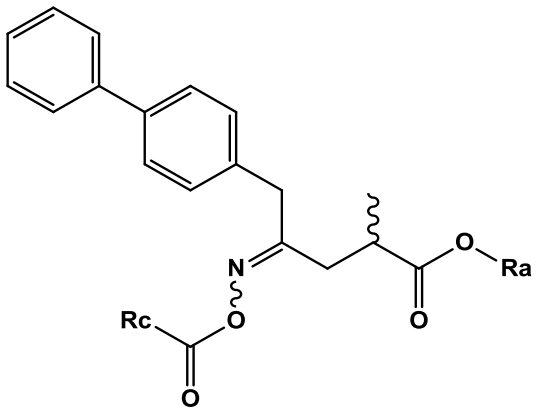
b) the compound is of formula (XVII), or a salt thereof




(XVII)

wherein Ra is selected from hydrogen, a carboxyl protecting group, and $C_1$-$C_6$-alkyl, wherein the carboxyl protecting group is selected from $C_6$-$C_{10}$-aryl-$C_1$-$C_6$-alkyl and SiR11R12R13, wherein R11, R12, and R13 are, independently of each other, $C_1$-$C_7$-alkyl, $C_6$-$C_{10}$-aryl or phenyl-$C_1$-$C_4$-alkyl,

c) the compound is of formula (XVII*),



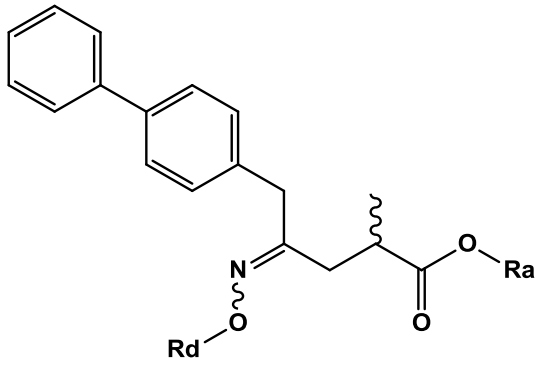

(XVII*)

wherein

Ra is selected from hydrogen, a carboxyl protecting group, and $C_1$-$C_6$-alkyl, wherein the carboxyl protecting group is selected from $C_6$-$C_{10}$-aryl-$C_1$-$C_6$-alkyl and SiR11R12R13, wherein R11, R12, and R13 are, independently of each other, $C_1$-$C_7$-alkyl, $C_6$-$C_{10}$-aryl or phenyl-$C_1$-$C_4$-alkyl,

Rc is selected from $C_1$-$C_6$-alkyl, $C_6$-$C_{10}$-aryl, $C_6$-$C_{10}$-aryl-$C_1$-$C_6$-alkyl, $C_3$-$C_8$-cycloalkyl, $C_3$-$C_8$-cycloalkyl-$C_1$-$C_6$-alkyl, heterocyclyl or heterocyclyl-$C_1$-$C_6$-alkyl, wherein said heterocyclyl is a mono- or polycyclic, unsaturated, partially saturated, saturated or aromatic ring system with 5 to 14 ring atoms and with one or more heteroatoms independently selected from nitrogen, oxygen, sulfur, S(=O)- or S-$(=O)_2$, and wherein each aryl or heterocyclyl group can be optionally substituted by one, two or three substituents independently selected from halo, $C_1$-$C_7$-alkyl, halo-$C_1$-$C_7$-alkyl, and $C_1$-$C_7$-alkoxy, halo-$C_1$-$C_7$-alkoxy, and $C_1$-$C_7$-alkoxy-$C_1$-$C_7$-alkyl,

d) the compound is of formula (XVII**),




(XVII**)

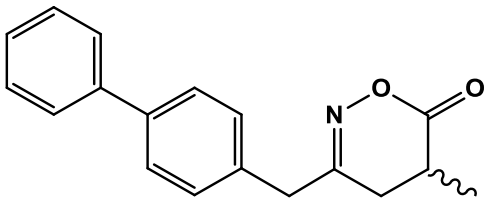
wherein

Ra is selected from hydrogen, a carboxyl protecting group, and $C_1$-$C_6$-alkyl, wherein the carboxyl protecting group is selected from $C_6$-$C_{10}$-aryl-$C_1$-$C_6$-alkyl and SiR11R12R13, wherein R11, R12, and R13 are, independently of each other, $C_1$-$C_7$-alkyl, $C_6$-$C_{10}$-aryl or phenyl-$C_1$-$C_4$-alkyl,

