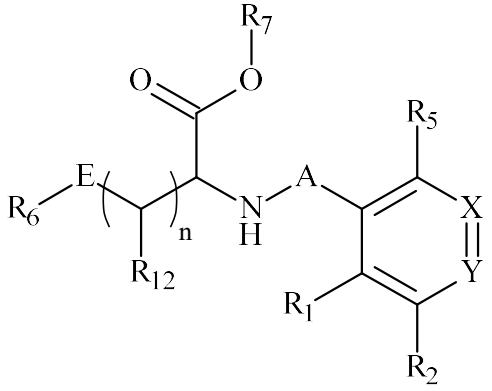
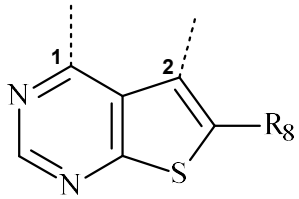
CLAIMS

1. Compounds of formula (I):



(I)

wherein:

- A represents the group  ,

in which **1** is linked to the -NH- group and **2** is linked to the aromatic ring,

- E represents a cycloalkyl group, a heterocycloalkyl group, an aryl group or a heteroaryl group,
- X represents a nitrogen atom or a C-R_4 group,
- Y represents a nitrogen atom or a C-R_3 group,
- R_1 represents a halogen atom, a linear or branched (C_1-C_6)alkyl group, a linear or branched (C_2-C_6)alkenyl group, a linear or branched (C_2-C_6)alkynyl group, a linear or branched (C_1-C_6)polyhaloalkyl group, a hydroxy group, a hydroxy(C_1-C_6)alkyl group, a linear or branched (C_1-C_6)alkoxy group, -S-(C_1-C_6)alkyl, a cyano group, a nitro group, -alkyl(C_0-C_6)-NR_9R_9', -O-alkyl(C_1-C_6)-NR_9R_9', -O-alkyl(C_1-C_6)-R_{10}, -C(O)-OR_9, -O-C(O)-R_9, -C(O)-NR_9R_9', -NR_9-C(O)-R_9', -NR_9-C(O)-OR_9', -alkyl(C_1-C_6)-NR_9-C(O)-R_9', -SO_2-NR_9R_9', -SO_2-alkyl(C_1-C_6),
- R_2, R_3, R_4 and R_5 independently of one another represent a hydrogen atom, a halogen atom, a linear or branched (C_1-C_6)alkyl group, a linear or branched

(C_2-C_6)alkenyl group, a linear or branched (C_2-C_6)alkynyl group, a linear or branched (C_1-C_6)polyhaloalkyl group, a hydroxy group, a hydroxy(C_1-C_6)alkyl group, a linear or branched (C_1-C_6)alkoxy group, -S-(C_1-C_6)alkyl, a cyano group, a nitro group, -alkyl(C_0-C_6)-NR_9R_9', -O-alkyl(C_1-C_6)-NR_9R_9', -O-alkyl(C_1-C_6)-R_{10}, -C(O)-OR_9, -O-C(O)-R_9, -C(O)-NR_9R_9', -NR_9-C(O)-R_9', -NR_9-C(O)-OR_9', -alkyl(C_1-C_6)-NR_9-C(O)-R_9', -SO_2-NR_9R_9', or -SO_2-alkyl(C_1-C_6),

or the substituents of the pair (R_1, R_2) form together with the carbon atoms carrying them an aromatic or non-aromatic ring composed of from 5 to 7 ring members, which may contain from 1 to 3 heteroatoms selected from oxygen, sulphur and nitrogen, it being understood that resulting ring may be substituted by from 1 to 2 groups selected from halogen, linear or branched (C_1-C_6)alkyl, -alkyl(C_0-C_6)-NR_9R_9', -$NR_{11}R_{11}$', -alkyl(C_0-C_6)-Cy_1, or oxo,

- R_6 represents a hydrogen atom, a halogen atom, a linear or branched (C_1-C_6)alkyl group, a linear or branched (C_2-C_6)alkenyl group, a linear or branched (C_2-C_6)alkynyl group, a linear or branched (C_1-C_6)polyhaloalkyl group, a hydroxy group, a linear or branched (C_1-C_6)alkoxy group, -S-(C_1-C_6)alkyl, a cyano group, a nitro group, -alkyl(C_0-C_6)-NR_9R_9', -O-Cy_1, -alkyl(C_0-C_6)-Cy_1, -alkenyl(C_2-C_6)-Cy_1, -alkynyl(C_2-C_6)-Cy_1, -O-alkyl(C_1-C_6)-R_{10}, -C(O)-OR_9, -O-C(O)-R_9, -C(O)-NR_9R_9', -NR_9-C(O)-R_9', -NR_9-C(O)-OR_9', -alkyl(C_1-C_6)-NR_9-C(O)-R_9', -SO_2-NR_9R_9', or -SO_2-alkyl(C_1-C_6),
- R_7 represents a hydrogen atom, a linear or branched (C_1-C_8)alkyl group, a -CHR_aR_b group, an aryl group, a heteroaryl group, an arylalkyl(C_1-C_6) group, or a heteroarylalkyl(C_1-C_6) group,
- R_8 represents a linear or branched (C_1-C_6)alkyl group, a linear or branched (C_2-C_6)alkenyl group, a linear or branched (C_2-C_6)alkynyl group, -Cy_2, a halogen atom, a cyano group, -C(O)-R_{11}, or -C(O)-$NR_{11}R_{11}$',
- R_9 and R_9' independently of one another represent a hydrogen atom, a linear or branched (C_1-C_6)alkyl group,

  or the substituents of the pair (R_9, R_9') form together with the nitrogen atom carrying them an aromatic or non-aromatic ring composed of from 5 to 7 ring members, which may contain in addition to the nitrogen atom from 1 to 3 heteroatoms selected from oxygen, sulphur and nitrogen, it being understood that

the nitrogen in question may be substituted by a group representing a hydrogen atom, or a linear or branched (C_1-C_6)alkyl group,

