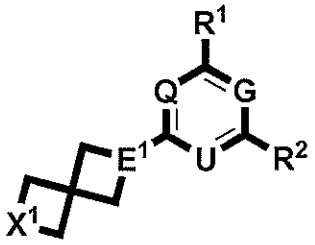
CLAIMS

1. A compound of formula (I),



(I),

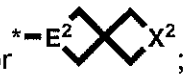
wherein

G is CH or N, Q is CH or N, and U is CH or N, with the proviso that at least two of G, Q and U are N, or one of G and U together with R^2 forms an anullated pyridine ring further substituted by R^3, and the other one of G and U is N and Q is N;

E^1 and E^2 are, independently of each other, CR^4, N, N^+R^4, or N→O;

X^1 and X^2 are, independently of each other, CHR^4, CH_2CH_2, NR^4, NR^4→O, or O;

R^1 is hydrogen, halogen, cyano, nitro, C_1-C_6-alkyl, halo-C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl, optionally substituted C_3-C_{12}-carbocyclyl, optionally substituted C_6-C_{20}-aryl, optionally substituted C_2-C_{19}-heterocyclyl, optionally substituted C_1-C_{19}-heteroaryl, C_1-C_6-alkylsulfonyl, halo-C_1-C_6-alkylsulfonyl, optionally substituted C_6-C_{20}-arylsulfonyl, optionally substituted aminosulfonyl, a reactive group, a linker carrying a reactive group and/or a tag,

or ;

R^2 is hydrogen, halogen, cyano, nitro, C_1-C_6-alkyl, halo-C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl, optionally substituted C_3-C_{12}-carbocyclyl, optionally substituted C_6-C_{20}-aryl, optionally substituted C_2-C_{19}-heterocyclyl, optionally substituted C_1-C_{19}-heteroaryl, C_1-C_6-alkylsulfonyl, halo-C_1-C_6-alkylsulfonyl, optionally substituted C_6-C_{20}-arylsulfonyl, optionally substituted aminosulfonyl, a reactive group, or a linker carrying a reactive group and/or a tag;

R^3 is optionally substituted amino, optionally substituted C_6-C_{20}-aryl, or optionally substituted C_1-C_{19}-heteroaryl;

R^4 is hydrogen, C_1-C_6-alkyl, C_1-C_6-acyl, C_1-C_6-acylamino-C_1-C_6-alkyl, a reactive group or a linker carrying a reactive group and/or a tag;

and tautomers, prodrugs, metabolites, solvates and pharmaceutically acceptable salts thereof.

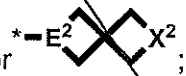
2. The compound of formula (I) according to claim 1, wherein

G is CH or N, Q is CH or N, and U is CH or N, with the proviso that at least two of

G, Q and U are N;

E^1 and E^2 are, independently of each other, CR^4, N, N^+R^4, or N→O;

X^1 and X^2 are, independently of each other, CHR^4, CH_2CH_2, NR^4, NR^4→O, or O;

R^1 is optionally substituted C_3-C_{12}-carbocyclyl, optionally substituted C_6-C_{20}-aryl, optionally substituted C_2-C_{19}-heterocyclyl, optionally substituted C_1-C_{19}-heteroaryl, or ;

R^2 is optionally substituted C_6-C_{20} aryl or optionally substituted C_1-C_{20} heteroaryl; and

