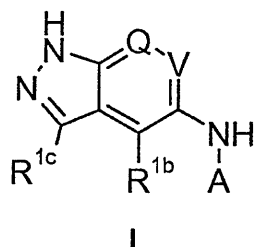


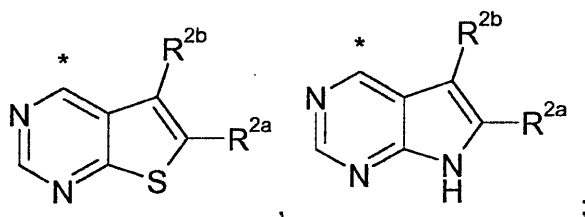
CLAIMS

1. A compound of general formula I:



in which :

A represents a group selected from:



wherein * indicates the point of attachment of said groups to the rest of the molecule;

Q-V represents C(R^{1a})-N, and R^{1a} represents a hydrogen atom;

or

Q-V represents N-C(R^{1a}), and R^{1a} represents a hydrogen atom or a halogen atom or a group selected from: hydroxy-, C₁-C₃-alkyl-, C₁-C₃-alkoxy-, halo-C₁-C₃-alkoxy-;

R^{1b} represents a hydrogen atom;

R^{1c} represents a hydrogen atom;

R^{2a} represents a hydrogen atom or a halogen atom or a group selected from:

C₁-C₆-alkyl-, C₃-C₆-cycloalkyl-, 3- to 10-membered heterocycloalkyl-,

4- to 10-membered heterocycloalkenyl-, aryl-, heteroaryl-, halo-C₁-C₃-alkyl-, cyano-,

-(CH₂)_q-U-(CH₂)_p-R^{3a}; wherein said C₁-C₆-alkyl-, C₃-C₆-cycloalkyl-, 3- to 10-membered heterocycloalkyl-, 4- to 10-membered heterocycloalkenyl-, aryl- or heteroaryl- group is optionally substituted, identically or differently, with 1, 2, 3, 4 or 5 R⁴ groups,

with the proviso that said halo-C₁-C₃-alkyl- group does not contain more than 5 halogen atoms ;

R^{2b} represents a hydrogen atom or a halogen atom or a group selected from: C_1 - C_6 -alkyl-, C_3 - C_6 -cycloalkyl-, 3- to 10-membered heterocycloalkyl-, 4- to 10-membered heterocycloalkenyl-, aryl-, heteroaryl-, halo- C_1 - C_3 -alkyl-, cyano-, $-(CH_2)_q-U-(CH_2)_p-R^{3a}$; wherein said C_1 - C_6 -alkyl-, C_3 - C_6 -cycloalkyl-, 3- to 10-membered heterocycloalkyl-, 4- to 10-membered heterocycloalkenyl-, aryl- or heteroaryl- group is optionally substituted, identically or differently, with 1, 2, 3, 4 or 5 R^4 groups, with the proviso that said halo- C_1 - C_3 -alkyl- group does not contain more than 5 halogen atoms ;

or

R^{2a} and R^{2b} together represent $-(CH_2)_r-T-(CH_2)_s-$;

T represents $-C[R^{6a}][[(C(R^{6b}))(R^{6c}))_t-U-R^{3a}]-$;

U represents a single bond or a bivalent group selected from: $-O-$, $-C(=O)-$, $-N(R^{3b})-$, $-C(=O)-O-$, $-O-C(=O)-$, $-C(=O)-N(R^{3b})-$, $-N(R^{3c})-C(=O)-$, $-N(R^{3c})-C(=O)-N(R^{3b})-$, $-O-C(=O)-N(R^{3b})-$, $-N(R^{3c})-C(=O)-O-$;

R^{3a} represents a hydrogen atom or a group selected from: C_1 - C_6 -alkyl-, C_3 - C_6 -cycloalkyl-, 3- to 10-membered heterocycloalkyl-; wherein said C_1 - C_6 -alkyl-, C_3 - C_6 -cycloalkyl- or 3- to 10-membered heterocycloalkyl- group is optionally substituted, identically or differently, with 1, 2 or 3 R^4 groups;