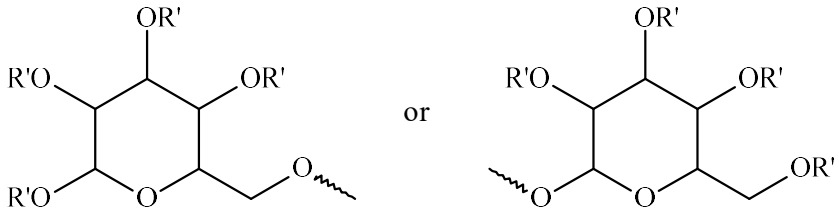
- R_{10} represents -Cy_3, -Cy_3-alkyl(C_0-C_6)-Cy_4, -C(O)-NR_9R_9', -NR_9R_9', -OR_9, -NR_9-C(O)-R_9', -O-alkyl(C_1-C_6)-OR_9, -SO_2-R_9, -C(O)-OR_9,or -NH-C(O)-NH-R_9,
- R_{11} and R_{11}' independently of one another represent a hydrogen atom or an optionally substituted linear or branched (C_1-C_6)alkyl group,
- R_{12} represents a hydrogen atom, a hydroxy group, or a hydroxy(C_1-C_6)alkyl group,
- R_a represents a hydrogen atom or a linear or branched (C_1-C_6)alkyl group,
- R_b represents a -O-C(O)-O-R_c group, a -O-C(O)-NR_cR_c' group, or a -O-P(O)(OR_c)$_2$ group,
- R_c and R_c' independently of one another represent a hydrogen atom, a linear or branched (C_1-C_8)alkyl group, a cycloalkyl group, a (C_1-C_6)alkoxy(C_1-C_6)alkyl group, a (C_1-C_6)alkoxycarbonyl(C_1-C_6)alkyl group,
  or the substituents of the pair (R_c, R_c') form together with the nitrogen atom carrying them a non-aromatic ring composed of from 5 to 7 ring members, which may contain in addition to the nitrogen atom from 1 to 3 heteroatoms selected from oxygen and nitrogen, it being understood that the nitrogen in question may be substituted by a group representing a linear or branched (C_1-C_6)alkyl group,
- Cy_1, Cy_2, Cy_3 and Cy_4 independently of one another, represent a cycloalkyl group, a heterocycloalkyl group, an aryl group or a heteroaryl group,
- n is an integer equal to 0, 1 or 2,

it being understood that:

- "aryl" means a phenyl, naphthyl, biphenyl group,
- "heteroaryl" means any mono- or bi-cyclic group composed of from 5 to 10 ring members, having at least one aromatic moiety and containing from 1 to 3 heteroatoms selected from oxygen, sulphur and nitrogen,
- "cycloalkyl" means any mono- or bi-cyclic non-aromatic carbocyclic group containing from 3 to 10 ring members,
- "heterocycloalkyl" means any mono- or bi-cyclic non-aromatic carbocyclic group containing from 3 to 10 ring members, and containing from 1 to 3 heteroatoms selected from oxygen, sulphur and nitrogen, which may include fused, bridged or

spiro ring systems,

it being possible for the aryl, heteroaryl, cycloalkyl and heterocycloalkyl groups so defined and the alkyl, alkenyl, alkynyl, alkoxy groups, to be substituted by from 1 to 4 groups selected from optionally substituted linear or branched (C_1-C_6)alkyl, optionally substituted linear or branched (C_2-C_6)alkenyl, optionally substituted linear or branched (C_2-C_6)alkynyl, optionally substituted linear or branched (C_1-C_6)alkoxy, optionally substituted (C_1-C_6)alkyl-S-, hydroxy, hydroxy(C_1-C_6)alkyl, oxo (or *N*-oxide where appropriate), nitro, cyano, -C(O)-OR', -O-C(O)-R', -C(O)-NR'R'', -O-C(O)-NR'R'', -NR'R'', -(C=NR')-OR'', -O-P(O)(OR')$_2$, -O-P(O)(O$^-$M$^+$)$_2$, linear or branched (C_1-C_6)polyhaloalkyl, trifluoromethoxy, halogen, or an aldohexose of formula:



in which each R' is independent;

it being understood that R' and R'' independently of one another represent a hydrogen atom or an optionally substituted linear or branched (C_1-C_6)alkyl group and M^+ represents a pharmaceutically acceptable monovalent cation,

their enantiomers, diastereoisomers and atropisomers, and addition salts thereof with a pharmaceutically acceptable acid or base.