R^4 is hydrogen, methyl, a reactive group selected from acryloyl, methacryloyl, 4-dimethylamino-but-2-enoyl, 4-(dimethylamino)-2,3-epoxy-butanoyl, 3-amino-1-propene-1-sulfonyl, 3-(dimethylamino)-1-propene-1-sulfonyl, fluoro-, chloro-, bromo- or iodoacetyl, chloro- or bromomethanesulfonyl, 2,2-dichloroacetyl, 2,2,2-trichloroacetyl, methylsulfonyl-oxyacetyl, 2-chloropropionyl, 2,3-epoxypropionyl, (phenylthio)thiocarbonyl, 2-nitro-phenoxycarbonyl, 4-fluorophenoxycarbonyl, and 4-(3-(trifluoromethyl)-3H-diazirin-3-yl)-benzamide, a chain of 1 to 20 optionally substituted methylene groups either directly linked to X^1, X^2, E^1 or E^2, or linked to the reactive group, or such chain wherein one or more methylene groups are replaced by oxygen, a carbonyloxy group, optionally substituted nitrogen, a carboxamide group, a urea group, sulphur, a disulfide group, or combinations thereof, carrying one or two tags selected from biotin, avidin, streptavidin, a fluorescent marker, a naturally occurring amino acid, and a solid phase, and optionally a reactive group selected from acryloyl, methacryloyl, 4-amino-but-2-enoyl, 4-dimethyl-amino-but-2-enoyl, 4-(dimethylamino)-2,3-epoxy-butanoyl, 3-amino-1-propene-1-sulfonyl, 3-(dimethylamino)-1-propene-1-sulfonyl, fluoro-, chloro-, bromo- or iodoacetyl, chloro- or bromomethanesulfonyl, 2,2-dichloroacetyl, 2,2,2-trichloroacetyl, methylsulfonyloxyacetyl, 2-chloropropionyl, 2,3-epoxypropionyl, (phenylthio)thiocarbonyl, 2-nitrophenoxycarbonyl, and 4-fluorophenoxycarbonyl;

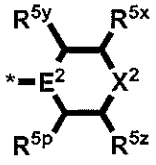
and tautomers, solvates and pharmaceutically acceptable salts thereof.

3. The compound of formula (I) according to claim 1, wherein

G is CH or N, Q is CH or N, and U is CH or N, with the proviso that at least two of G, Q and U are N;

E^1 and E^2 are, independently of each other, N or N^+R^4;

X^1 and X^2 are, independently of each other, NR^4 or O;

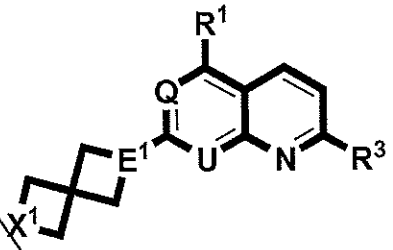
R^1 is optionally substituted  or , wherein R^{5x}, R^{5y}, R^{5z} and R^{5p} are, independently of each other, hydrogen, halogen, cyano, optionally substituted C_1-C_6 alkyl, C_2-C_6 alkenyl, or C_2-C_6 alkynyl, or one or two of R^{5x}, R^{5y}, R^{5z} and R^{5p} are two geminal substituents methyl and the other ones are hydrogen, or R^{5x} and R^{5y}, or R^{5z} and R^{5p} form together an anullated five- or six-membered carbocyclyl, heterocyclyl, aryl or heteroaryl ring, or R^{5x} and R^{5p} form together bridging ethylene, or R^{5y} and R^{5p} form together bridging ethylene;

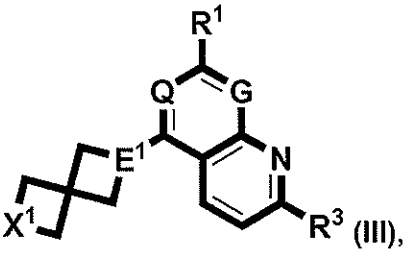
R^2 is phenyl, optionally substituted by one or more groups halogen, C_1-C_6-alkyl, halo-C_1-C_6-alkyl, hydroxy, C_1-C_6-alkoxy, optionally C_1-C_6-alkylated or C_1-C_{20}-acylated amino, or optionally substituted heteroaryl selected from pyridinyl, imidazolyl, pyrimidinyl, pyrazolyl, triazolyl, pyrazinyl, tetrazolyl, furyl, thienyl, oxazolyl, isoxazolyl, thiazolyl, isothiazolyl, pyrrolyl, indolyl, benzimidazolyl, indazolyl, oxadiazolyl, and thiadiazolyl, wherein the substituents considered are one or more groups halogen, C_1-C_6-alkyl, halo-C_1-C_6-alkyl, hydroxy, C_1-C_6-alkoxy, optionally C_1-C_6-alkylated or C_1-C_{20}-acylated amino, pyrdiyl, aminopyridyl, or optionally substituted phenyl; and