R^{3b} represents a hydrogen atom or a C_1 - C_3 -alkyl- group; wherein said C_1 - C_3 -alkyl- group is optionally substituted with 1 R^4 group;

R^{3c} represents a hydrogen atom or a C_1 - C_3 -alkyl- group;

or

$N(R^{3b})R^{3a}$ together form a 3- to 10-membered heterocycloalkyl- or 4- to 10-membered heterocycloalkenyl- group; wherein said 3- to 10-membered heterocycloalkyl- or 4- to 10-membered heterocycloalkenyl- group is optionally substituted, identically or differently, with 1, 2 or 3 R^4 groups;

R^4 represents halo-, hydroxy-, oxo- ($O=$), cyano-, nitro-, C_1 - C_3 -alkyl-, halo- C_1 - C_3 -alkyl-, C_1 - C_3 -alkoxy-, halo- C_1 - C_3 -alkoxy-, hydroxy- C_1 - C_3 -alkyl-, C_1 - C_3 -alkoxy- C_1 - C_3 -alkyl-, halo- C_1 - C_3 -alkoxy- C_1 - C_3 -alkyl-, R^{5c} -O-, $-C(=O)-R^{5c}$, $-C(=O)-O-R^{5c}$, $-O-C(=O)-R^{5c}$, $-N(R^{5b})-C(=O)-R^{5c}$, $-N(R^{5c})-C(=O)-N(R^{5a})R^{5b}$, $-N(R^{5a})R^{5b}$, $-C(=O)-N(R^{5a})R^{5b}$, R^{5c} -S-, R^{5c} -S($=O$)-, R^{5c} -S($=O$) $_2$ -, $-N(R^{5c})-S(=O)-R^{5b}$, $-S(=O)-N(R^{5a})R^{5b}$, $-N(R^{5c})-S(=O)_2-R^{5b}$ or $-S(=O)_2-N(R^{5a})R^{5b}$;

R^{5a} represents a hydrogen atom or a C_1 - C_3 -alkyl- group;

R^{5b} represents a hydrogen atom or a C_1 - C_3 -alkyl- group;

R^{5c} represents a hydrogen atom or a C_1 - C_3 -alkyl- group;

or

$N(R^{5a})R^{5b}$

together form a 3- to 7-membered heterocycloalkyl- group;

R^{6a} represents a hydrogen atom or a group selected from: C_1 - C_6 -alkyl-, C_2 - C_6 -alkenyl-, C_2 - C_6 -alkynyl-; wherein said C_1 - C_6 -alkyl-, C_2 - C_6 -alkenyl- or C_2 - C_6 -alkynyl- group is optionally substituted, identically or differently, with 1, 2 or 3 R^4 groups;

R^{6b} represents a hydrogen atom or a C_1 - C_3 -alkyl- group;

R^{6c} represents a hydrogen atom or a C_1 - C_3 -alkyl- group;

p represents an integer of 0, 1, 2 or 3;

q represents an integer of 0, 1, 2 or 3;

r represents an integer of 1, 2 or 3;

s represents an integer of 1, 2 or 3; and

t represents an integer of 0 or 1;

or a tautomer, an N-oxide, a hydrate, a solvate, or a salt thereof, or a mixture of same.

2. A compound according to claim 1, wherein :

R^{2a} represents a hydrogen atom or a halogen atom or a group selected from: C_1 - C_6 -alkyl-, $-(CH_2)_q-U-(CH_2)_p-R^{3a}$; wherein said C_1 - C_6 -alkyl- group is optionally substituted, identically or differently, with 1, 2 or 3 R^4 groups ;

R^{2b} represents a hydrogen atom or a halogen atom or a group selected from: C_1 - C_6 -alkyl-,

halo-C₁-C₃-alkyl-, -(CH₂)_q-U-(CH₂)_p-R^{3a};

wherein said C₁-C₆-alkyl- group is optionally substituted, identically or differently, with 1, 2 or 3 R⁴ groups,

with the proviso that said halo-C₁-C₃-alkyl- group does not contain more than 5 halogen atoms;

or

R^{2a} and R^{2b} together represent -(CH₂)₂-T-CH₂-;

or

R^{2a} and R^{2b} together represent -CH₂-T-(CH₂)₂-;

or a tautomer, an N-oxide, a hydrate, a solvate, or a salt thereof, or a mixture of same.

