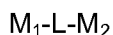
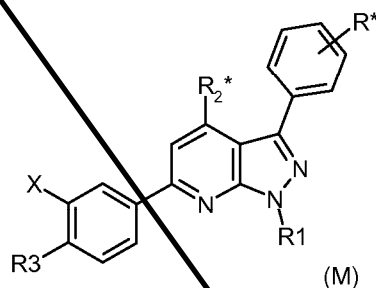


CLAIMS

5 FGF receptor agonist compounds corresponding to the general formula:



in which M_1 and M_2 , which may be identical or different, each represent, independently of one another, a monomer unit M and L represents a linker group which links M_1 and M_2 covalently, characterized in that said monomer unit corresponds to the general formula M which follows:



15 in which:

- the asterisk * indicates the site of linkage between the monomer and the linker L, said linkage site of each monomer unit M_1 and M_2 being located on one of the substituents R or R_2 ,
- R represents a hydrogen atom (in which case the site of linkage of L with M is located on R_2) or a group $-\text{CONH}^*$,
- R_1 represents a hydrogen atom or a linear (C_1 - C_3)alkyl group,
- R_2 represents a group $-\text{CONH}_2$ (in which case the site of linkage of L with M is located on R) or $-\text{CONH}^*$,

- R_3 represents a group $-\text{CO}_2R_4$, where R_4 represents a hydrogen atom or a linear ($\text{C}_1\text{-C}_4$)alkyl group,

5 - X is a halogen atom chosen from fluorine, chlorine and bromine atoms, in the form of a base or of an addition salt with an acid or with a base.

10 2. FGF receptor agonist compounds according to Claim 1, characterized in that R_1 represents a hydrogen atom, in the form of a base or of an addition salt with an acid or with a base.

10 3. FGF receptor agonist compounds according to either of the preceding claims, characterized in that R_3 represents a group $-\text{CO}_2R_4$, with R_4 representing a hydrogen atom, in the form of a base or of an addition salt with an acid or with a base.

15 4. FGF receptor agonist compounds according to one of the preceding claims, characterized in that X represents a fluorine atom, in the form of a base or of an addition salt with an acid or with a base.

20 5. FGF receptor agonist compounds according to one of Claims 1 to 4, characterized in that:

- R represents a group $-\text{CONH}^*$, where the asterisk * indicates the site of linkage of L, firstly, with the monomer unit M_1 and, secondly, with the monomer unit M_2 ,
 - R_1 represents a hydrogen atom or a linear ($\text{C}_1\text{-C}_3$)alkyl group and advantageously a hydrogen atom, in the form of a base or of an addition salt with an acid or with a base.
- 25

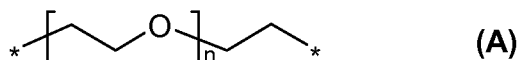
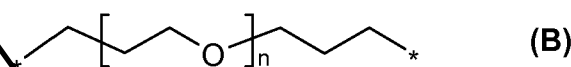
30 6. FGF receptor agonist compounds according to one of Claims 1 to 5, characterized in that R is located in the meta or para position, in the form of a base or of an addition salt with an acid or with a base.

30 7. FGF receptor agonist compounds according to one of Claims 1 to 4, characterized in that:

- R represents a hydrogen atom,
- R_2 represents a group $-\text{CONH}^*$, where the asterisk * indicates the site of

linkage of L, firstly, with the monomer unit M₁ and, secondly, with the monomer unit M₂, in the form of a base or of an addition salt with an acid or with a base.

8. FGF receptor agonist compounds according to any one of Claims 1 to 7, characterized in that the linker group L can be more particularly chosen from the following PEG radicals:



in which

- the asterisk * indicates the atom for linkage of L with the monomer unit M on the substituent R* or R₂*;
- n represents an integer from 2 to 6, in the form of a base or of an addition salt with an acid or with a base.

9. FGF receptor agonist compounds according to any one of Claims 1 to 8, characterized in that n is an integer of 3 or 4, in the form of a base or of an addition salt with an acid or with a base.