2. Compound of formula (I) according to claim 1, wherein:

- R_1 and R_2 independently of one another represent a halogen atom, a linear or branched (C_1-C_6)alkyl group, a hydroxy group, a hydroxy(C_1-C_6)alkyl group, a linear or branched (C_1-C_6)alkoxy group,

  or the substituents of the pair (R_1, R_2) form together with the carbon atoms carrying them an aromatic ring composed of from 5 to 7 ring members, which may contain from 1 to 3 nitrogen atoms, it being understood that resulting ring may be

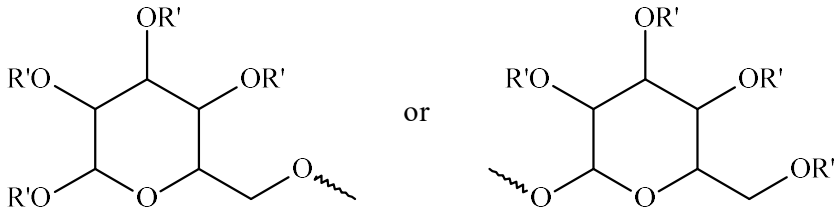
substituted by from 1 to 2 groups selected from halogen, linear or branched (C_1-C_6)alkyl, or -alkyl(C_0-C_6)-NR_9R_9',

- R_3 represents a hydrogen atom, a halogen atom, a linear or branched (C_1-C_6)alkyl group, a hydroxy group, a linear or branched (C_1-C_6)alkoxy group, or -O-alkyl(C_1-C_6)-NR_9R_9',
- R_4 and R_5 independently of one another represent a hydrogen atom, a halogen atom, a linear or branched (C_1-C_6)alkyl group, a hydroxy group, a linear or branched (C_1-C_6)alkoxy group,
- R_6 represents a hydrogen atom, a halogen atom, a linear or branched (C_1-C_6)alkyl group, a linear or branched (C_1-C_6)polyhaloalkyl group, a hydroxy group, a linear or branched (C_1-C_6)alkoxy group, a cyano group, a nitro group, -alkyl(C_0-C_6)-NR_9R_9', -alkyl(C_0-C_6)-Cy_1, -O-alkyl(C_1-C_6)-R_{10}, or -C(O)-NR_9R_9',
- R_7 represents a hydrogen atom, a linear or branched (C_1-C_8)alkyl group, a -CHR_aR_b group, or a heteroarylalkyl(C_1-C_6) group,
- R_8 represents a linear or branched (C_1-C_6)alkyl group, a linear or branched (C_2-C_6)alkenyl group, a linear or branched (C_2-C_6)alkynyl group, -Cy_2, a halogen atom, or -C(O)-R_{11},
- R_9 and R_9' independently of one another represent a hydrogen atom, or a linear or branched (C_1-C_6)alkyl group,

  or the substituents of the pair (R_9, R_9') form together with the nitrogen atom carrying them a non-aromatic ring composed of from 5 to 7 ring members, which may contain in addition to the nitrogen atom from 1 to 3 heteroatoms selected from oxygen and nitrogen, it being understood that the nitrogen in question may be substituted by a group representing a linear or branched (C_1-C_6)alkyl group,
- R_{10} represents -Cy_3 or -Cy_3-alkyl(C_0-C_6)-Cy_4,
- R_{11} represents a linear or branched (C_1-C_6)alkyl group,

it being possible for the aryl, heteroaryl, cycloalkyl and heterocycloalkyl groups so defined and the alkyl, alkenyl, alkynyl, alkoxy groups, to be substituted by from 1 to 4 groups selected from optionally substituted linear or branched (C_1-C_6)alkyl, optionally substituted linear or branched (C_1-C_6)alkoxy, hydroxy, oxo (or *N*-oxide where appropriate), -C(O)-OR', -C(O)-NR'R'', -O-C(O)-NR'R'', -NR'R'', -O-P(O)(OR')$_2$,

-O-P(O)(O^-M^+)$_2$, linear or branched (C_1-C_6)polyhaloalkyl, halogen, or an aldohexose of formula:



in which each R' is independent; it being understood that R' and R'' independently of one another represent a hydrogen atom or an optionally substituted linear or branched (C_1-C_6)alkyl group and M^+ represents a pharmaceutically acceptable monovalent cation.

3. Compounds according to claim 1, wherein n is an integer equal to 1.

4. Compounds according to claim 1, wherein at least one the groups selected from R_2, R_3, R_4 and R_5 does not represent a hydrogen atom.

5. Compounds according to claim 1, wherein R_{12} represents a hydrogen atom.

6. Compounds according to claim 1, wherein R_1 represents a linear or branched (C_1-C_6)alkyl group or a halogen atom.

7. Compounds according to claim 1, wherein R_2 represents a linear or branched (C_1-C_6)alkoxy group, a hydroxy group or a halogen atom.

8. Compounds according to claim 1, wherein X represents a C-R_4 group.

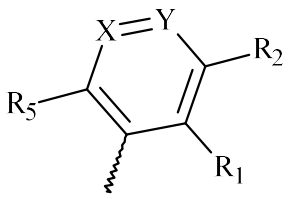
9. Compounds according to claim 1, wherein Y represents a C-R_3 group.

10. Compounds according to claim 1, wherein R_4 and R_5 represent a hydrogen atom.

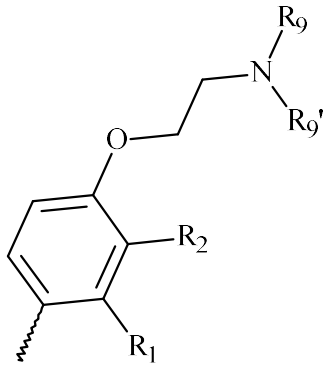
11. Compound according to claim 1, wherein the substituents of the pair (R_1, R_5) are

identical and the substituents of the pair (R_2, R_4) are identical.