3. A compound according to any one of claims 1 to 2, wherein :

T represents -C(H)(U-R^{3a})-;

U represents a single bond or a bivalent group selected from: -C(=O)-, -N(R^{3b})-, -C(=O)-O-, -O-C(=O)-, -C(=O)-N(R^{3b})-, -N(R^{3c})-C(=O)-;

or a tautomer, an N-oxide, a hydrate, a solvate, or a salt thereof, or a mixture of same.

4. A compound according to any one of claims 1 to 3, wherein :

R^{3a} represents a hydrogen atom or a group selected from: C₁-C₆-alkyl-, C₃-C₆-cycloalkyl-, 3- to 10-membered heterocycloalkyl-; wherein said C₁-C₆-alkyl-, C₃-C₆-cycloalkyl-, 3- to 10-membered heterocycloalkyl- group is optionally substituted, identically or differently, with 1, 2 or 3 R⁴ groups;

R^{3b} represents a hydrogen atom or a C₁-C₆-alkyl- group;

or

N(R^{3b})R^{3a} together

form a 3- to 10-membered heterocycloalkyl- group, wherein said 3- to 10-membered heterocycloalkyl- group is optionally substituted, identically or differently, with 1 R⁴ group;

and

R^{3c} represents a hydrogen atom or a C₁-C₆-alkyl-;

or a tautomer, an N-oxide, a hydrate, a solvate, or a salt thereof, or a mixture of same.

5. A compound according to any one of claims 1 to 4, wherein :

R⁴ represents halo-, hydroxy-, cyano-, nitro-, C₁-C₃-alkyl-, halo-C₁-C₃-alkyl-, C₁-C₃-alkoxy-, halo-C₁-C₃-alkoxy-, hydroxy-C₁-C₃-alkyl-, C₁-C₃-alkoxy-C₁-C₃-alkyl-,

$R^{5c}-O-$, $-C(=O)-R^{5c}$, $-C(=O)-O-R^{5c}$, $-O-C(=O)-R^{5c}$, $-N(R^{5a})R^{5b}$, $-C(=O)-N(R^{5a})R^{5b}$,
 $R^{5c}-S(=O)_2-$, $-N(R^{5c})-S(=O)_2R^{5b}$ or $-S(=O)_2-N(R^{5a})R^{5b}$;
or a tautomer, an N-oxide, a hydrate, a solvate, or a salt thereof, or a mixture of same.

6. A compound according to any one of claims 1 to 5, wherein :

R^{5a} represents a hydrogen atom or a C_1 - C_6 -alkyl- or benzyl- group;

R^{5b} represents a hydrogen atom or a C_1 - C_6 -alkyl- group;

R^{5c} represents a hydrogen atom or a C_1 - C_6 -alkyl- group;

or a tautomer, an N-oxide, a hydrate, a solvate, or a salt thereof, or a mixture of same.

7. A compound according to any one of claims 1 to 6, wherein :

p represents an integer of 0 or 1;

q represents an integer of 0 or 1;

r represents an integer of 1 or 2;

s represents an integer of 1 or 2; and

t represents an integer of 0 or 1;

or a tautomer, an N-oxide, a hydrate, a solvate, or a salt thereof, or a mixture of same.

8. A compound according to claim 1, which is selected from the group consisting of :

N-(7H-pyrrolo[2,3-d]pyrimidin-4-yl)-1H-pyrazolo[3,4-b]pyridin-5-amine,

N-(7H-pyrrolo[2,3-d]pyrimidin-4-yl)-1H-pyrazolo[3,4-c]pyridin-5-amine,

N-(5-methyl-7H-pyrrolo[2,3-d]pyrimidin-4-yl)-1H-pyrazolo[3,4-b]pyridin-5-amine,

N-(5-methyl-7H-pyrrolo[2,3-d]pyrimidin-4-yl)-1H-pyrazolo[3,4-c]pyridin-5-amine,

N-(5-ethyl-7H-pyrrolo[2,3-d]pyrimidin-4-yl)-1H-pyrazolo[3,4-b]pyridin-5-amine,

N-(5-ethyl-7H-pyrrolo[2,3-d]pyrimidin-4-yl)-1H-pyrazolo[3,4-c]pyridin-5-amine,

N-(6-ethyl-5-methyl-7H-pyrrolo[2,3-d]pyrimidin-4-yl)-1H-pyrazolo[3,4-b]pyridin-5-amine,