R^4 is hydrogen, methyl, a reactive group selected from acryloyl, methacryloyl, 4-amino-but-2-enoyl, 4-dimethylamino-but-2-enoyl, 4-(dimethylamino)-2,3-epoxy-butanoyl, 3-amino-1-propene-1-sulfonyl, and 3-(dimethylamino)-1-propene-1-sulfonyl, a chain of 1 to 20 methylene groups either directly linked to X^1, X^2, E^1 or E^2, or linked to the reactive group, such chain that is substituted by oxo, C_1-C_6 alkyl, a further chain of 1 to 6 methylene groups, phenyl, phenylene, or residues of naturally occurring amino acids, or such optionally substituted chain wherein one or more methylene groups are replaced by oxygen, a carbonyloxy group, optionally substituted nitrogen, a carboxamide group, a urea group, sulphur, a disulfide group, or combinations thereof, carrying one or two tags selected from biotin, avidin, streptavidin, a fluorescent marker, a naturally occurring amino acid, and a solid phase, and optionally one further reactive group selected from acryloyl, methacryloyl, 4-dimethylamino-but-2-enoyl, and 4-(dimethylamino)-2,3-epoxy-butanoyl;

and tautomers, solvates and pharmaceutically acceptable salts thereof.

4. The compound according to claim 1 of formula (II) or (III)


(II)


(III),

wherein

E^1 and E^2 are, independently of each other, N or N^+R^4;

X^1 and X^2 are, independently of each other, NR^4 or O;

R^1 is (*S*)-2-methylmorpholino; (*R*)-2-methylmorpholino; 2-(aminocarbonylmethyl)-morpholino; 2-(benzamidomethyl)morpholino; (2*R*,6*S*)-2,6-dimethylmorpholino; (2*R*,6*R*)-2,6-dimethylmorpholino; (*R*)-3-methylmorpholino; (*S*)-3-methylmorpholino; (2*R*,3*R*)-2,3-dimethylmorpholino; (2*S*,5*S*)-2,5-dimethylmorpholino; (3*S*,5*R*)-3,5-dimethylmorpholino; (3*S*,5*S*)-3,5-dimethylmorpholino; octahydrocyclopenta[*b*][1,4]oxazin-4-yl; octahydro-2H-benzo[b][1,4]oxazin-4-yl; 3,4-dihydro-2*H*-benzo[*b*][1,4]oxazin-4-yl; 3-methoxycarbonyl-methyl-2-methylmorpholino; 2-(methoxycarbonylmethyl)morpholino; 3-(methoxycarbonyl-methyl)morpholino; 2-vinylmorpholino; 2-(methoxycarbonylmethyl)-5-methylmorpholino; 3-(aminomethyl)morpholino; 2-(aminomethyl)morpholino; 2-cyanomorpholino; 2-(carboxy-methyl)morpholino; 3-(hydroxymethyl)morpholino; 2-(hydroxymethyl)morpholino; 2-(acet-amidomethyl)morpholino; 2-(pyrrolidinocarbonylmethyl)morpholino; 2-(aminocarbonyl)-morpholino; 3-(aminocarbonyl)morpholino; 3-cyanomorpholino; 2,2,6,6-tetramethyl-morpholino; 2,2,6-trimethylmorpholino; 8-oxa-3-azabicyclo[3.2.1]octan-3-yl; (1*S*,5*R*)-8-oxa-3-azabicyclo[3.2.1]octan-3-yl; (1*R*,5*S*)-3-oxa-8-azabicyclo[3.2.1]octan-8-yl; piperidino, piperazino, 4-methylpiperazino; 4-(methoxycarbonyl)piperazino, 4-(methylsulfonyl)-piperazino; or ;

