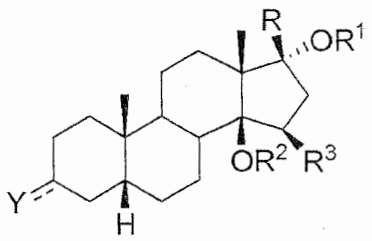
CLAIMS

1. Use of a compound of formula (I)



(I)

wherein:

the symbol --- represents a single or a double bond;

Y is oxygen or guanidinoimino when --- in position 3 is a double bond;

Y is hydroxy, OR^4 or SR^4, when --- in position 3 is a single bond and can have an alpha or beta configuration;

R is an unsubstituted or substituted 3-furyl or 4-pyridazinyl group;

R^1 is hydrogen; methyl; ethyl or n-propyl substituted by OH or NR^5R^6;

R^2 is hydrogen or together to R^3 is a bond of an oxirane ring;

R^3 is hydrogen or together to R^2 is a bond of an oxirane ring;

R^4 is hydrogen; methyl; C2-C6 alkyl or C3-C6 alkenyl or C2-C6 acyl, these alkyl, alkenyl and acyl groups being unsubstituted or substituted by a quaternary ammonium group or one or more OR^7, NR^8R^9, formyl, amidino, guanidinoimino or by NR^8R^9 and hydroxy;

R^5, R^6 are independently hydrogen; methyl; C2-C6 alkyl unsubstituted or substituted by one $NR^{10}R^{11}$, or $NR^{10}R^{11}$ and hydroxy, or R^5 and R^6 taken together with the nitrogen atom form an unsubstituted or substituted saturated or unsaturated penta- or hexa-monoheterocyclic ring, optionally containing another heteroatom chosen from oxygen or sulfur or nitrogen;

R^7 is hydrogen, methyl or C2-C4 alkyl, this alkyl being unsubstituted or substituted by one or more $NR^{10}R^{11}$ or by $NR^{10}R^{11}$ and hydroxy;

R^8, R^9 are independently hydrogen; methyl; C2-C6 alkyl or C3-C6 alkenyl, these alkyl and alkenyl groups being unsubstituted or substituted by one or more $NR^{10}R^{11}$, or $NR^{10}R^{11}$ and hydroxy, or R^8 and R^9 taken together with the nitrogen atom form an unsubstituted or substituted saturated or unsaturated penta- or hexa-monoheterocyclic ring, optionally containing another heteroatom chosen from oxygen or sulfur or nitrogen, or R^8 is hydrogen and R9 is amidino; or NR^8R^9 represents propargylamino,

R^{10}, R^{11} are independently hydrogen, C1-C6 alkyl, or R^{10} and R^{11}, taken together with the nitrogen atom form a saturated or unsaturated penta- or hexa-monoheterocyclic ring; for the prevention or treatment of restenosis.

2. Use of a compound of formula (I) for the prevention or treatment of diseases due to organ fibrosis.

3. Use of a compound of formula (I) of claims 1 or 2, selected from the group consisting of:

17 beta -(3-Furyl)-5 beta -androstane-3 beta, 14 beta, 17 alpha –triol;

3 beta -(2-Hydroxyethoxy)-17 beta -(3-furyl)-5 beta -androstane-14 beta, 17 alpha –diol;

3 beta -(2-Aminoethoxy)-17 beta -(3-furyl)-5 beta -androstane-14 beta, 17 alpha –diol;

3 beta -(3-Aminopropoxy)-17 beta -(3-furyl)-5 beta -androstane-14 beta, 17 alpha –diol;

3 beta -(2-Methylaminoethoxy)-17 beta -(3-furyl)-5 beta -androstane-14 beta ,17 alpha –diol;

3 beta -(2-(1-Pyrrolidinyl)ethoxy)-17 beta -(3-furyl)-5 beta -androstane-14 beta, 17 alpha –diol;

3 beta -(2-(3-(1-Pyrrolidinyl)propoxy)ethoxy)-17 beta -(3-furyl)-5 beta -androstane-14 beta, 17 alpha –diol;

3 beta -(3-(1-Pyrrolidinyl)propoxy)-17 beta -(3-furyl)-5 beta -androstane-14 beta, 17 alpha–diol;

3 beta -(2-(1-Imidazolyl)ethoxy)-17 beta -(3-furyl)-5 beta -androstane-14 beta, 17 alpha –diol;

3 beta -(2-(2-Imidazolin-2-yl)ethoxy)-17 beta -(3-furyl)-5 beta -androstane-14 beta, 17 alpha –diol;

3 beta -(2-(2-Amidino)ethoxy)-17 beta -(3-furyl)-5 beta -androstane-14 beta, 17 alpha –diol;