N-(6-ethyl-5-methyl-7H-pyrrolo[2,3-d]pyrimidin-4-yl)-1H-pyrazolo[3,4-c]pyridin-5-amine,

ethyl 4-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)-7H-pyrrolo[2,3-d]pyrimidine-6-carboxylate,

ethyl 4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-7H-pyrrolo[2,3-d]pyrimidine-6-carboxylate,

4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-7H-pyrrolo[2,3-d]pyrimidine-6-carboxylic acid,

ethyl 5-bromo-4-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)-7H-pyrrolo[2,3-d]pyrimidine-6-carboxylate,

ethyl 5-bromo-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-7H-pyrrolo[2,3-d]pyrimidine-6-carboxylate,

5-bromo-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-7H-pyrrolo[2,3-d]pyrimidine-6-carboxylic acid,

N-[5-(trifluoromethyl)-7H-pyrrolo[2,3-d]pyrimidin-4-yl]-1H-pyrazolo[3,4-b]pyridin-5-amine,

N-[5-(trifluoromethyl)-7H-pyrrolo[2,3-d]pyrimidin-4-yl]-1H-pyrazolo[3,4-c]pyridin-5-amine,

[4-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)-7H-pyrrolo[2,3-d]pyrimidin-5-yl]methanol,

N,N-dimethyl-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-7H-pyrrolo[2,3-d]pyrimidine-6-carboxamide,

[4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-7H-pyrrolo[2,3-d]pyrimidin-6-yl](pyrrolidin-1-yl)methanone,

piperidin-1-yl[4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-7H-pyrrolo[2,3-d]pyrimidin-6-yl]methanone,

morpholin-4-yl[4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-7H-pyrrolo[2,3-d]pyrimidin-6-yl]methanone,

N-[2-(dimethylamino)ethyl]-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-7H-pyrrolo[2,3-d]pyrimidine-6-carboxamide,

(RS)-N-(propan-2-yl)-4-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidine-7-carboxamide,

(RS)-N-(propan-2-yl)-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidine-7-carboxamide,

(RS)-(4-methylpiperazin-1-yl)[4-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl]methanone,

(RS)-(4-methylpiperazin-1-yl)[4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl]methanone,

(RS)-N,N-dimethyl-4-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidine-7-carboxamide,

(RS)-N,N-dimethyl-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidine-7-carboxamide,

(RS)-N-(propan-2-yl)-4-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)-6,7,8,9-tetrahydro-5H-pyrimido[4,5-b]indole-6-carboxamide,

(RS)-N,N-dimethyl-4-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)-6,7,8,9-tetrahydro-5H-pyrimido[4,5-b]indole-6-carboxamide,

(RS)-N,N-dimethyl-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-6,7,8,9-tetrahydro-5H-pyrimido[4,5-b]indole-6-carboxamide,

(RS)-(4-methylpiperazin-1-yl)[4-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)-6,7,8,9-tetrahydro-5H-pyrimido[4,5-b]indol-6-yl]methanone,

(RS)-(4-methylpiperazin-1-yl)[4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-6,7,8,9-tetrahydro-5H-pyrimido[4,5-b]indol-6-yl]methanone,

(7S)-4-[(6-methoxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-N-methyl-N-(3,3,3-trifluoropropyl)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidine-7-carboxamide,

N-[3-(dimethylamino)-3-oxopropyl]-N-methyl-7-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)[1,3]thiazolo[5,4-d]pyrimidine-2-carboxamide,

N-[3-(dimethylamino)-3-oxopropyl]-7-[(6-methoxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-N-methyl[1,3]thiazolo[5,4-d]pyrimidine-2-carboxamide,

(7S)-4-[(6-hydroxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-N-methyl-N-(3,3,3-trifluoropropyl)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidine-7-carboxamide,