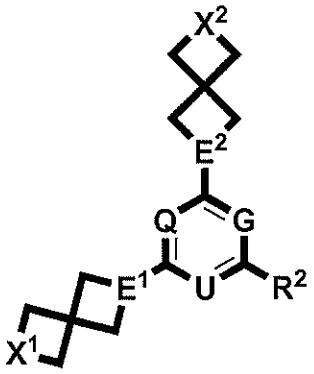
R^3 is C_1-C_6-alkylamino, di-C_1-C_6-alkylamino, hydroxy-C_1-C_6-alkylamino, di(hydroxy-C_1-C_6-alkyl)amino, C_1-C_6-alkoxy-C_1-C_6-alkylamino, di(C_1-C_6-alkoxy-C_1-C_6-alkyl)amino, C_1-C_6-alkoxy-C_1-C_6-alkoxy-C_1-C_6-alkylamino, oxo-C_1-C_6-alkylamino, amino-C_1-C_6-alkylamino, C_1-C_6-alkylamino-C_1-C_6-alkylamino, di(C_1-C_6-alkyl)amino-C_1-C_6-alkylamino, hydroxy-C_1-C_6-alkylamino-C_1-C_6-alkylamino, di(hydroxy-C_1-C_6-alkyl)amino-C_1-C_6-alkylamino, C_1-C_6-alkylcarbonylamino-C_1-C_6-alkylamino, phenyl-C_1-C_6-alkylamino, C_2-C_6-alkenylamino, phenylamino, pyridylamino, pyrimidinylamino, pyrrolylamino, pyrrolidino, piperidino, piperazino, methylpiperazino, morpholino, dimethylmorpholino; phenyl or naphthyl, optionally substituted by one or more groups halogen, C_1-C_6-alkyl, halo-C_1-C_6-alkyl, hydroxy-C_1-C_6-alkyl, C_1-C_6-alkoxy-C_1-C_6-alkyl, oxo-C_1-C_6-alkyl, carboxy-C_1-C_6-alkyl, C_1-C_6-alkoxycarbonyl-C_1-C_6-alkyl, aminocarbonyl-C_1-C_6-alkyl, C_1-C_6-alkylaminocarbonyl-C_1-C_6-

alkyl, amino-C_1-C_6-alkyl, C_1-C_6-alkylamino-C_1-C_6-alkyl, C_1-C_6-alkylcarbonylamino-C_1-C_6-alkyl, C_2-C_6-alkenylcarbonylamino-C_1-C_6-alkyl, phenyl-C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl, hydroxy, C_1-C_6-alkoxy, C_1-C_6-alkoxy-C_1-C_6-alkoxy, amino, C_1-C_6-alkylamino, di-C_1-C_6-alkylamino, hydroxy-C_1-C_6-alkylamino, di(hydroxy-C_1-C_6-alkyl)amino, C_1-C_6-alkylcarbonylamino, halo-C_1-C_6-alkylcarbonylamino, C_2-C_6-alkenylcarbonylamino, C_1-C_6-alkyloxycarbonylamino, C_1-C_6-alkylaminocarbonylamino, pyridinylcarbonylamino, aminopyridinylcarbonylamino, amino-trifluoromethyl-pyridinylcarbonylamino, halo-C_1-C_6-alkylsulfonylamino, cyano, carboxy, C_1-C_6-alkoxycarbonyl, or aminocarbonyl; optionally substituted heteroaryl selected from pyridinyl, imidazolyl, pyrimidinyl, furyl, indolyl, benzimidazolyl, or indazolyl, wherein the substituents are selected from C_1-C_6-alkyl, halo-C_1-C_6-alkyl, amino or C_1-C_8-acylamino, wherein C_1-C_8-acyl is a C_1-C_7-alkyl, halo-C_1-C_7-alkyl, epoxy-C_1-C_7-alkyl, C_2-C_7-alkenyl, pyridyl or aminopyridyl group connected to carbonyl, oxycarbonyl or aminocarbonyl; and combinations thereof; and