10. Compound according to any one of the preceding claims, characterized in that it is chosen from:

Compound No. 1: 3,3'-{ethane-1,2-diylbis[oxypropane-3,1-diylcarbamoyl(3-phenyl-1H-pyrazolo[3,4-b]pyridine-4,6-diyl)]}bis(6-fluorobenzoic acid);

Compound No. 2: 5-[4-({15-[6-(3-carboxy-4-fluorophenyl)-3-phenyl-1H-pyrazolo[3,4-b]pyridin-4-yl]-15-oxo-4,7,10-trioxa-14-azapentadec-1-yl}carbamoyl)-3-phenyl-1H-pyrazolo[3,4-b]pyridin-6-yl]-2-fluorobenzoic acid;

Compound No. 3: 5-[4-({16-[6-(3-carboxy-4-fluorophenyl)-3-phenyl-1H-pyrazolo[3,4-b]pyridin-4-yl]-16-oxo-3,6,9,12-tetraoxa-15-azahexadec-1-yl}carbamoyl)-3-phenyl-1H-pyrazolo[3,4-b]pyridin-6-yl]-2-fluorobenzoic acid;

Compound No. 4: 5-[4-({19-[6-(3-carboxy-4-fluorophenyl)-3-phenyl-1H-pyrazolo[3,4-b]pyridin-4-yl]-19-oxo-3,6,9,12,15-pentaoxa-18-azanonadec-1-yl}carbamoyl)-3-phenyl-1H-pyrazolo[3,4-b]pyridin-6-yl]-2-fluorobenzoic acid;

Compound No. 5: 5-[4-({21-[6-(3-carboxy-4-fluorophenyl)-3-phenyl-1*H*-pyrazolo[3,4-*b*]pyridin-4-yl]-21-oxo-4,7,10,13,16-pentaoxa-20-azahenicos-1-yl}carbamoyl)-3-phenyl-1*H*-pyrazolo[3,4-*b*]pyridin-6-yl)-2-fluorobenzoic acid;

Compound No. 6: 5-(4-carbamoyl-3-{3-[(15-{3-[4-carbamoyl-6-(3-carboxy-4-fluorophenyl)-1*H*-pyrazolo[3,4-*b*]pyridin-3-yl]phenyl}-15-oxo-4,7,10-trioxa-14-azapentadec-1-yl)carbamoyl]phenyl}-1*H*-pyrazolo[3,4-*b*]pyridin-6-yl)-2-fluorobenzoic acid;

Compound No. 7: 3,3'-{ethane-1,2-diylbis[oxyethane-2,1-diylcarbamoylbenzene-3,1-diyl(4-carbamoyl-1*H*-pyrazolo[3,4-*b*]pyridine-3,6-diyl)]}bis(6-fluorobenzoic acid);

Compound No. 8: 5-(4-carbamoyl-3-{4-[(15-{4-[4-carbamoyl-6-(3-carboxy-4-fluorophenyl)-1*H*-pyrazolo[3,4-*b*]pyridin-3-yl]phenyl}-15-oxo-4,7,10-trioxa-14-azapentadec-1-yl)carbamoyl]phenyl}-1*H*-pyrazolo[3,4-*b*]pyridin-6-yl)-2-fluorobenzoic acid;

Compound No. 9: 3,3'-{ethane-1,2-diylbis[oxyethane-2,1-diylcarbamoylbenzene-4,1-diyl(4-carbamoyl-1*H*-pyrazolo[3,4-*b*]pyridine-3,6-diyl)]}bis(6-fluorobenzoic acid).

11. Process for preparing an FGF receptor agonist compound according to any one of Claims 1 to 10, comprising the reaction of at least one monomer comprising at least one carboxylic acid group with a reactant of formula $H_2N-L-NH_2$ after activation.

12. Medicament, characterized in that it comprises an FGF receptor agonist compound according to any one of Claims 1 to 10, or an addition salt of this compound with a pharmaceutically acceptable acid or base of this compound.

13. FGF receptor agonist compound according to any one of Claims 1 to 10, as a medicament.

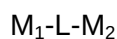
14. Pharmaceutical composition, characterized in that it comprises a compound according to any one of Claims 1 to 10, or a pharmaceutically acceptable salt of this compound, and also at least one pharmaceutically acceptable excipient.

15. Use of an FGF receptor agonist compound according to any one of Claims 1 to 10, for preparing a medicament intended for the treatment of diseases requiring FGF receptor activation.