3 beta -(2-(2-(1-Pyrrolidinyl)ethoxy)ethoxy)-17 beta -(3-furyl)-5 beta -androstane-14 beta, 17 alpha –diol;

3 beta -(2-Guanidinoethoxy)-17 beta -(3-furyl)5 beta -androstane-14 beta, 17 alpha –diol;

3 beta -(3-Guanidinopropoxy)-17 beta -(3-furyl)-5 beta -androstane-14 beta, 17 alpha –diol;

3 beta -(3-Amino-2-hydroxypropoxy)-17 beta -(3-furyl)-5 beta -androstane-14 beta, 17 alpha –diol;

3 beta -(2,3-Diaminopropoxy)-17 beta -(3-furyl)5 beta -androstane-14 beta, 17 alpha –diol;

17 beta -(3-Furyl)-17 alpha -methoxy-5 beta -androstane-3 beta, 14 beta –diol;

17 beta -(3-Furyl)-17 alpha -(2-(1-pyrrolidinyl)ethoxy)-5 beta -androstane-3 beta, 14 beta –diol;

17 beta -(3-Furyl)-17 alpha -(3-aminopropoxy)-5 beta -androstane-3 beta, 14 beta –diol;

3 beta -(2-(1-Pyrrolidinyl)ethoxy)-17 beta -(3-furyl)-17 alpha -methoxy-5 beta -androstan-14 beta –ol;

3 beta, 17 alpha -Bis(2-(1-pyrrolidinyl)ethoxy)-17 beta -(3-furyl)-5 beta -androstan-14 beta –ol;

3 beta, 17 alpha -Bis(3-aminopropoxy)-17 beta -(3-furyl)-5 beta -androstan-14 beta –ol;

14 beta, 17 alpha -Dihydroxy-17 beta -(3-furyl)-5 beta -androstan-3-one;

3-Guanidinoimino-17 beta -(3-furyl)-5 beta -androstane-14 beta, 17 alpha –diol;

17 beta -(4-Pyridazinyl)-5 beta -androstane-3 beta, 14 beta, 17 alpha –triol;

3 beta -(2-Hydroxyethoxy)-17 beta -(4-pyridazinyl)5 beta -androstane-14 beta, 17 alpha –diol;

3 beta -(3-Aminopropoxy)-17 beta -(4-pyridazinyl)-5 beta -androstane-14 beta,17 alpha –diol;

3 beta -(2-(1-Pyrrolidinyl)ethoxy)-17 beta -(4-pyridazinyl)-5 beta -androstane-14 beta, 17 alpha –diol;

3 beta -(3-(1-Pyrrolidinyl)propoxy)-17 beta -(4-pyridazinyl)-5 beta -androstane-14 beta, 17 alpha –diol;

17 beta -(4-Pridazinyl)-17 alpha -(3-aminopropoxy)-5 beta -androstane-3 beta, 14 beta –diol;

3 beta -(2-(1-Pyrrolidinyl)ethoxy)-17 beta -(4-pyridazinyl)-17 alpha -methoxy-5 beta -androstan-14 beta –ol;

3 beta -(2-(1-Pyrrolidinyl)ethoxy)-17 beta -(4-pyridazinyl)-17 alpha -(3-amino-propoxy)-5 beta -androstan-14 beta –ol;

14 beta, 17 alpha -Dihydroxy-17 beta -(4-pyridazinyl)-5 beta -androstan-3-one;

3-Guanidinoimino-17 beta -(4-pyridazinyl)-5 beta -androstane-14 beta, 17 alpha –diol;

14 beta, 15 beta -Epoxy-17 beta -(3-furyl)-5 beta -androstane-3 beta, 17 alpha –diol;

3 beta -(2-Hydroxyethoxy)-14 beta, 15 beta -epoxy-17 beta -(3-furyl)-5 beta -androstan-17 alpha –ol;

3 beta -(3-Aminopropoxy)-14 beta, 15 beta -epoxy-17 beta -(3-furyl)-5 beta -androstan-17 alpha –ol;

3 beta -(2-(1-Pyrrolidinyl)ethoxy)-14 beta, 15 beta -epoxy-17 beta -(3-furyl)-5 beta -androstan-17 alpha –ol;

3 beta -(3-(1-Pyrrolidinyl)propoxy)-14 beta, 15 beta -epoxy-17 beta -(3-furyl)-5 beta -androstan-17 alpha –ol;

3 beta -(2-(1-Pyrrolidinyl)ethoxy)-17 beta -(3-furyl)-17 alpha -methoxy-14 beta, 15 beta -epoxy-5 beta –androstane;

17 alpha -Hydroxy-17 beta -(3-furyl)-14 beta, 15 beta -epoxy-5 beta -androstan-3-one;

3-Guanidinoimino-17 beta -(3-furyl)-14 beta, 15 beta -epoxy-5 beta -androstan-17 alpha –ol;

14 beta, 15 beta -Epoxy-17 beta -(4-pyridazinyl)-5 beta -androstane-3 beta, 17 alpha –diol;

and the 3 alpha derivatives of the above identified 3 beta derivatives and also the corresponding 3 alpha and 3 beta thioderivatives where Y = S.