R^4 is hydrogen, methyl, a reactive group selected from acryloyl, methacryloyl, 4-dimethylamino-but-2-enoyl, 4-(dimethylamino)-2,3-epoxy-butanoyl, 3-amino-1-propene-1-sulfonyl, 3-(dimethylamino)-1-propene-1-sulfonyl, fluoro-, chloro-, bromo- or iodoacetyl, chloro- or bromomethanesulfonyl, 2,2-dichloroacetyl, 2,2,2-trichloroacetyl, methylsulfonyl-oxyacetyl, 2-chloropropionyl, 2,3-epoxypropionyl, (phenylthio)thiocarbonyl, 2-nitro-phenoxycarbonyl, 4-fluorophenoxycarbonyl, and 4-(3-(trifluoromethyl)-3H-diazirin-3-yl)benzamide, a chain of 1 to 20 optionally substituted methylene groups either directly linked to X^1, X^2, E^1 or E^2, or linked to the reactive group, or such chain wherein one or more methylene groups are replaced by oxygen, a carbonyloxy group, optionally substituted nitrogen, a carboxamide group, a urea group, sulphur, a disulfide group, or combinations thereof, carrying one or two tags selected from biotin, avidin, streptavidin, a fluorescent marker, a naturally occurring amino acid, and a solid phase, and optionally a reactive group selected from acryloyl, methacryloyl, 4-amino-but-2-enoyl, 4-dimethyl-amino-but-2-enoyl, 4-(dimethylamino)-2,3-epoxy-butanoyl, 3-amino-1-propene-1-sulfonyl, 3-(dimethylamino)-1-propene-1-sulfonyl, fluoro-, chloro-, bromo- or iodoacetyl, chloro- or bromomethanesulfonyl, 2,2-dichloroacetyl, 2,2,2-trichloroacetyl, methylsulfonyloxyacetyl, 2-chloropropionyl, 2,3-epoxypropionyl, (phenylthio)thiocarbonyl, 2-nitrophenoxycarbonyl, and 4-fluorophenoxycarbonyl;

and tautomers, solvates and pharmaceutically acceptable salts thereof.

5. The compound according to claim 1 of formula



(IV)

wherein

G is CH or N, Q is CH or N, and U is CH or N, with the proviso that at least two of G, Q and U are N, or one of G and U together with R^2 forms an anullated pyridine ring further substituted by R^3, and the other one of G and U is N and Q is N;

E^1 and E^2 are, independently of each other, CR^4, N, N^+R^4, or N→O;

X^1 and X^2 are, independently of each other, CHR^4, CH_2CH_2, NR^4, NR^4→O, or O;

R^2 is hydrogen, halogen, cyano, nitro, C_1-C_6-alkyl, halo-C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl, optionally substituted C_3-C_{12}-carbocyclyl, optionally substituted C_6-C_{20}-aryl, optionally substituted C_2-C_{19}-heterocyclyl, optionally substituted C_1-C_{19}-heteroaryl, C_1-C_6-alkylsulfonyl, halo-C_1-C_6-alkylsulfonyl, optionally substituted C_6-C_{20}-arylsulfonyl, optionally substituted aminosulfonyl, a reactive group, or a linker carrying a reactive group and/or a tag;

R^3 is optionally substituted amino, optionally substituted C_6-C_{20}-aryl, or optionally substituted C_1-C_{19}-heteroaryl;

R^4 is hydrogen, C_1-C_6-alkyl, C_1-C_6-acyl, C_1-C_6-acylamino-C_1-C_6-alkyl, a reactive group or a linker carrying a reactive group and/or a tag;

and tautomers, prodrugs, metabolites, solvates and pharmaceutically acceptable salts thereof.