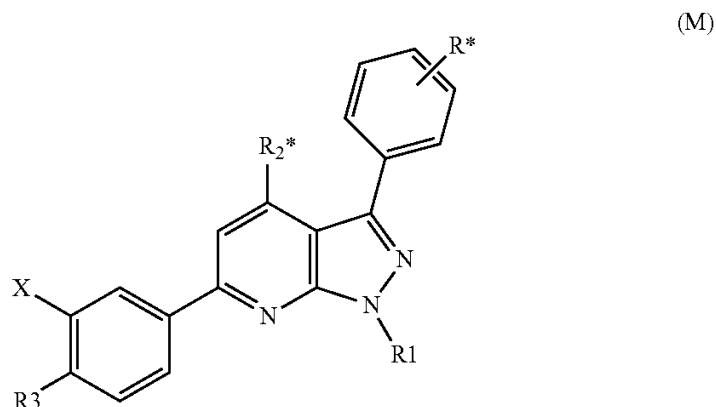
16. FGF receptor agonist compound according to any one of Claims 1 to 10, for use thereof in the treatment of cardiac ischaemia, the treatment of diseases associated with narrowing or obstruction of the arteries or of arteritis, the treatment of angina pectoris, the treatment of thromboangiitis obliterans, the treatment of atherosclerosis, treatment for inhibiting post-angioplasty or post-endoarterectomy restenosis, the treatment of healing, treatment for muscle regeneration, treatment for myoblast survival, treatment for sarcopenia, loss of functionality of the smooth muscles of the sphincters, the treatment of nociception and the treatment of chronic pain, the treatment of peripheral neuropathy, treatment for improving bioartificial pancreatic graft survival in diabetic patients, treatment to bring about a decrease in cholesterol associated with a decrease in adiposity, treatment for improving graft revascularization and graft survival, the treatment of retinal degeneration, the treatment of pigmentary retinitis, the treatment of osteoarthritis, the treatment of pre-eclampsia, the treatment of vascular lesions and of acute respiratory distress syndrome, bone protection treatment, or treatment for hair-follicle protection.

CLAIMS

1. FGF receptor agonist compounds corresponding to the general formula:



in which M_1 and M_2 , which may be identical or different, each represent, independently of one another, a monomer unit M and L represents a linker group which links M_1 and M_2 covalently, characterized in that said monomer unit corresponds to the general formula M which follows:



in which:

the asterisk * indicates the site of linkage between the monomer and the linker L, said linkage site of each monomer unit M_1 and M_2 being located on one of the substituents R or R_2 ,

R represents a hydrogen atom (in which case the site of linkage of L with M is located on R_2) or a group $-\text{CONH}^*$,

R_1 represents a hydrogen atom or a linear ($\text{C}_1\text{-C}_3$) alkyl group,

R_2 represents a group $-\text{CONH}_2$ (in which case the site of linkage of L with M is located on R) or $-\text{CONH}^*$,

R_3 represents a group $-\text{CO}_2\text{R}_4$, where R_4 represents a hydrogen atom or a linear ($\text{C}_1\text{-C}_4$) alkyl group, and

X is a halogen atom chosen from fluorine, chlorine and bromine atoms,

in the form of a base or of an addition salt with an acid or with a base.

2. FGF receptor agonist compounds according to claim 1, characterized in that R_1 represents a hydrogen atom, in the form of a base or of an addition salt with an acid or with a base.

3. FGF receptor agonist compounds according to claim 1, characterized in that R_3 represents a group $-\text{CO}_2R_4$, with R_4 representing a hydrogen atom, in the form of a base or of an addition salt with an acid or with a base.

4. FGF receptor agonist compounds according to claim 1, characterized in that X represents a fluorine atom, in the form of a base or of an addition salt with an acid or with a base.

5. FGF receptor agonist compounds according to claim 1, characterized in that:
R represents a group $-\text{CONH}^*$, where the asterisk * indicates the site of linkage of L, firstly, with the monomer unit M_1 and, secondly, with the monomer unit M_2 ,

R_1 represents a hydrogen atom or a linear $(\text{C}_1\text{-C}_3)$ alkyl group and advantageously a hydrogen atom, in the form of a base or of an addition salt with an acid or with a base.

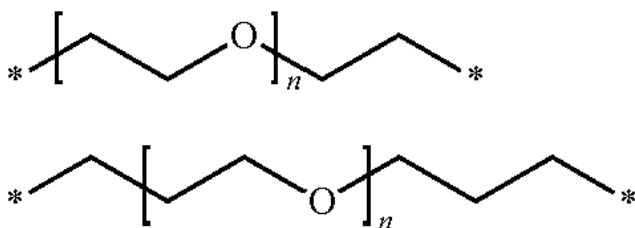
6. FGF receptor agonist compounds according to claim 1, characterized in that R is located in the meta or para position, in the form of a base or of an addition salt with an acid or with a base.

7. FGF receptor agonist compounds according to claim 1, characterized in that:
R represents a hydrogen atom,

R_2 represents a group $-\text{CONH}^*$, where the asterisk $*$ indicates the site of linkage of L, firstly, with the monomer unit M_1 and, secondly, with the monomer unit M_2 ,

in the form of a base or of an addition salt with an acid or with a base.