Rd is selected from $C_1$-$C_6$-alkyl, $C_6$-$C_{10}$-aryl, $C_6$-$C_{10}$-aryl-$C_1$-$C_6$-alkyl, $C_3$-$C_8$-cycloalkyl, $C_3$-$C_8$-cycloalkyl-$C_1$-$C_6$-alkyl, heterocyclyl or heterocyclyl-$C_1$-$C_6$-alkyl, wherein said heterocyclyl is a mono- or polycyclic, unsaturated, partially saturated, saturated or aromatic ring system with 5 to 14 ring atoms and with one or more heteroatoms independently selected

from nitrogen, oxygen, sulfur, S(=O)- or S-(=O)$_2$, and wherein each aryl or heterocyclyl group can be optionally substituted by one, two or three substituents independently selected from halo, $C_1$-$C_7$-alkyl, halo-$C_1$-$C_7$-alkyl, and $C_1$-$C_7$-alkoxy, halo-$C_1$-$C_7$-alkoxy, and $C_1$-$C_7$-alkoxy-$C_1$-$C_7$-alkyl,

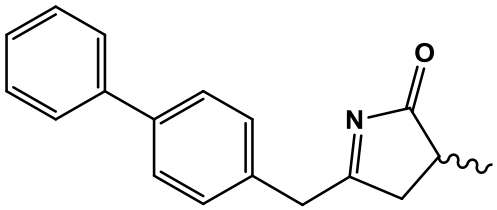
e) the compound is of formula (XVIII),




(XVIII)

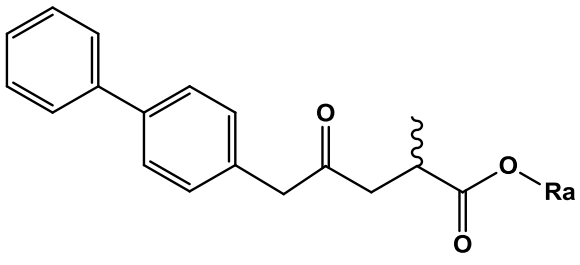
or

f) the compound is of formula (XIX),



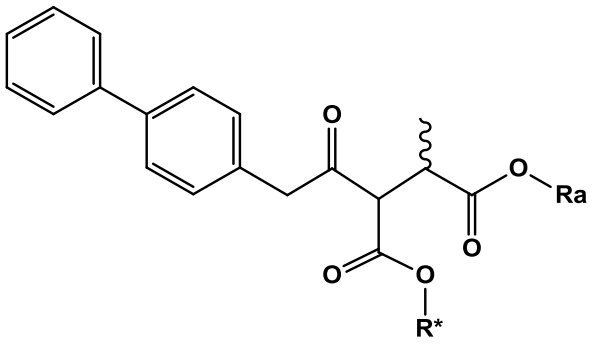

(XIX)

5. A process for the manufacture of a compound of formula (I), or a salt thereof;




(I)

wherein Ra is selected from hydrogen, a carboxyl protecting group and $C_1$-$C_6$-alkyl, comprising reacting a compound of formula (II), or a salt thereof

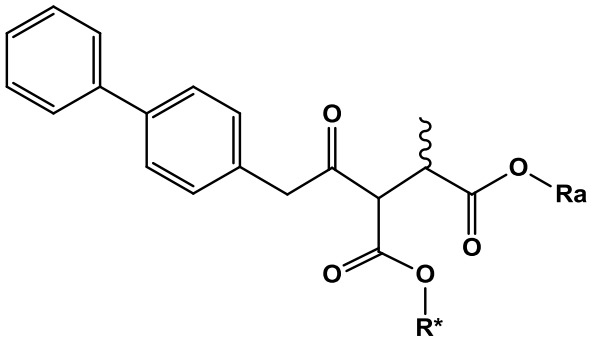



(II)

wherein Ra and R* are, independently of each other, selected from hydrogen, a carboxyl protecting group, and $C_1$-$C_6$-alkyl,

under – if required – deprotection reaction conditions, followed by decarboxylation reaction conditions, and optionally by introduction of a moiety Ra selected from a carboxyl protecting group and $C_1$-$C_6$-alkyl, to provide the compound of formula (I).