6. The compound of formula (IV) according to claim 5, wherein

G is CH or N, Q is CH or N, and U is CH or N, with the proviso that at least two of G, Q and U are N;

E^1 and E^2 are, independently of each other, N or N^+R^4;

X^1 and X^2 are, independently of each other, NR^4 or O;

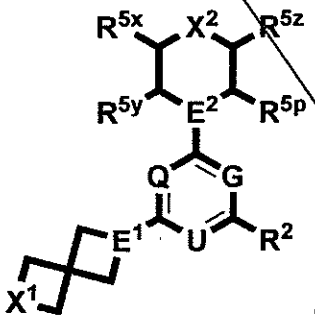
R^2 is meta- or para-substituted phenyl or 2,4-, 3,4- or 3,5-disubstituted phenyl, wherein the substituents are selected from halogen, C_1-C_6-alkyl, halo-C_1-C_6-alkyl, hydroxy, C_1-C_6-alkoxy, optionally C_1-C_6-alkylated or C_1-C_{20}-acylated amino; or optionally substituted heteraryl selected from pyridinyl, imidazolyl, pyrimidinyl, furyl, indolyl, benzimidazolyl,

indazolyl, oxadiazolyl, and thiadiazolyl, wherein the substituents are selected from C_1-C_6-alkyl, halo-C_1-C_6-alkyl, dimethoxyhydroxyphenyl, pyridyl, aminopyridyl, amino or C_1-C_8-acylamino, wherein C_1-C_8-acyl is a C_1-C_7-alkyl, halo-C_1-C_7-alkyl, epoxy-C_1-C_7-alkyl, C_2-C_7-alkenyl, pyridyl or aminopyridyl group connected to carbonyl, oxycarbonyl or amino-carbonyl; and combinations thereof; and

R^4 is hydrogen, methyl, a reactive group selected from acryloyl, methacryloyl, 4-amino-but-2-enoyl, 4-dimethylamino-but-2-enoyl, 4-(dimethylamino)-2,3-epoxy-butanoyl, 3-amino-1-propene-1-sulfonyl, and 3-(dimethylamino)-1-propene-1-sulfonyl, a chain of 1 to 20 methylene groups either directly linked to X^1, X^2, E^1 or E^2, or linked to the reactive group, such chain that is substituted by oxo, C_1-C_6 alkyl, a further chain of 1 to 6 methylene groups, phenyl, phenylene, or residues of naturally occurring amino acids, or such optionally substituted chain wherein one or more methylene groups are replaced by oxygen, a carbonyloxy group, optionally substituted nitrogen, a carboxamide group, a urea group, sulphur, a disulfide group, or combinations thereof, carrying one or two tags selected from biotin, avidin, streptavidin, a fluorescent marker, a naturally occurring amino acid, and a solid phase, and optionally one further reactive group selected from acryloyl, methacryloyl, 4-dimethylamino-but-2-enoyl, and 4-(dimethylamino)-2,3-epoxy-butanoyl;

and tautomers, solvates and pharmaceutically acceptable salts thereof.

7. The compound according to claim 1 of formula



(V)

wherein

G is CH or N, Q is CH or N, and U is CH or N, with the proviso that at least two of G, Q and U are N, or one of G and U together with R^2 forms an anullated pyridine ring further substituted by R^3, and the other one of G and U is N and Q is N;

E^1 and E^2 are, independently of each other, CR^4, N, N^+R^4, or N→O;

X^1 and X^2 are, independently of each other, CHR^4, CH_2CH_2, NR^4, NR^4→O, or O;

R^2 is hydrogen, halogen, cyano, nitro, C_1-C_6-alkyl, halo-C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl, optionally substituted C_3-C_{12}-carbocyclyl, optionally substituted C_6-C_{20}-aryl, optionally substituted C_2-C_{19}-heterocyclyl, optionally substituted C_1-C_{19}-heteroaryl, C_1-C_6-

alkylsulfonyl, halo-C_1-C_6-alkylsulfonyl, optionally substituted C_6-C_{20}-arylsulfonyl, optionally substituted aminosulfonyl, a reactive group, or a linker carrying a reactive group and/or a tag;

R^3 is optionally substituted amino, optionally substituted C_6-C_{20}-aryl, or optionally substituted C_1-C_{19}-heteroaryl;