[3-(dimethylamino)azetidin-1-yl][(7S)-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl]methanone,

[3-(dimethylamino)azetidin-1-yl][(7S)-4-[(6-methoxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl]methanone,

[3-(dimethylamino)azetidin-1-yl][(7S)-4-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl]methanone,

{(7S)-4-[(6-methoxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl}(2-oxa-6-azaspiro[3.3]hept-6-yl)methanone,

{(7S)-4-[(6-methoxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl}(morpholin-4-yl)methanone,

azetidin-1-yl[(7S)-4-[(6-methoxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl]methanone,

[(2R,6S)-2,6-dimethylmorpholin-4-yl][(7S)-4-[(6-methoxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl]methanone,

(7S)-4-[(6-methoxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-N-methyl-N-(propan-2-yl)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidine-7-carboxamide,

(7S)-4-[(6-methoxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-N-methyl-N-propyl-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidine-7-carboxamide,

(7S)-N-ethyl-4-[(6-methoxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-N-methyl-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidine-7-carboxamide,

{(7S)-4-[(6-methoxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl}[(1S,4S)-2-oxa-5-azabicyclo[2.2.1]hept-5-yl]methanone,

{(7S)-4-[(6-methoxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl}[(1R,4R)-2-oxa-5-azabicyclo[2.2.1]hept-5-yl]methanone,

{(7S)-4-[(6-methoxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl}(4-methylpiperazin-1-yl)methanone,

[4-(dimethylamino)piperidin-1-yl]{(7S)-4-[(6-methoxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl}methanone,

{(7S)-4-[(6-methoxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl}[(3R)-3-methylmorpholin-4-yl]methanone,

{(7S)-4-[(6-methoxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl}[(3S)-3-methylmorpholin-4-yl]methanone,

(7S)-N-ethyl-N-(propan-2-yl)-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidine-7-carboxamide,

(7S)-N-(2-hydroxy-2-methylpropyl)-N-methyl-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidine-7-carboxamide,

(7S)-N-methyl-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-N-(3,3,3-trifluoropropyl)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidine-7-carboxamide,

(7S)-N-(2-methoxyethyl)-4-[(6-methoxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-N-propyl-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidine-7-carboxamide,

(7S)-4-[(6-hydroxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-N-(2-methoxyethyl)-N-propyl-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidine-7-carboxamide,

(7S)-N-butyl-4-[(6-methoxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-N-methyl-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidine-7-carboxamide,

(7S)-N-butyl-4-[(6-hydroxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-N-methyl-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidine-7-carboxamide,

(7S)-4-[(6-methoxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-N,N-dimethyl-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidine-7-carboxamide,

(7S)-4-[(6-hydroxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-N,N-dimethyl-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidine-7-carboxamide,

azetidin-1-yl[(7S)-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl]methanone,

(7S)-N,N-bis(2-methoxyethyl)-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidine-7-carboxamide,

(7S)-N-(2-methoxyethyl)-N-methyl-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidine-7-carboxamide,

(7S)-N-ethyl-N-methyl-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidine-7-carboxamide,

(7S)-N,N-dimethyl-4-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidine-7-carboxamide,

(7S)-N,N-dimethyl-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidine-7-carboxamide,

[5-bromo-4-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)-7H-pyrrolo[2,3-d]pyrimidin-6-yl](piperidin-1-yl)methanone,

5-bromo-N-[2-(dimethylamino)ethyl]-4-[(6-methoxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-N-methyl-7H-pyrrolo[2,3-d]pyrimidine-6-carboxamide,

5-bromo-N-[2-(dimethylamino)ethyl]-4-[(6-hydroxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-N-methyl-7H-pyrrolo[2,3-d]pyrimidine-6-carboxamide,

{5-bromo-4-[(6-methoxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-7H-pyrrolo[2,3-d]pyrimidin-6-yl}[4-(dimethylamino)piperidin-1-yl]methanone,

{5-Bromo-4-[(6-hydroxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-7H-pyrrolo[2,3-d]pyrimidin-6-yl}[4-(dimethylamino)piperidin-1-yl]methanone,

{5-bromo-4-[(6-methoxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-7H-pyrrolo[2,3-d]pyrimidin-6-yl}[(3R)-3-methylmorpholin-4-yl]methanone,