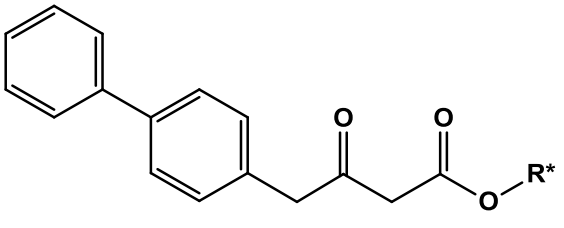
6. The process as claimed in claim 5, wherein the compound of the formula (II), or a salt thereof




(II)

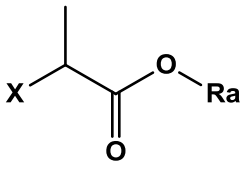
wherein Ra and R* are, independently of each other, selected from hydrogen, a carboxyl protecting group, and $C_1$-$C_6$-alkyl,

is prepared by a process comprising reacting a compound of formula (III),



(III)

wherein R* is selected from a carboxyl protecting group and $C_1$-$C_6$-alkyl, with a propionate derivative of formula (IV),

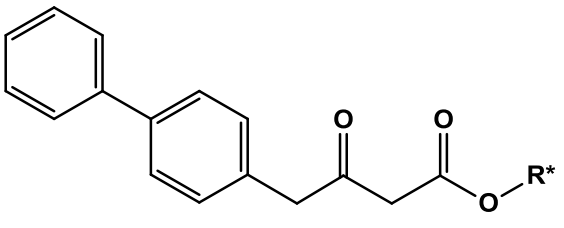


(IV)

wherein X is a leaving group and Ra is selected from a carboxyl protecting group and $C_1$-$C_6$-alkyl,

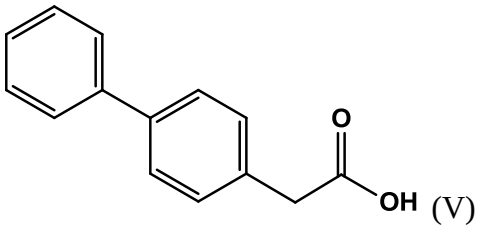
and, if required, replacing the carboxyl protecting groups R* and Ra with a group selected from hydrogen and $C_1$-$C_6$-alkyl, to provide the compound of formula (II).

7. The process as claimed in claim 6, wherein the compound of the formula (III),



(III)

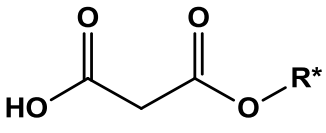
wherein R* is selected from a carboxyl protecting group and $C_1$-$C_6$-alkyl, is prepared by a process comprising reacting a compound of formula (V),



(V)

or a reactive derivative thereof,

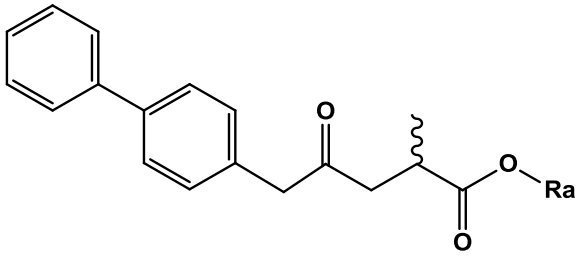
with a salt of a malonic acid half ester of formula (VI),



(VI)

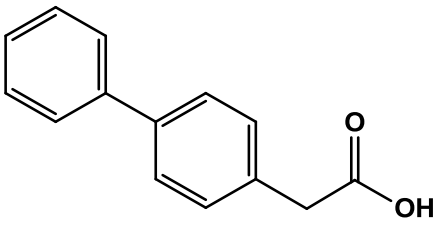
wherein R* is selected from a carboxyl protecting group and $C_1$-$C_6$-alkyl.

8. A process for the manufacture of a compound of formula (I), or a salt thereof;



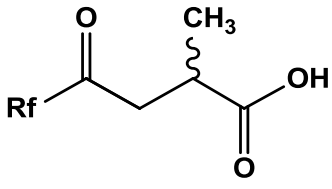
(I)

wherein Ra is selected from hydrogen, a carboxyl protecting group and $C_1$-$C_6$-alkyl, comprising reacting an activated dianionic derivate of the compound of formula (V), or a salt thereof



(V)

with a compound of formula (XIV), or a salt thereof



(XIV)

wherein Rf is selected from

- -O-R* wherein R* is selected from a carboxyl protecting group and $C_1$-$C_6$-alkyl,
- -N(CH3)-O(CH3),
- morpholinyl, and
- imidazolinyl,

in the presence of a base, and

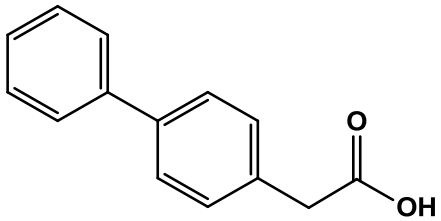
followed by a decarboxylation reaction,

to obtain compound of formula (I), or a salt thereof wherein Ra is hydrogen,

optionally followed by reacting the obtained compound of formula (I), or a salt thereof, wherein Ra is hydrogen, with an agent introducing a carboxyl protecting group, to provide the compound of formula (I), wherein Ra is a carboxyl protecting group, and/or