R^4 is hydrogen, C_1-C_6-alkyl, C_1-C_6-acyl, C_1-C_6-acylamino-C_1-C_6-alkyl, a reactive group or a linker carrying a reactive group and/or a tag;

R^{5x}, R^{5y}, R^{5z} and R^{5p} are, independently of each other, hydrogen, halogen, cyano, optionally substituted C_1-C_6 alkyl, C_2-C_6 alkenyl, or C_2-C_6 alkynyl, or one or two of R^{5x}, R^{5y}, R^{5z} and R^{5p} are two geminal substituents methyl and the other ones are hydrogen, or R^{5x} and R^{5y}, or R^{5z} and R^{5p} form together an anullated five- or six-membered carbocyclyl, heterocyclyl, aryl or heteroaryl ring, or R^{5x} and R^{5p} form together bridging ethylene, or R^{5y} and R^{5p} form together bridging ethylene;

and tautomers, prodrugs, metabolites, solvates and pharmaceutically acceptable salts thereof.

8. The compound selected from the group consisting of 6-amino-N-(3-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)phenyl)nicotinamide (example **111**); N-(3-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)phenyl)nicotinamide (**125**); methyl (4-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)phenyl)carbamate (**131**); methyl (4-(4-(8-oxa-3-azabicyclo[3.2.1]octan-3-yl)-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)phenyl)carbamate (**132**); 1-methyl-3-(4-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)phenyl)urea (**141**); 1-(4-(4-(8-oxa-3-azabicyclo[3.2.1]octan-3-yl)-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)phenyl)-3-methylurea (**146**); 1-ethyl-3-(4-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]-heptan-6-yl)-1,3,5-triazin-2-yl)phenyl)urea (**151**); 1-(4-(4-(8-oxa-3-azabicyclo[3.2.1]octan-3-yl)-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)phenyl)-3-ethylurea (**155**); 1-ethyl-3-(5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyridin-2-yl)urea (**160**); 1-(5-(4-(8-oxa-3-azabicyclo[3.2.1]octan-3-yl)-6-(2-oxa-6-azaspiro[3.3]-heptan-6-yl)-1,3,5-triazin-2-yl)pyridin-2-yl)-3-ethylurea (**164**); 1-ethyl-3-(5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyrimidin-2-yl)urea (**169**); 1-(5-(4-(8-oxa-3-azabicyclo[3.2.1]octan-3-yl)-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyrimidin-2-yl)-3-ethylurea (**173**); 1-(4-(4-(dimethylamino)piperidine-1-carbonyl)phenyl)-3-(4-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)phenyl)urea (**196**); 1-(4-(4-(dimethylamino)piperidine-1-carbonyl)phenyl)-3-(5-(4-morpholino-6-(2-oxa-