{5-bromo-4-[(6-methoxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-7H-pyrrolo[2,3-d]pyrimidin-6-yl}(morpholin-4-yl)methanone,

{5-bromo-4-[(6-hydroxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-7H-pyrrolo[2,3-d]pyrimidin-6-yl}(morpholin-4-yl)methanone,

[5-bromo-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-7H-pyrrolo[2,3-d]pyrimidin-6-yl][4-(dimethylamino)piperidin-1-yl]methanone,

[5-bromo-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-7H-pyrrolo[2,3-d]pyrimidin-6-yl][(3R)-3-methylmorpholin-4-yl]methanone,

[5-bromo-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-7H-pyrrolo[2,3-d]pyrimidin-6-yl](morpholin-4-yl)methanone,

[5-bromo-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-7H-pyrrolo[2,3-d]pyrimidin-6-yl](piperidin-1-yl)methanone,

[5-bromo-4-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)-7H-pyrrolo[2,3-d]pyrimidin-6-yl][(3R)-3-methylmorpholin-4-yl]methanone,

[5-bromo-4-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)-7H-pyrrolo[2,3-d]pyrimidin-6-yl](morpholin-4-yl)methanone,

[5-bromo-4-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)-7H-pyrrolo[2,3-d]pyrimidin-6-yl][(3S)-3-methylmorpholin-4-yl]methanone,

N-[2-(dimethylamino)-2-oxoethyl]-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-7H-pyrrolo[2,3-d]pyrimidine-6-carboxamide,

N-[2-(dimethylamino)ethyl]-N-methyl-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-7H-pyrrolo[2,3-d]pyrimidine-6-carboxamide,

N-{2-[benzyl(methyl)amino]ethyl}-N-methyl-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-7H-pyrrolo[2,3-d]pyrimidine-6-carboxamide,

2-(2-phenylethyl)-N-(1H-pyrazolo[3,4-c]pyridin-5-yl)[1,3]thiazolo[5,4-d]pyrimidin-7-amine,

(7S)-N-(propan-2-yl)-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidine-7-carboxamide,

(7S)-N-methyl-N-propyl-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidine-7-carboxamide,

1-{[(7S)-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl]carbonyl}azetidine-3-carbonitrile,

2-oxa-6-azaspiro[3.3]hept-6-yl[(7S)-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl]methanone,

[(3R)-3-(dimethylamino)pyrrolidin-1-yl][(7S)-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl]methanone,

[(3S)-3-(dimethylamino)pyrrolidin-1-yl][(7S)-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl]methanone,
 morpholin-4-yl[(7S)-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl]methanone,
 [(3S)-3-methylmorpholin-4-yl][(7S)-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl]methanone,
 [(3R)-3-methylmorpholin-4-yl][(7S)-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl]methanone,
 [(2R,6S)-2,6-dimethylmorpholin-4-yl][(7S)-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl]methanone,
 (4-methylpiperazin-1-yl)[(7S)-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl]methanone,
 [4-(dimethylamino)piperidin-1-yl][(7S)-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl]methanone,
 (7S)-N-ethyl-N-methyl-4-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidine-7-carboxamide,
 (7S)-N-methyl-N-propyl-4-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidine-7-carboxamide,
 (7S)-N-methyl-4-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)-N-(3,3,3-trifluoropropyl)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidine-7-carboxamide,
 (7S)-N-methyl-N-(propan-2-yl)-4-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidine-7-carboxamide,
 (7S)-N-(2-methoxyethyl)-N-methyl-4-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidine-7-carboxamide,
 azetidin-1-yl[(7S)-4-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl]methanone,
 2-oxa-6-azaspiro[3.3]hept-6-yl[(7S)-4-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl]methanone,
 1-[(7S)-4-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl]carbonyl}azetidine-3-carbonitrile,
 [(3S)-3-(dimethylamino)pyrrolidin-1-yl][(7S)-4-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl]methanone,