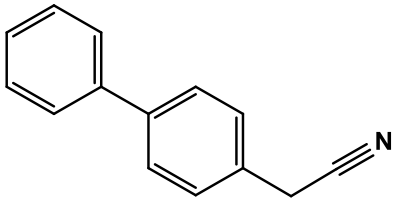
optionally followed by reacting the compound of the formula (I), or a salt thereof, wherein Ra is hydrogen, with a coupling reagent in the presence of an $C_1$-$C_6$-alkanol, especially ethanol, to provide the compound of formula (I), wherein Ra is $C_1$-$C_6$-alkyl.

9. The process as claimed in claim 7 or 8, wherein the compound of formula (V),



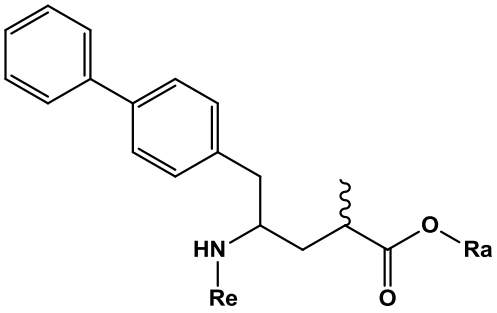
(V)

is prepared by a process comprising hydrolysing a cyanide of the formula (VII)



(VII)

10. A process for the manufacture of a compound of formula (VIII), or a salt thereof



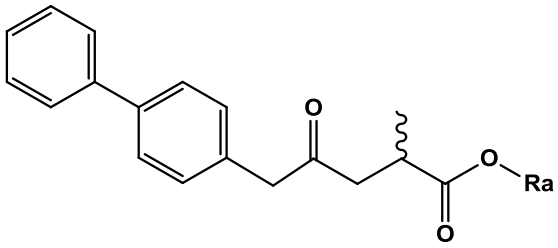
(VIII)

wherein Ra is selected from hydrogen and $C_1$-$C_6$-alkyl, and

Re is selected from hydrogen and a nitrogen protecting group,

by a process comprising

(i) reacting a compound of formula (I), or a salt thereof;

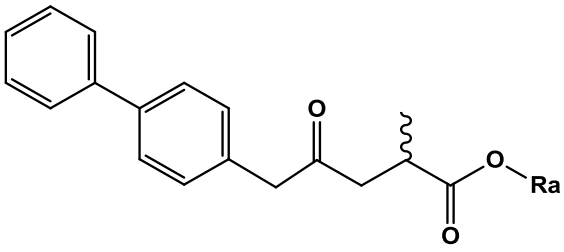



(I)

wherein Ra is hydrogen,

with ammonia, a primary or secondary amine, or salts thereof, to provide a compound of formula (VIII), wherein Ra and Re are hydrogen, or a salt thereof, or

(ii) converting a compound of formula (I), or a salt thereof;



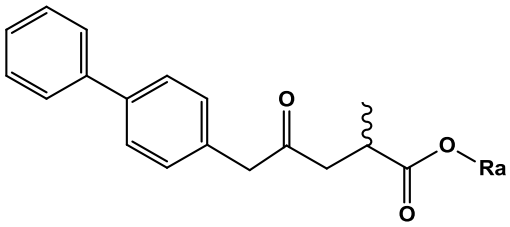

(I)

wherein Ra is selected from hydrogen and $C_1$-$C_6$-alkyl,

into the compound of formula (VIII), wherein Ra is selected from hydrogen and $C_1$-$C_6$-alkyl, and Re is hydrogen, or a salt thereof, by bringing it in contact with an (S)-selective ω-transaminase in the presence of an amine donor and a coenzyme, wherein the conversion rate from the compound of formula (I) to the compound of formula (VIII) is more than 50%, or

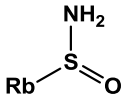
(iii)

a) reacting a compound of formula (I), or a salt thereof;


(I)