4. Use of a compound of formula (I) for preparing a medicament for the prevention and/or treatment of obstructive vascular lesions following vascular surgery or diseases due to organ fibrosis.

5. Use according to claim 4, in which the preferred compound is 17 beta -(3-Furyl)-5 beta -androstane-3 beta, 14 beta, 17 alpha –triol.

6. Use according to claim 4, in which vascular surgery is selected from the group consisting of angioplasty, percutaneous transluminal coronary angioplasty, by-pass grafting, endartherectomy or stent implantation.

7. Use according to claim 4, in which the obstructive vascular lesion is restenosis after angioplastic or after endoartherectomy.

8. Use according to claim 4, in which the disease due to organ fibrosis is selected from the group comprising: kidney fibrosis; heart fibrosis; pancreas fibrosis; lung fibrosis; vascular vessel fibrosis; skin fibrosis; bone marrow fibrosis, liver fibrosis; or organs fibrosis due to a disease selected from the group consisting of pachyderma, keloid and systemic sclerosis.

9. Use according to claim 8, in which liver fibrosis is due to a virus disease, alcoholic hepatitis, non-alcoholic steatohepatitis, cirrhosis or liver cancer.

10. Use according to claim 4, in which the compound is administered in a dose of from 0.05 mg to 20 mg per day.

11. Use according to claim 4, in which the compound is administered in a dose of from 0.5 mg to 15 mg.

12. Use according to claim 4, in which the compound is administered in a dose of from 5 mg to 10 mg.

13. Use according to claims 4, in which the compound is administered in a single dose schedule.

14. Use according to claims 4, in which the compound is administered in a multiple dose schedule.

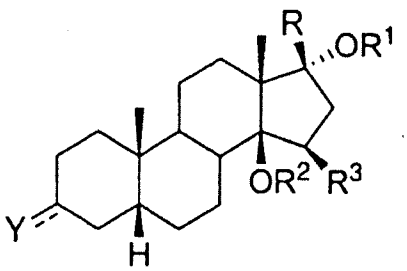
15. Use according to claim 4, in which the composition is for oral, intravenous, intramuscular, intra-arterial, intramedullary, intrathecal, intraventricular, transdermal, transcutaneous, subcutaneous, intraperitoneal, intranasal, enteral, topical, sublingual or rectal administration.

16. Use according to claim 4, in which the composition is administered locally on the diseased tissue after surgical operation.

17. Use according to claim 4, in which the composition is coated on the stent; incorporated into a controlled-release matrix; or incorporated into liposomes.

CLAIMS

1. Use of a compound of formula (I) for preparing a medicament for the prevention and/or treatment of obstructive vascular lesions following vascular surgery or diseases due to organ fibrosis, wherein the compound of formula (I) is:



(I)

wherein:

the symbol --- represents a single bond;

Y is OR^4, and --- in position 3 is a single bond which can have an alpha or beta configuration;

R is an unsubstituted or substituted 3-furyl;

R^1 is hydrogen; methyl; ethyl or n-propyl substituted by OH or NR^5R^6;

R^2 is hydrogen;

R^3 is hydrogen;

R^4 is hydrogen; methyl; or C2-C6 alkyl wherein the alkyl can be unsubstituted or substituted by a quaternary ammonium group or one OR^7 or NR^8R^9;

R^5, R^6 are independently hydrogen; methyl; or R^5 and R^6 taken together with the nitrogen atom form an unsubstituted or substituted saturated or unsaturated penta- or hexa-monoheterocyclic ring, optionally containing another heteroatom chosen from oxygen or sulfur or nitrogen;

R^7 is hydrogen or methyl;

R^8, R^9 are independently hydrogen; methyl; or C2-C6 alkyl wherein the alkyl can be unsubstituted or substituted by one $NR^{10}R^{11}$, or R^8 and R^9 taken together with the nitrogen atom form an unsubstituted penta- or hexa-monoheterocyclic ring, ;

R^{10}, R^{11} are independently hydrogen, C1-C6 alkyl, or R^{10} and R^{11}, taken together with the nitrogen atom form a saturated penta- or hexa-monoheterocyclic ring.

2. Use according to claim 1, wherein said compound is 17 beta -(3-Furyl)-5 beta -androstane-3 beta, 14 beta, 17 alpha –triol.

3. Use according to claim 1, wherein vascular surgery is selected from the group consisting of angioplasty, percutaneous transluminal coronary angioplasty, by-pass grafting, endartherectomy or stent implantation.