12. Compounds according to claim 1, wherein :



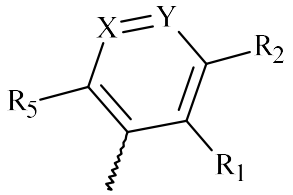
represents



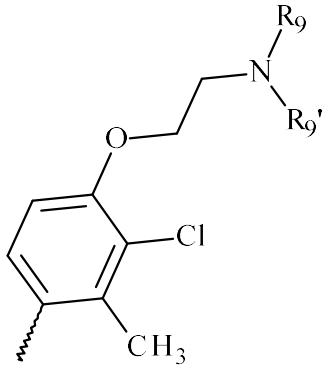
,

wherein R_1, R_2, R_9 and R_9' are as defined in claim 1.

13. Compounds according to claim 1, wherein :



represents

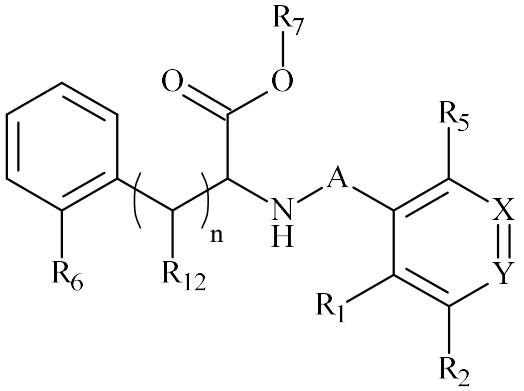


,

wherein R_9 and R_9' are as defined in claim 1.

14. Compounds according to claim 1, wherein E represents a phenyl group, a pyridin-2-yl, a cyclohexyl group, a pyrazol-1-yl group, a cyclopentyl group, an indol-4-yl group, a cyclopropyl group, a pyridin-3-yl group, an indol-3-yl group, a naphth-1-yl group, an imidazol-4-yl group or a pyridin-4-yl group.

15. Compounds according to claim 1, which are compounds of formula (I-b):



(I-b)

wherein R_1, R_2, R_5, R_6, R_7, R_{12}, X, Y, A and n are as defined for formula (I).

16. Compounds according to claim 1, wherein R_6 represents a hydrogen atom; a fluorine atom; a chlorine atom; a bromine atom; a methyl group; a trifluoromethyl group; a hydroxy group; a methoxy group; a linear (C_1-C_6)alkoxy group substituted by halogen atoms, a -C(O)-NR'R'' group or a -NR'R'' group; a cyano; a nitro group; an aminomethyl group; a benzyl group; -O-alkyl(C_1-C_6)-R_{10}; -C(O)-NR_9R_9'.

17. Compounds according to claim 1, wherein R_7 represents a hydrogen atom, an optionally substituted linear or branched (C_1-C_6)alkyl group, a -CHR_aR_b group, or a heteroarylalkyl(C_1-C_6) group.

18. Compounds according to claim 1, wherein R_8 represents a linear or branched (C_2-C_6)alkynyl group, an aryl group or a heteroaryl group.

19. Compounds according to claim 1, wherein R_9 and R_9' independently of one another represent a linear or branched (C_1-C_6)alkyl group, or the substituents of the pair (R_9, R_9') form together with the nitrogen atom carrying them a non-aromatic ring composed of from 5 to 7 ring members, which may contain in addition to the nitrogen atom from 1 to 3 heteroatoms selected from oxygen and nitrogen, it being understood that the nitrogen in question may be substituted by a linear or branched (C_1-C_6)alkyl group.

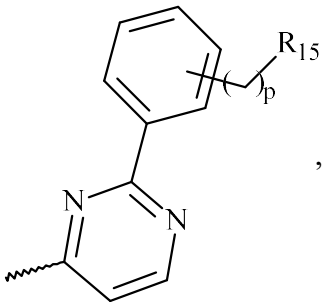
20. Compounds according to claim 1, wherein R_{10} represents -Cy_3 or

-Cy_3-alkyl(C_0-C_6)-Cy_4.

21. Compounds according to claim 20, wherein Cy_3 represents a cycloalkyl group, an aryl group or a heteroaryl group.

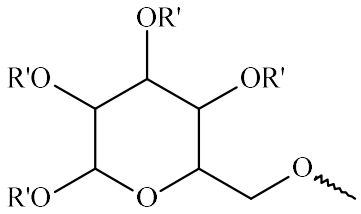
22. Compounds according to claim 20, wherein Cy_4 represents phenyl group or a morpholinyl group.

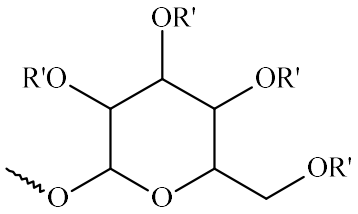
23. Compounds according to claim 20, wherein

R_{10} represents 

,

in which p is an integer equal to 0 or 1 and R_{15} represents a hydrogen atom, a hydroxy group, an optionally substituted linear or branched (C_1-C_6)alkyl group, a linear or branched (C_1-C_6)alkoxy group, a -O-(CHR_{16}-CHR_{17}-O)$_q$-R' group, a -O-P(O)(OR')$_2$ group, a -O-P(O)(O^-M^+)$_2$ group, a -O-C(O)-$NR_{18}R_{19}$ group, a di(C_1-C_6)alkylamino(C_1-C_6)alkoxy group, a halogen atom, or an aldohexose of formula:



or


in which each R' is independent;

it being understood that:

- R' represents a hydrogen atom or a linear or branched (C_1-C_6)alkyl group,
- R_{16} represents a hydrogen atom or a (C_1-C_6)alkoxy(C_1-C_6)alkyl group,

- ♦ R_{17} represents a hydrogen atom or a hydroxy(C_1-C_6)alkyl group,
- ♦ R_{18} represents a hydrogen atom or a (C_1-C_6)alkoxy(C_1-C_6)alkyl group,
- ♦ R_{19} represents a (C_1-C_6)alkoxy(C_1-C_6)alkyl group, a -$(CH_2)_r$-NR_9R_9' group or a -$(CH_2)_r$-O-$(CHR_{16}$-CHR_{17}-$O)_q$-R' group,
- ♦ q is an integer equal to 1, 2 or 3 and r is an integer equal to 0 or 1,
- ♦ M^+ represents a pharmaceutically acceptable monovalent cation.

24. Compounds according to claim 23, wherein the aldexose is D-mannose.

25. Compounds according to claim 1, which are:

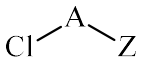
- *N*-[5-{3-chloro-2-methyl-4-[2-(4-methylpiperazin-1-yl)ethoxy]phenyl}-6-(4-fluorophenyl)thieno[2,3-*d*]pyrimidin-4-yl]-2-[(1-methyl-1*H*-pyrazol-5-yl) methoxy]-*D*-phenylalanine,
- *N*-[5-{3-chloro-2-methyl-4-[2-(4-methylpiperazin-1-yl)ethoxy]phenyl}-6-(4-fluorophenyl)thieno[2,3-*d*]pyrimidin-4-yl]-2-[(2-ethoxypyrimidin-4-yl)methoxy]-*D*-phenylalanine,
- *N*-[5-{3-chloro-2-methyl-4-[2-(4-methylpiperazin-1-yl)ethoxy]phenyl}-6-(4-fluorophenyl)thieno[2,3-*d*]pyrimidin-4-yl]-2-{[2-(2-methoxyphenyl)pyrimidin-4-yl]methoxy}-*D*-phenylalanine,
- *N*-[5-{3-chloro-2-methyl-4-[2-(4-methylpiperazin-1-yl)ethoxy]phenyl}-6-(furan-2-yl)thieno[2,3-*d*]pyrimidin-4-yl]-2-methoxy-*D*-phenylalanine,
- *N*-[5-{3-chloro-2-methyl-4-[2-(4-methylpiperazin-1-yl)ethoxy]phenyl}-6-(5-fluorofuran-2-yl)thieno[2,3-*d*]pyrimidin-4-yl]-2-methoxy-*D*-phenylalanine,
- *N*-[5-{3-chloro-2-methyl-4-[2-(4-methylpiperazin-1-yl)ethoxy]phenyl}-6-(5-fluorofuran-2-yl)thieno[2,3-*d*]pyrimidin-4-yl]-2-(2,2,2-trifluoroethoxy)-*D*-phenylalanine,
- *N*-[5-{3-chloro-2-methyl-4-[2-(4-methylpiperazin-1-yl)ethoxy]phenyl}-6-(5-fluorofuran-2-yl)thieno[2,3-*d*]pyrimidin-4-yl]-2-(pyridin-2-ylmethoxy)-*D*-phenylalanine,
- *N*-[5-{3-chloro-2-methyl-4-[2-(4-methylpiperazin-1-yl)ethoxy]phenyl}-6-(5-fluorofuran-2-yl)thieno[2,3-*d*]pyrimidin-4-yl]-2-[(1-methyl-1*H*-pyrazol-5-yl) methoxy]-*D*-phenylalanine,