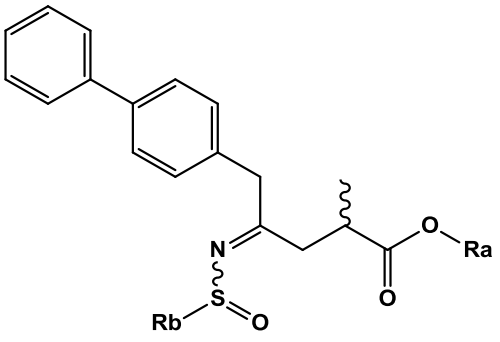
wherein Ra is selected from a carboxyl protecting group and $C_1$-$C_6$-alkyl,

with an aminosulfinyl compound of formula (IX), or a salt thereof,


(IX),

wherein Rb is selected from $C_1$-$C_6$-alkyl, $C_6$-$C_{10}$-aryl, $C_6$-$C_{10}$-aryl-$C_1$-$C_6$-alkyl, $C_3$-$C_8$-cycloalkyl, $C_3$-$C_8$-cycloalkyl-$C_1$-$C_6$-alkyl, heterocyclyl or heterocyclyl-$C_1$-$C_6$-alkyl, wherein said heterocyclyl is a mono- or polycyclic, unsaturated, partially saturated, saturated or aromatic ring system with 5 to 14 ring atoms and with one or more heteroatoms independently selected from nitrogen, oxygen, sulfur, S(=O)- or S-(=O)$_2$, and wherein each aryl or heterocyclyl group can be optionally substituted by one, two or three substituents independently selected from halo, $C_1$-$C_7$-alkyl, halo-$C_1$-$C_7$-alkyl, and $C_1$-$C_7$-alkoxy, halo-$C_1$-$C_7$-alkoxy, and $C_1$-$C_7$-alkoxy-$C_1$-$C_7$-alkyl,

to give a sulfinimide compound of the formula (X), or a salt thereof

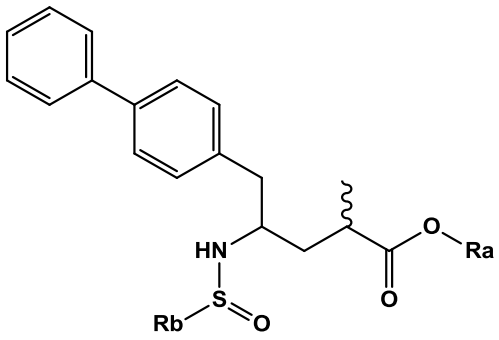

(X)

wherein Rb is selected from $C_1$-$C_6$-alkyl, $C_6$-$C_{10}$-aryl, $C_6$-$C_{10}$-aryl-$C_1$-$C_6$-alkyl, $C_3$-$C_8$-cycloalkyl, $C_3$-$C_8$-cycloalkyl-$C_1$-$C_6$-alkyl, heterocyclyl or heterocyclyl-$C_1$-$C_6$-alkyl, wherein said heterocyclyl is a mono- or polycyclic, unsaturated, partially saturated, saturated or aromatic ring system with 5 to 14 ring atoms and with one or more heteroatoms

independently selected from nitrogen, oxygen, sulfur, S(=O)- or S-(=O)$_2$, and wherein each aryl or heterocyclyl group can be optionally substituted by one, two or three substituents independently selected from halo, $C_1$-$C_7$-alkyl, halo-$C_1$-$C_7$-alkyl, and $C_1$-$C_7$-alkoxy, halo-$C_1$-$C_7$-alkoxy, and $C_1$-$C_7$-alkoxy-$C_1$-$C_7$-alkyl, and

Ra is selected from a carboxyl protecting group and $C_1$-$C_6$-alkyl,

b) reducing the obtained compound of formula (X), or a salt thereof, in the presence of a reducing agent to give a sulfinamide compound of the formula (XI), or a salt thereof




(XI)

wherein Rb is selected from $C_1$-$C_6$-alkyl, $C_6$-$C_{10}$-aryl, $C_6$-$C_{10}$-aryl-$C_1$-$C_6$-alkyl, $C_3$-$C_8$-cycloalkyl, $C_3$-$C_8$-cycloalkyl-$C_1$-$C_6$-alkyl, heterocyclyl or heterocyclyl-$C_1$-$C_6$-alkyl, wherein said heterocyclyl is a mono- or polycyclic, unsaturated, partially saturated, saturated or aromatic ring system with 5 to 14 ring atoms and with one or more heteroatoms independently selected from nitrogen, oxygen, sulfur, S(=O)- or S-(=O)$_2$, and wherein each aryl or heterocyclyl group can be optionally substituted by one, two or three substituents independently selected from halo, $C_1$-$C_7$-alkyl, halo-$C_1$-$C_7$-alkyl, and $C_1$-$C_7$-alkoxy, halo-$C_1$-$C_7$-alkoxy, and $C_1$-$C_7$-alkoxy-$C_1$-$C_7$-alkyl, and