4. Use according to claim 1, wherein the obstructive vascular lesion is restenosis after angioplastic or after endoartherectomy.

5. Use according to claim 1, wherein the disease due to organ fibrosis is selected from the group comprising: kidney fibrosis; heart fibrosis; pancreas fibrosis; lung fibrosis; vascular vessel fibrosis; skin fibrosis; bone marrow fibrosis, liver fibrosis; or organs fibrosis due to a disease selected from the group consisting of pachyderma, keloid and systemic sclerosis.

6. Use according to claim 5, wherein liver fibrosis is due to a virus disease, alcoholic hepatitis, non-alcoholic steatohepatitis, cirrhosis or liver cancer.

7. Use according to claim 1, wherein the compound is administered in a dose of from 0.05 mg to 20 mg per day.

8. Use according to claim 1, wherein the compound is administered in a dose of from 0.5 mg to 15 mg.

9. Use according to claim 1, wherein the compound is administered in a dose of from 5 mg to 10 mg.

10. Use according to claim 1, wherein the compound is administered in a single dose schedule.

11. Use according to claim 1, wherein the compound is administered in a multiple dose schedule.

12. Use according to claim 1, wherein the medicament is for oral, intravenous, intramuscular, intra-arterial, intramedullary, intrathecal, intraventricular, transdermal, transcutaneous, subcutaneous, intraperitoneal, intranasal, enteral, topical, sublingual or rectal administration.

13. Use according to claim 12, wherein the medicament is administered locally on the diseased tissue after surgical operation.

14. Use according to claim 12, wherein the medicament is coated on a stent; incorporated into a controlled-release matrix; or incorporated into liposomes.

15. Use of according to claim 1, wherein the compound of formula (I) is selected from the group consisting of:

17 beta -(3-Furyl)-5 beta -androstane-3 beta, 14 beta, 17 alpha-triol;

3 beta -(2-Hydroxyethoxy)-17 beta -(3-furyl)-5 beta -androstane-14 beta, 17 alpha -diol;

3 beta -(2-Aminoethoxy)-17 beta -(3-furyl)-5 beta -androstane-14 beta, 17 alpha -diol;

3 beta -(3-Aminopropoxy)-17 beta -(3-furyl)-5 beta -androstane-14 beta, 17 alpha -diol;

3 beta -(2-Methylaminoethoxy)-17 beta -(3-furyl)-5 beta -androstane-14 beta ,17 alpha -diol;

3 beta -(2-(1-Pyrrolidinyl)ethoxy)-17 beta -(3-furyl)-5 beta -androstane-14 beta, 17 alpha –diol;

3 beta -(3-(1-Pyrrolidinyl)propoxy)-17 beta -(3-furyl)-5 beta -androstane-14 beta, 17 alpha–diol;

17 beta -(3-Furyl)-17 alpha -methoxy-5 beta -androstane-3 beta, 14 beta –diol;

17 beta -(3-Furyl)-17 alpha -(2-(1-pyrrolidinyl)ethoxy)-5 beta -androstane-3 beta, 14 beta –diol;

17 beta -(3-Furyl)-17 alpha -(3-aminopropoxy)-5 beta -androstane-3 beta, 14 beta –diol;

3 beta -(2-(1-Pyrrolidinyl)ethoxy)-17 beta -(3-furyl)-17 alpha -methoxy-5 beta -androstan-14 beta –ol;

3 beta, 17 alpha -Bis(3-aminopropoxy)-17 beta -(3-furyl)-5 beta -androstan-14 beta –ol;

14 beta, 17 alpha -Dihydroxy-17 beta -(3-furyl)-5 beta -androstan-3-one;

14 beta, 15 beta -Epoxy-17 beta -(3-furyl)-5 beta -androstane-3 beta, 17 alpha –diol;

3 beta -(2-Hydroxyethoxy)-14 beta, 15 beta -epoxy-17 beta -(3-furyl)-5 beta -androstan-17 alpha –ol;

3 beta -(3-Aminopropoxy)-14 beta, 15 beta -epoxy-17 beta -(3-furyl)-5 beta -androstan-17 alpha –ol;

3 beta -(2-(1-Pyrrolidinyl)ethoxy)-14 beta, 15 beta -epoxy-17 beta -(3-furyl)-5 beta -androstan-17 alpha –ol;

3 beta -(3-(1-Pyrrolidinyl)propoxy)-14 beta, 15 beta -epoxy-17 beta -(3-furyl)-5 beta -androstan-17 alpha –ol;

3 beta -(2-(1-Pyrrolidinyl)ethoxy)-17 beta -(3-furyl)-17 alpha -methoxy-14 beta, 15 beta -epoxy-5 beta –androstane;

17 alpha -Hydroxy-17 beta -(3-furyl)-14 beta, 15 beta -epoxy-5 beta -androstan-3-one.