8. FGF receptor agonist compounds according to claim 1, characterized in that the linker group L can be more particularly chosen from the following PEG radicals:



in which

the asterisk $*$ indicates the atom for linkage of L with the monomer unit M on the substituent R^* or R_2^* ;

n represents an integer from 2 to 6, in the form of a base or of an addition salt with an acid or with a base.

9. FGF receptor agonist compounds according to claim 1, characterized in that n is an integer of 3 or 4, in the form of a base or of an addition salt with an acid or with a base.

10. Compound according to claim 1, characterized in that it is chosen from:

Compound No. 1: 3,3'-{ethane-1,2-diylbis[oxypropane-3,1-diylcarbamoyl(3-phenyl-1H-pyrazolo[3,4-b]pyridine-4,6-diyl)]}bis(6-fluorobenzoic acid);

Compound No. 2: 5-[4-({15-[6-(3-carboxy-4-fluorophenyl)-3-phenyl-1H-pyrazolo[3,4-b]pyridin-4-yl]-15-oxo-4,7,10-trioxa-14-azapentadec-1-yl}carbamoyl)-3-phenyl-1H-pyrazolo[3,4-b]pyridin-6-yl]-2-fluorobenzoic acid;

Compound No. 3: 5-[4-({16-[6-(3-carboxy-4-fluorophenyl)-3-phenyl-1H-pyrazolo[3,4-b]pyridin-4-yl]-16-oxo-3,6,9,12-tetraoxa-15-azahexadec-1-yl}carbamoyl)-3-phenyl-1H-pyrazolo[3,4-b]pyridin-6-yl]-2-fluorobenzoic acid;

Compound No. 4: 5-[4-({19-[6-(3-carboxy-4-fluorophenyl)-3-phenyl-1H-pyrazolo[3,4-b]pyridin-4-yl]-19-oxo-3,6,9,12,15-pentaoxa-18-azanonadec-1-yl}carbamoyl)-3-phenyl-1H-pyrazolo[3,4-b]pyridin-6-yl]-2-fluorobenzoic acid;

Compound No. 5: 5-[4-({21-[6-(3-carboxy-4-fluorophenyl)-3-phenyl-1H-pyrazolo[3,4-b]pyridin-4-yl]-21-oxo-4,7,10,13,16-pentaoxa-20-azahenicos-1-yl}carbamoyl)-3-phenyl-1H-pyrazolo[3,4-b]pyridin-6-yl]-2-fluorobenzoic acid;

Compound No. 6: 5-(4-carbamoyl-3-{3-[(15-{3-[4-carbamoyl-6-(3-carboxy-4-fluorophenyl)-1H-pyrazolo[3,4-b]pyridin-3-yl]phenyl}-15-oxo-4,7,10-trioxa-14-azapentadec-1-yl)carbamoyl]phenyl}-1H-pyrazolo[3,4-b]pyridin-6-yl)-2-fluorobenzoic acid;

Compound No. 7: 3,3'-{ethane-1,2-diylbis[oxyethane-2,1-diylcarbamoylbenzene-3,1-diyl(4-carbamoyl-1H-pyrazolo[3,4-b]pyridine-3,6-diyl)]}bis(6-fluorobenzoic acid);

Compound No. 8: 5-(4-carbamoyl-3-{4-[(15-{4-[4-carbamoyl-6-(3-carboxy-4-fluorophenyl)-1H-pyrazolo[3,4-b]pyridin-3-yl]phenyl}-15-oxo-4,7,10-trioxa-14-azapentadec-1-yl)carbamoyl]phenyl}-1H-pyrazolo[3,4-b]pyridin-6-yl)-2-fluorobenzoic acid; and

Compound No. 9: 3,3'-{ethane-1,2-diylbis[oxyethane-2,1-diylcarbamoylbenzene-4,1-diyl(4-carbamoyl-1H-pyrazolo[3,4-b]pyridine-3,6-diyl)]}bis(6-fluorobenzoic acid).

11. Process for preparing an FGF receptor agonist compound according to claim 1, comprising the reaction of at least one monomer comprising at least one carboxylic acid group with a reactant of formula $H_2N-L-NH_2$ after activation.

12. A pharmaceutical composition comprising an FGF receptor agonist compound according to claim 1, or an addition salt of this compound with a pharmaceutically acceptable acid or base of this compound.
13. A pharmaceutical composition comprising a compound according to claim 1, or a pharmaceutically acceptable salt of this compound, and also at least one pharmaceutically acceptable excipient.