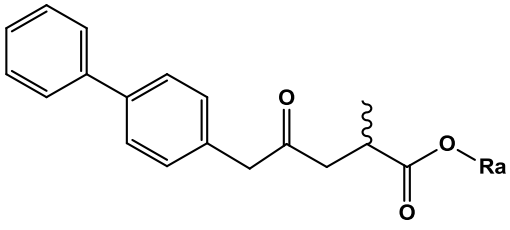
Ra is selected from a carboxyl protecting group and $C_1$-$C_6$-alkyl,

c) reacting the obtained sulfinamide compound of formula (XI), or a salt thereof, by hydrolyzing the sulfonamide group in the presence of an acid to provide a compound of formula (VIII), or a salt thereof, wherein Ra is selected from a carboxyl protecting group and $C_1$-$C_6$-alkyl, and Re is hydrogen, and

d) removing – if present - any carboxyl protecting group from the obtained compound of formula (VIII), or a salt thereof, to provide a compound of formula (VIII), or a salt thereof, wherein Ra is selected from hydrogen and $C_1$-$C_6$-alkyl, and Re is hydrogen or

(iv)

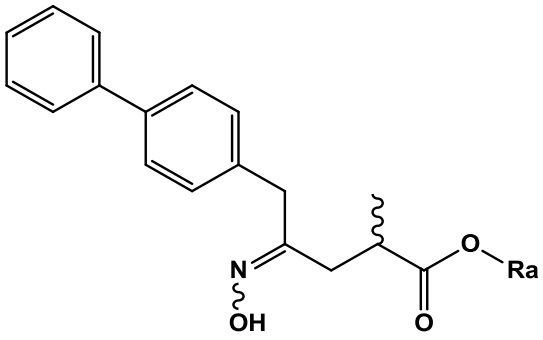
a) reacting a compound of formula (I), or a salt thereof;




(I)

wherein Ra is hydrogen,

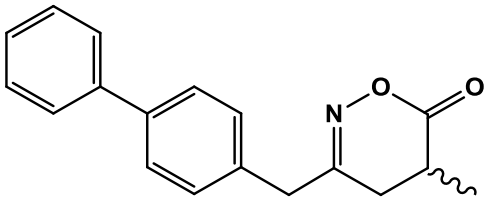
with hydroxylamine or a salt thereof to provide a compound of formula (XVII), or a salt thereof




(XVII)

wherein Ra is hydrogen,

b) subsequently cyclizing the obtained compound of formula (XVII) to give the corresponding compound of the formula (XVIII)

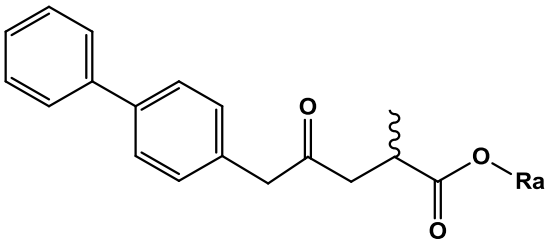



(XVIII)

c) reducing the obtained compound of formula (XVIII) in the presence of a reducing agent, to obtain the compound of formula (VIII), wherein Ra and Re are both hydrogen, or

(v)

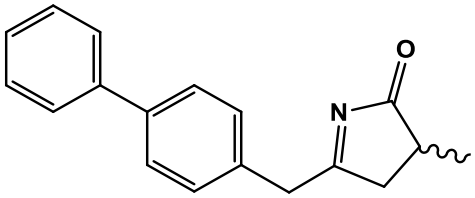
a) reacting a compound of formula (I), or a salt thereof;




(I)

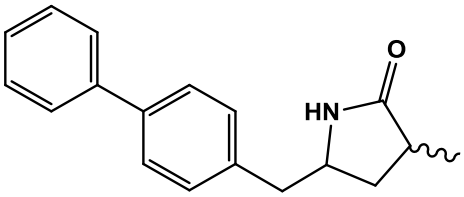
wherein Ra is hydrogen,

with ammonia or an ammonium salt, yielding a compound of the formula (XIX)




(XIX)

b) reducing the obtained compound of formula (XIX) with a reducing agent, to give a lactam compound of formula (XX),