- *N*-[5-{3-chloro-2-methyl-4-[2-(4-methylpiperazin-1-yl)ethoxy]phenyl}-6-(5-fluorofuran-2-yl)thieno[2,3-*d*]pyrimidin-4-yl]-2-[(1-ethyl-1*H*-pyrazol-5-yl)methoxy]-*D*-phenylalanine,
- *N*-[5-{3-chloro-2-methyl-4-[2-(4-methylpiperazin-1-yl)ethoxy]phenyl}-6-(5-fluorofuran-2-yl)thieno[2,3-*d*]pyrimidin-4-yl]-2-[(2-ethoxypyrimidin-4-yl)methoxy]-*D*-phenylalanine,
- 2-[(1-butyl-1*H*-pyrazol-5-yl)methoxy]-*N*-[5-{3-chloro-2-methyl-4-[2-(4-methylpiperazin-1-yl)ethoxy]phenyl}-6-(5-fluorofuran-2-yl)thieno[2,3-*d*]pyrimidin-4-yl]-*D*-phenylalanine,
- *N*-[5-{3-chloro-2-methyl-4-[2-(4-methylpiperazin-1-yl)ethoxy]phenyl}-6-(5-fluorofuran-2-yl)thieno[2,3-*d*]pyrimidin-4-yl]-2-{[2-(2,2,2-trifluoroethoxy)pyrimidin-4-yl]methoxy}-*D*-phenylalanine,
- *N*-[5-{3-chloro-2-methyl-4-[2-(4-methylpiperazin-1-yl)ethoxy]phenyl}-6-(5-fluorofuran-2-yl)thieno[2,3-*d*]pyrimidin-4-yl]-2-{[2-(2-methoxyphenyl)pyrimidin-4-yl]methoxy}-*D*-phenylalanine,
- *N*-[5-{3-chloro-2-methyl-4-[2-(4-methylpiperazin-1-yl)ethoxy]phenyl}-6-(prop-1-yn-1-yl)thieno[2,3-*d*]pyrimidin-4-yl]-2-methoxy-*D*-phenylalanine,
- 2-[(1-tert-butyl-1*H*-pyrazol-5-yl)methoxy]-*N*-[5-{3-chloro-2-methyl-4-[2-(4-methylpiperazin-1-yl)ethoxy]phenyl}-6-(prop-1-yn-1-yl)thieno[2,3-*d*]pyrimidin-4-yl]-*D*-phenylalanine,
- *N*-[5-{3-chloro-2-methyl-4-[2-(4-methylpiperazin-1-yl)ethoxy]phenyl}-6-(prop-1-yn-1-yl)thieno[2,3-*d*]pyrimidin-4-yl]-2-{[2-(2-methoxyethyl)pyrimidin-4-yl]methoxy}-*D*-phenylalanine,
- *N*-[5-{3-chloro-2-methyl-4-[2-(4-methylpiperazin-1-yl)ethoxy]phenyl}-6-(prop-1-yn-1-yl)thieno[2,3-*d*]pyrimidin-4-yl]-2-{[1-(2,2,2-trifluoroethyl)-1*H*-pyrazol-5-yl]methoxy}-*D*-phenylalanine,
- *N*-[5-{3-chloro-2-methyl-4-[2-(4-methylpiperazin-1-yl)ethoxy]phenyl}-6-(prop-1-yn-1-yl)thieno[2,3-*d*]pyrimidin-4-yl]-2-{[2-(morpholin-4-yl)pyrimidin-4-yl]methoxy}-*D*-phenylalanine,
- *N*-[5-{3-chloro-2-methyl-4-[2-(4-methylpiperazin-1-yl)ethoxy]phenyl}-6-(prop-1-yn-1-yl)thieno[2,3-*d*]pyrimidin-4-yl]-2-{[2-(2,2,2-trifluoroethoxy)pyrimidin-4-yl]methoxy}-*D*-phenylalanine,

- *N*-[5-{3-chloro-2-methyl-4-[2-(4-methylpiperazin-1-yl)ethoxy]phenyl}-6-(prop-1-yn-1-yl)thieno[2,3-*d*]pyrimidin-4-yl]-2-{[2-(2-methoxyphenyl)pyrimidin-4-yl]methoxy}-*D*-phenylalanine,
- *N*-[5-{3-chloro-4-[2-(dimethylamino)ethoxy]-2-methylphenyl}-6-(prop-1-yn-1-yl)thieno[2,3-*d*]pyrimidin-4-yl]-2-{[1-(2,2,2-trifluoroethyl)-1*H*-pyrazol-5-yl]methoxy}-*D*-phenylalanine,
- *N*-[5-{3-chloro-4-[2-(dimethylamino)ethoxy]-2-methylphenyl}-6-(prop-1-yn-1-yl)thieno[2,3-*d*]pyrimidin-4-yl]-2-{[2-(morpholin-4-yl)pyrimidin-4-yl]methoxy}-*D*-phenylalanine,
- *N*-[5-{3-chloro-4-[2-(dimethylamino)ethoxy]-2-methylphenyl}-6-(prop-1-yn-1-yl)thieno[2,3-*d*]pyrimidin-4-yl]-2-{[2-(2,2,2-trifluoroethoxy)pyrimidin-4-yl]methoxy}-*D*-phenylalanine,
- *N*-[5-{3-chloro-4-[2-(dimethylamino)ethoxy]-2-methylphenyl}-6-(prop-1-yn-1-yl)thieno[2,3-*d*]pyrimidin-4-yl]-2-{[2-(2-methoxyphenyl)pyrimidin-4-yl]methoxy}-*D*-phenylalanine,
- *N*-[5-{3-chloro-4-[2-(dimethylamino)ethoxy]-2-methylphenyl}-6-(4-fluoro phenyl)thieno[2,3-*d*]pyrimidin-4-yl]-2-({2-[2-(2-methoxyethoxy)phenyl]pyrimidin-4-yl}methoxy)-*D*-phenylalanine;
- ethyl *N*-[(5S_a)-5-{3-chloro-2-methyl-4-[2-(4-methylpiperazin-1-yl)ethoxy]phenyl}-6-(4-fluorophenyl)thieno[2,3-*d*]pyrimidin-4-yl]-2-{[2-(2-methoxyphenyl)pyrimidin-4-yl]methoxy}-*D*-phenylalaninate;
- ethyl *N*-[(5S_a)-5-{3-chloro-2-methyl-4-[2-(4-methylpiperazin-1-yl)ethoxy]phenyl}-6-(prop-1-yn-1-yl)thieno[2,3-*d*]pyrimidin-4-yl]-2-{[2-(2-methoxyphenyl)pyrimidin-4-yl]methoxy}-*D*-phenylalaninate;
- ethyl *N*-[(5S_a)-5-{3-chloro-4-[2-(dimethylamino)ethoxy]-2-methylphenyl}-6-(prop-1-yn-1-yl)thieno[2,3-*d*]pyrimidin-4-yl]-2-{[2-(2-methoxyphenyl)pyrimidin-4-yl]methoxy}-*D*-phenylalaninate;
- *N*-[5-{3,5-dichloro-2,6-dimethyl-4-[2-(4-methylpiperazin-1-yl)ethoxy]phenyl}-6-(4-fluorophenyl)thieno[2,3-*d*]pyrimidin-4-yl]-2-{[2-(2-methoxyphenyl)pyrimidin-4-yl]methoxy}-D-phenylalanine.