[(3R)-3-(dimethylamino)pyrrolidin-1-yl][(7S)-4-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl]methanone,
 morpholin-4-yl[(7S)-4-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl]methanone,
 [(3R)-3-methylmorpholin-4-yl][(7S)-4-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl]methanone,
 [(3S)-3-methylmorpholin-4-yl][(7S)-4-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl]methanone,
 [(2R,6S)-2,6-dimethylmorpholin-4-yl][(7S)-4-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl]methanone,
 (4-methylpiperazin-1-yl)[(7S)-4-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl]methanone,
 [4-(dimethylamino)piperidin-1-yl][(7S)-4-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl]methanone,
 1-[(7S)-4-[(6-methoxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl]carbonylazetidine-3-carbonitrile,
 {(7S)-4-[(6-methoxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl}(2-oxa-6-azaspiro[3.3]hept-6-yl)methanone,
 [(3R)-3-(dimethylamino)pyrrolidin-1-yl][(7S)-4-[(6-methoxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl]methanone,
 [(3S)-3-(dimethylamino)pyrrolidin-1-yl][(7S)-4-[(6-methoxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl]methanone,
 (7S)-N-ethyl-4-[(6-hydroxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-N-methyl-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidine-7-carboxamide,
 (7S)-4-[(6-hydroxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-N-methyl-N-propyl-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidine-7-carboxamide,
 (7S)-4-[(6-hydroxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-N-methyl-N-(propan-2-yl)-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidine-7-carboxamide,
 {(7S)-4-[(6-hydroxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl}[(1S,4S)-2-oxa-5-azabicyclo[2.2.1]hept-5-yl]methanone,
 {(7S)-4-[(6-hydroxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl}(4-methylpiperazin-1-yl)methanone,

[4-(dimethylamino)piperidin-1-yl]{(7S)-4-[(6-hydroxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-5,6,7,8-tetrahydro[1]benzothieno[2,3-d]pyrimidin-7-yl}methanone,

5-bromo-N-[3-(dimethylamino)propyl]-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-7H-pyrrolo[2,3-d]pyrimidine-6-carboxamide,

5-bromo-N-[3-(dimethylamino)propyl]-N-methyl-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-7H-pyrrolo[2,3-d]pyrimidine-6-carboxamide,

5-bromo-N-[2-(dimethylamino)ethyl]-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-7H-pyrrolo[2,3-d]pyrimidine-6-carboxamide,

[5-bromo-4-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)-7H-pyrrolo[2,3-d]pyrimidin-6-yl][(3S)-3-methylmorpholin-4-yl]methanone,

N-[2-(dimethylamino)-2-oxoethyl]-N-methyl-7-(1H-pyrazolo[3,4-c]pyridin-5-ylamino)[1,3]thiazolo[5,4-d]pyrimidine-2-carboxamide,

N,N-dimethyl-7-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)[1,3]thiazolo[5,4-d]pyrimidine-2-carboxamide,

5-bromo-N-[2-(dimethylamino)ethyl]-4-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)-7H-pyrrolo[2,3-d]pyrimidine-6-carboxamide,

5-bromo-N-[3-(dimethylamino)propyl]-4-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)-7H-pyrrolo[2,3-d]pyrimidine-6-carboxamide,

piperidin-1-yl[7-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)[1,3]thiazolo[5,4-d]pyrimidin-2-yl]methanone,

[5-bromo-4-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)-7H-pyrrolo[2,3-d]pyrimidin-6-yl][4-(dimethylamino)piperidin-1-yl]methanone,

N-[2-(dimethylamino)-2-oxoethyl]-N-methyl-7-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)[1,3]thiazolo[5,4-d]pyrimidine-2-carboxamide,

N-[3-(dimethylamino)-3-oxopropyl]-N-methyl-7-(1H-pyrazolo[3,4-b]pyridin-5-ylamino)[1,3]thiazolo[5,4-d]pyrimidine-2-carboxamide,

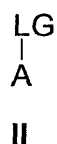
N-[2-(dimethylamino)-2-oxoethyl]-7-[(6-methoxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-N-methyl[1,3]thiazolo[5,4-d]pyrimidine-2-carboxamide,

5-bromo-N-[3-(dimethylamino)propyl]-4-[(6-methoxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-N-methyl-7H-pyrrolo[2,3-d]pyrimidine-6-carboxamide,