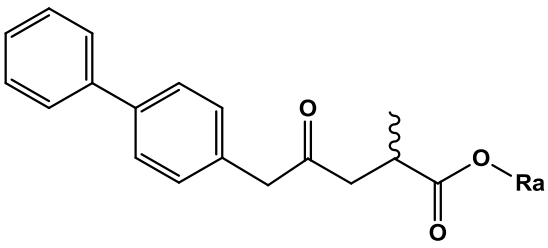



(XX)

c) reacting the obtained compound of formula (XX) under ring opening conditions, optionally in the presence of an $C_1$-$C_7$-alcohol, to provide the compound of formula (VIII), wherein Ra is selected from hydrogen and $C_1$-$C_6$-alkyl, and Re is hydrogen, or

(vi)

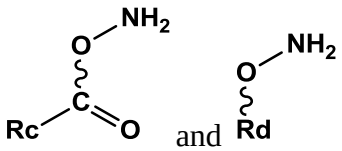
a) reacting a compound of formula (I), or a salt thereof;




(I)

wherein Ra is selected from hydrogen, a carboxyl protecting group and $C_1$-$C_6$-alkyl, preferably ethyl,

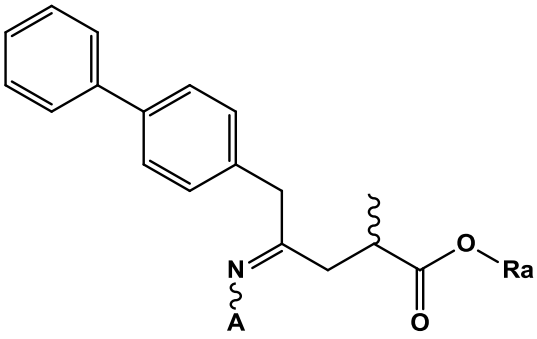
with an O-substituted hydroxylamine selected from




or in each case a salt thereof.

wherein Rc and Rd are independently selected from $C_1$-$C_6$-alkyl, $C_6$-$C_{10}$-aryl, $C_6$-$C_{10}$-aryl-$C_1$-$C_6$-alkyl, $C_3$-$C_8$-cycloalkyl, $C_3$-$C_8$-cycloalkyl-$C_1$-$C_6$-alkyl, heterocyclyl or heterocyclyl-$C_1$-$C_6$-alkyl, wherein said heterocyclyl is a mono- or polycyclic, unsaturated, partially saturated, saturated or aromatic ring system with 5 to 14 ring atoms and with one or more heteroatoms independently selected from nitrogen, oxygen, sulfur, S(=O)- or S-(=O)$_2$, and wherein each aryl or heterocyclyl group can be optionally substituted by one, two or three substituents independently selected from halo, $C_1$-$C_7$-alkyl, halo-$C_1$-$C_7$-alkyl, and $C_1$-$C_7$-alkoxy, halo-$C_1$-$C_7$-alkoxy, and $C_1$-$C_7$-alkoxy-$C_1$-$C_7$-alkyl,

to provide a compound of formula (XVII***),




(XVII***)

wherein Ra is selected from hydrogen, a carboxyl protecting group, and $C_1$-$C_6$-alkyl, and

A is -O-C(=O)-Rc or -O-Rd,

wherein Rc and Rd are independently selected from $C_1$-$C_6$-alkyl, $C_6$-$C_{10}$-aryl, $C_6$-$C_{10}$-aryl-$C_1$-$C_6$-alkyl, $C_3$-$C_8$-cycloalkyl, $C_3$-$C_8$-cycloalkyl-$C_1$-$C_6$-alkyl, heterocyclyl or heterocyclyl-$C_1$-$C_6$-alkyl, wherein said heterocyclyl is a mono- or polycyclic, unsaturated, partially

saturated, saturated or aromatic ring system with 5 to 14 ring atoms and with one or more heteroatoms independently selected from nitrogen, oxygen, sulfur, S(=O)- or S-(=O)$_2$, and wherein each aryl or heterocyclyl group can be optionally substituted by one, two or three substituents independently selected from halo, $C_1$-$C_7$-alkyl, halo-$C_1$-$C_7$-alkyl, and $C_1$-$C_7$-alkoxy, halo-$C_1$-$C_7$-alkoxy, and $C_1$-$C_7$-alkoxy-$C_1$-$C_7$-alkyl,

b) reducing the obtained compound of formula (XVII***), or a salt thereof to provide the compound of formula (VIII) or a salt thereof, wherein Ra is selected from hydrogen, a carboxyl protecting group and $C_1$-$C_6$-alkyl, and Re is hydrogen, and

c) removing – if present – any carboxyl protecting group from the obtained compound of formula (VIII), or a salt thereof,