26. Process for the preparation of a compound of formula (I) according to claim 1,

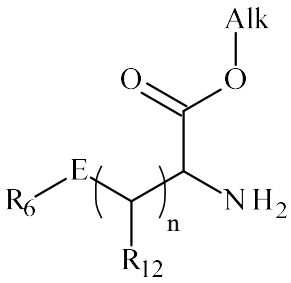
characterised in that there is used as starting material the compound of formula (II-a):



(II-a)

wherein Z represents bromine or iodine and A is as defined for formula (I) in which **1** is linked to the chlorine atom and **2** is linked to the Z group,

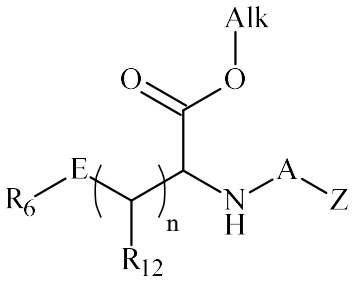
which compound of formula (II-a) is subjected to coupling with a compound of formula (III):



(III)

wherein R_6, R_{12}, E and n are as defined for formula (I), and Alk represents a linear or branched (C_1-C_6)alkyl group,

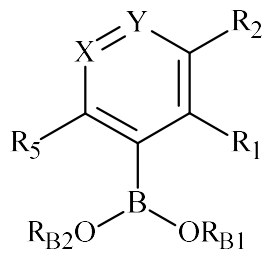
to yield the compound of formula (IV):



(IV)

wherein R_6, R_{12}, A, E and n are as defined for formula (I) and, Z and Alk is as defined before,

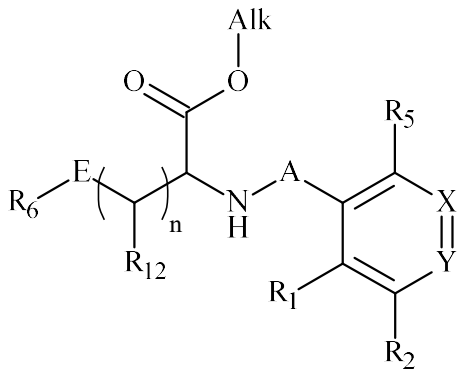
compound of formula (IV) which is further subjected to coupling with compound of formula (V):



(V)

wherein R_1, R_2, R_5, X and Y are as defined for formula (I), and R_{B1} and R_{B2} represent a hydrogen atom, a linear or branched (C_1-C_6) alkyl group, or R_{B1} and R_{B2} form with the oxygen carrying them an optionally methylated ring,

to yield the compound of formula (VI):



(VI)

wherein R_1, R_2, R_5, R_6, R_{12}, X, Y, A, E and n are as defined for formula (I) and Alk is as defined before,

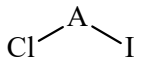
the Alk-O-C(O)- ester function of which compound of formula (VI) is hydrolysed to yield the carboxylic acid, which may optionally be reacted with an alcohol of formula R_7'-OH or a chlorinated compound of formula R_7'-Cl wherein R_7' represents a linear or branched (C_1-C_8)alkyl group, a -CHR_aR_b group, an aryl group, a heteroaryl group, an arylalkyl(C_1-C_6) group, or a heteroarylalkyl(C_1-C_6) group, R_a and R_b are as defined for formula (I),

to yield the compound of formula (I), which may be purified according to a conventional separation technique, which is converted, if desired, into its addition salts with a pharmaceutically acceptable acid or base and which is optionally separated into

its isomers according to a conventional separation technique,

it being understood that at any moment considered appropriate during the course of the process described above, some groups (hydroxy, amino…) of the starting reagents or of the synthesis intermediates can be protected, subsequently deprotected and functionalized, as required by the synthesis.

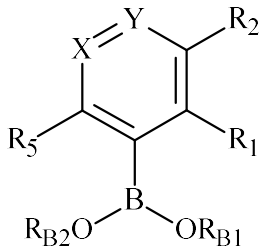
27. Process for the preparation of a compound of formula (I) according to claim 1, characterised in that there is used as starting material the compound of formula (II-b):



(II-b)

wherein A is as defined in formula (I) in which **1** is linked to the chlorine atom and **2** is linked to the iodine atom,

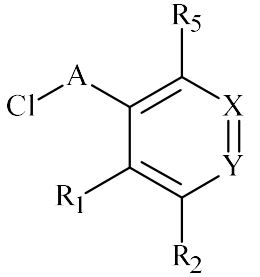
which compound of formula (II-b) is subjected to coupling with a compound of formula (V):



(V)

wherein R_1, R_2, R_5, X and Y are as defined for formula (I), and R_{B1} and R_{B2} represent a hydrogen atom, a linear or branched (C_1-C_6) alkyl group, or R_{B1} and R_{B2} form with the oxygen carrying them an optionally methylated ring,

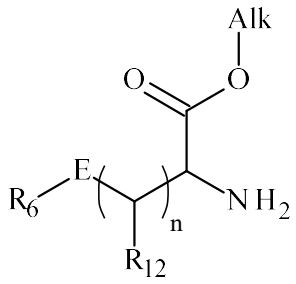
to yield the compound of formula (VII):