5-bromo-N-[3-(dimethylamino)propyl]-4-[(6-hydroxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-N-methyl-7H-pyrrolo[2,3-d]pyrimidine-6-carboxamide,

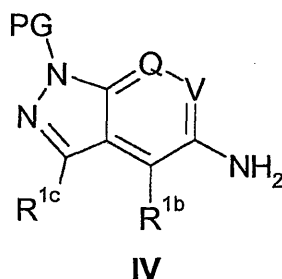
{7-[(6-methoxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino][1,3]thiazolo[5,4-d]pyrimidin-2-yl}(piperidin-1-yl)methanone,
 {5-bromo-4-[(6-hydroxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-7H-pyrrolo[2,3-d]pyrimidin-6-yl}(piperidin-1-yl)methanone,
 {5-bromo-4-[(6-methoxy-1H-pyrazolo[3,4-b]pyridin-5-yl)amino]-7H-pyrrolo[2,3-d]pyrimidin-6-yl}[(3S)-3-methylmorpholin-4-yl]methanone;
 or a tautomer, an N-oxide, a hydrate, a solvate, or a salt thereof, or a mixture of same.

9. A method of preparing a compound of general formula I according to any one of claims 1 to 8, in which method an intermediate compound of general formula II :



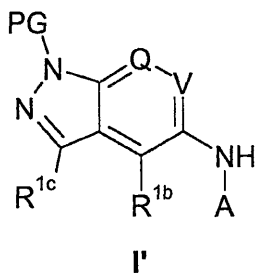
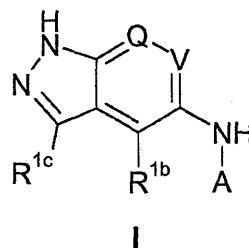
in which A is as defined in any one of claims 1 to 8 and LG represents a leaving group;

is allowed to react with an intermediate compound of general formula IV:



in which R^{1b}, R^{1c}, and Q-V are as defined in any one of claims 1 to 10 and PG represents a protective group or a hydrogen atom;

thus providing a compound of general formula I' or I :



in which R^{1b}, R^{1c}, Q-V, and A are as defined in any one of claims 1 to 10, and PG represents a protective group or a hydrogen atom.

10. A compound of general formula I, or a stereoisomer, a tautomer, an N-oxide, a hydrate, a solvate, or a pharmaceutically acceptable salt thereof, or a mixture of same, according to any one of claims 1 to 8, for use in the treatment or prophylaxis of a disease.

11. A pharmaceutical composition comprising a compound of general formula I, or a stereoisomer, a tautomer, an N-oxide, a hydrate, a solvate, or a pharmaceutically acceptable salt thereof, or a mixture of same, according to any one of claims 1 to 10, and a pharmaceutically acceptable diluent or carrier.

12. A pharmaceutical combination comprising :

- one or more first active ingredients selected from a compound of general formula I according to any of claims 1 to 8, and
- one or more second active ingredients selected from chemotherapeutic anti-cancer agents.

13. Use of a compound of general formula I, or a stereoisomer, a tautomer, an N-oxide, a hydrate, a solvate, or a pharmaceutically acceptable salt thereof, or a mixture of same, according to any one of claims 1 to 8, for the preparation of a medicament for the prophylaxis or treatment of a disease.

14. Use according to claims 10, or 13, wherein said disease is a disease of uncontrolled cell growth, proliferation and/or survival, an inappropriate cellular immune response, or an inappropriate cellular inflammatory response, particularly in which the uncontrolled cell growth, proliferation and/or survival, inappropriate cellular immune response, or inappropriate cellular inflammatory response is mediated by the MKNK1 pathway, more particularly in which the disease of uncontrolled cell growth, proliferation and/or survival, inappropriate cellular immune response, or inappropriate cellular inflammatory response is a haematological tumour, a solid tumour and/or metastases thereof, e.g. leukaemias and myelodysplastic syndrome, malignant lymphomas, head and neck tumours including brain tumours and brain metastases, tumours of the thorax including non-small cell and small cell lung tumours, gastrointestinal tumours, endocrine tumours, mammary and other

gynaecological tumours, urological tumours including renal, bladder and prostate tumours, skin tumours, and sarcomas, and/or metastases thereof.