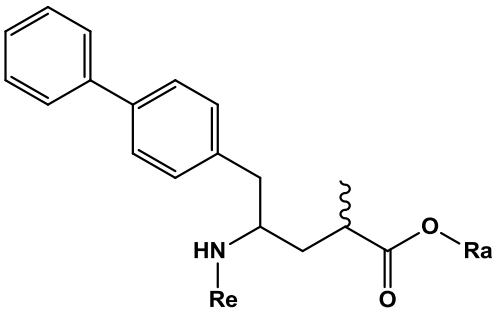
and wherein all reaction variants (i) to (vi) are optionally followed by

optionally reacting the obtained compound of formula (VIII), or a salt thereof, wherein Ra is selected from hydrogen or $C_1$-$C_6$-alkyl, and Re is hydrogen, with an agent introducing an amino protecting group, to provide the compound of formula (VIII), wherein Ra is selected from hydrogen and $C_1$-$C_6$-alkyl, and Re is a nitrogen protecting group, and/or

optionally followed by reacting the compound of the formula (VIII) wherein Ra is hydrogen and Re is selected from hydrogen and a nitrogen protecting group, with a coupling reagent in the presence of an $C_1$-$C_6$-alkanol, especially ethanol, to provide the compound of formula (VIII), wherein Ra is $C_1$-$C_6$-alkyl, and Re is a nitrogen protecting group.

11. The process as claimed in claim 9, wherein the compound of the formula (I) is obtained by a process as claimed in any one of claims 5 to 8.

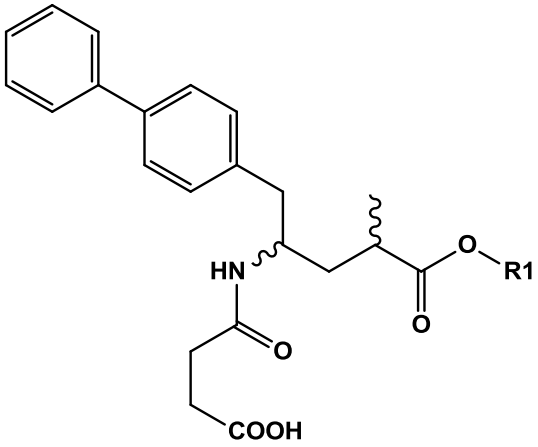
12. The process as claimed in claim 10 or 11, wherein the obtained compound of formula (VIII) or a salt thereof




(VIII)

wherein Ra is selected from hydrogen and ethyl, and Re is selected from hydrogen and a nitrogen protecting group,

is converted into a compound of formula (10)




(10),

wherein R1 is hydrogen or $C_1$-$C_6$-alkyl, preferably ethyl, in particular to the compound *N*-(3-carboxy-1-oxopropyl)-(4*S*)-*p*-phenylphenylmethyl)-4-amino-(2*R*)-methylbutanoic acid or a salt thereof, or *N*-(3-carboxy-1-oxopropyl)-(4*S*)-*p*-phenylphenylmethyl)-4-amino-(2*R*)-methylbutanoic acid ethyl ester or a salt thereof, by

optionally removing – if present – any nitrogen protecting group Re,

optionally reacting the obtained compound of formula (VIII) wherein Ra and Re are hydrogen with a coupling reagent in the presence of a $C_1$-$C_6$-alkanol, to provide the compound of formula (VIII), wherein Ra is selected from $C_1$-$C_6$-alkyl, and Re is hydrogen, and reacting the compound of formula (VIII) wherein Ra is selected from hydrogen and $C_1$-$C_6$-alkyl, and Re is hydrogen, with succinic acid anhydride.

**Revised claims dated 22-July-2019**

**Clean claims**

13. The compound as claimed in any one of claims 1 to 4, used in the manufacture of *N*-(3-carboxy-1-oxopropyl)-(4*S*)-*p*-phenylphenylmethyl)-4-amino-(2*R*)-methylbutanoic acid or a salt thereof, or *N*-(3-carboxy-1-oxopropyl)-(4*S*)-*p*-phenylphenylmethyl)-4-amino-(2*R*)-methylbutanoic acid ethyl ester or a salt thereof, or Trisodium [3-((1*S*,3*R*)-1-biphenyl-4-ylmethyl-3-ethoxycarbonyl-1-butylcarbamoyl)propionate-(*S*)-3'-methyl-2'-(pentanoyl{2''-(tetrazol-5-ylate)biphenyl-4'-ylmethyl}amino)butyrate] hemipentahydrate.

**Dated this 09th day of December, 2016**

**Archana Shanker**

**Of Anand and Anand Advocates**

**Agents for the Applicant**

**IN/PA- 149**