(VII)

wherein R_1, R_2, R_5, A, X and Y are as defined in formula (I),

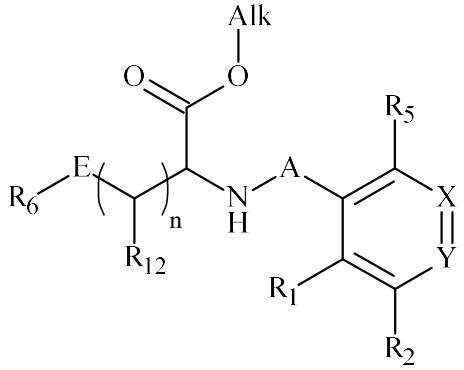
which compound of formula (VII) is further subjected to coupling with a compound of formula (III):



(III)

wherein R_6, R_{12}, E and n are as defined for formula (I), and Alk represents a linear or branched (C_1-C_6)alkyl group,

to yield the compound of formula (VI):



(VI)

wherein R_1, R_2, R_5, R_6, R_{12}, X, Y, A, E and n are as defined for formula (I) and Alk is as defined before,

the Alk-O-C(O)- ester function of which compound of formula (VI) is hydrolysed to yield the carboxylic acid, which may optionally be reacted with an alcohol of formula R_7'-OH or a chlorinated compound of formula R_7'-Cl wherein R_7' represents a linear or branched (C_1-C_8)alkyl group, a -CHR_aR_b group, an aryl group, a heteroaryl group, an arylalkyl(C_1-C_6) group, or a heteroarylalkyl(C_1-C_6) group, R_a and R_b are as defined for formula (I),

to yield the compound of formula (I), which may be purified according to a conventional separation technique, which is converted, if desired, into its addition salts with a pharmaceutically acceptable acid or base and which is optionally separated into its isomers according to a conventional separation technique,

it being understood that at any moment considered appropriate during the course of the process described above, some groups (hydroxy, amino…) of the starting reagents or of the synthesis intermediates can be protected, subsequently deprotected and functionalized, as required by the synthesis.

28. Pharmaceutical composition comprising a compound of formula (I) according to any one of claims 1 to 25 or an addition salt thereof with a pharmaceutically acceptable acid or base in combination with one or more pharmaceutically acceptable excipients.

29. Pharmaceutical composition according to claim 28 for use as pro-apoptotic agents.

30. Pharmaceutical composition according to claim 28 for use in the treatment of cancers and of auto-immune and immune system diseases.

31. Pharmaceutical composition for use according to claim 30 for the treatment of cancers of the bladder, brain, breast and uterus, chronic lymphoid leukaemias, cancer of the colon, œsophagus and liver, lymphoblastic leukaemias, acute myeloid leukaemias, lymphomas, melanomas, malignant haemopathies, myelomas, ovarian cancer, non-small-cell lung cancer, prostate cancer, pancreatic cancer and small-cell lung cancer.

32. Use of a pharmaceutical composition according to claim 28 in the manufacture of medicaments for use as pro-apoptotic agents.

33. Use of a pharmaceutical composition according to claim 28 in the manufacture of medicaments for use in the treatment of cancers and of auto-immune and immune system diseases.

34. Use of a pharmaceutical composition according to claim 28 in the manufacture of

medicaments for use in the treatment of cancers of the bladder, brain, breast and uterus, chronic lymphoid leukaemias, cancer of the colon, œsophagus and liver, lymphoblastic leukaemias, acute myeloid leukaemias, lymphomas, melanomas, malignant haemopathies, myelomas, ovarian cancer, non-small-cell lung cancer, prostate cancer, pancreatic cancer and small-cell lung cancer.

35. Compound of formula (I) according to any one of claims 1 to 25, or an addition salt thereof with a pharmaceutically acceptable acid or base, for use in the treatment of cancers of the bladder, brain, breast and uterus, chronic lymphoid leukaemias, cancer of the colon, œsophagus and liver, lymphoblastic leukaemias, acute myeloid leukaemias, lymphomas, melanomas, malignant haemopathies, myelomas, ovarian cancer, non-small-cell lung cancer, prostate cancer, pancreatic cancer and small-cell lung cancer.

36. Use of a compound of formula (I) according to any one of claims 1 to 25, or an addition salt thereof with a pharmaceutically acceptable acid or base, in the manufacture of medicaments for use in the treatment of cancers of the bladder, brain, breast and uterus, chronic lymphoid leukaemias, cancer of the colon, œsophagus and liver, lymphoblastic leukaemias, acute myeloid leukaemias, lymphomas, melanomas, malignant haemopathies, myelomas, ovarian cancer, non-small-cell lung cancer, prostate cancer, pancreatic cancer and small-cell lung cancer.

37. Combination of a compound of formula (I) according to any one of claims 1 to 25 with an anti-cancer agent selected from genotoxic agents, mitotic poisons, anti-metabolites, proteasome inhibitors, kinase inhibitors and antibodies.

38. Pharmaceutical composition comprising a combination according to claim 37 in combination with one or more pharmaceutically acceptable excipients.

39. Combination according to claim 37 for use in the treatment of cancers.

40. Use of a combination according to claim 37 in the manufacture of medicaments for

use in the treatment of cancers.

41. Compound of formula (I) according to any one of claims 1 to 25 for use in the treatment of cancers requiring radiotherapy.