6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyridin-2-yl)urea (**200**); 1-(4-(4-(dimethylamino)piperidine-1-carbonyl)phenyl)-3-(5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyrimidin-2-yl)urea (**204**); 5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyridin-2-amine (**215**); 4-methyl-5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyridin-2-amine (**220**); 5-(4-(8-oxa-3-azabicyclo[3.2.1]octan-3-yl)-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)-4-methylpyridin-2-amine (**221**); 5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)-4-(trifluoromethyl)pyridin-2-amine (**225**); 5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)pyrimidin-2-yl)-4-(trifluoromethyl)pyridin-2-amine (**227**); 5-(6-morpholino-2-(2-oxa-6-azaspiro[3.3]heptan-6-yl)pyrimidin-4-yl)-4-(trifluoromethyl)pyridin-2-amine (**228**); 5-(2-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)pyrimidin-4-yl)-4-(trifluoromethyl)-pyridin-2-amine (**229**); 5-(4-(6-methyl-2,6-diazaspiro[3.3]heptan-2-yl)-6-morpholino-1,3,5-triazin-2-yl)-4-(trifluoromethyl)pyridin-2-amine (**231**); 5-(4-morpholino-6-(2-oxa-6-azaspiro-[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyrimidin-2-amine (**251**); 5-(4-(8-oxa-3-azabicyclo-[3.2.1]octan-3-yl)-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyrimidin-2-amine (**252**); 4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-[2,5'-bipyrimidin]-2'-amine (**253**); 6-morpholino-2-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-[4,5'-bipyrimidin]-2'-amine (**254**); 2-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-[4,5'-bipyrimidin]-2'-amine (**255**); 5-(4-(6-methyl-2,6-diazaspiro[3.3]heptan-2-yl)-6-morpholino-1,3,5-triazin-2-yl)pyrimidin-2-amine (**257**); 1-(6-(4-(2-aminopyrimidin-5-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]-heptan-2-yl)prop-2-en-1-one (**259**); 1-(6-(4-(2-aminopyrimidin-5-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-yl)-2-chloroethanone (**261**); 4-methyl-5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyrimidin-2-amine (**268**); 5-(4-(8-oxa-3-azabicyclo[3.2.1]octan-3-yl)-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)-4-methylpyrimidin-2-amine (**269**); 5-(4-morpholino-6-(2-oxa-6-azaspiro-[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)-4-(trifluoromethyl)pyrimidin-2-amine (**273**); 4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-4'-(trifluoromethyl)-[2,5'-bipyrimidin]-2'-amine (**276**); 6-morpholino-2-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-4'-(trifluoromethyl)-[4,5'-bipyrimidin]-2'-amine (**277**); 2-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-4'-(trifluoromethyl)-[4,5'-bipyrimidin]-2'-amine (**278**); 6-(4-(2-(difluoromethyl)-1H-benzo[d]-imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2-oxa-6-azaspiro[3.3]heptane (**299**); 6-(2-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholinopyrimidin-4-yl)-2-oxa-6-azaspiro-[3.3]heptane (**300**); 6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-pyrimidin-2-yl)-2-oxa-6-azaspiro[3.3]heptane (**301**); 6-(6-(2-(difluoromethyl)-1H-benzo-[d]imidazol-1-yl)-2-morpholinopyrimidin-4-yl)-2-oxa-6-azaspiro[3.3]heptane (**302**); 4-(4-(2-

(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-(2,6-diazaspiro[3.3]heptan-2-yl)-1,3,5-triazin-2-yl)morpholine (**303**); 4-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-(6-methyl-2,6-diazaspiro[3.3]heptan-2-yl)-1,3,5-triazin-2-yl)morpholine (**304**); 3-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)-8-oxa-3-azabicyclo[3.2.1]octane (**308**); N-(2-(6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-yl)ethyl)acrylamide (**312**); 2-chloro-N-(2-(6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-yl)ethyl)acetamide (**316**); 1-(6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-yl)-prop-2-en-1-one (**317**); 2-chloro-1-(6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-yl)ethanone (**323**); 2,6-dimethoxy-4-(1-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)-1H-imidazol-4-yl)phenol (**345**); 4-(1-(4-(8-oxa-3-azabicyclo[3.2.1]octan-3-yl)-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)-1H-imidazol-4-yl)-2,6-dimethoxyphenol (**346**); 2,6-dimethoxy-4-(5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)furan-2-yl)phenol (**351**); 4-(5-(4-(8-oxa-3-azabicyclo[3.2.1]octan-3-yl)-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)furan-2-yl)-2,6-dimethoxyphenol (**352**); (E)-3-((6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-yl)sulfonyl)prop-2-en-1-amine (**366**); (E)-3-((6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-yl)sulfonyl)-N,N-dimethylprop-2-en-1-amine (**367**); (E)-1-(6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-yl)-4-(dimethylamino)but-2-en-1-one (**368**); N-((E)-3-((6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-yl)sulfonyl)allyl)-5-((3aS,4S,6aR)-2-oxohexahydro-1H-thieno[3,4-d]imidazol-4-yl)pentanamide (**369**); N-((E)-4-(6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-yl)-4-oxobut-2-en-1-yl)-5-((3aS,4S,6aR)-2-oxohexahydro-1H-thieno[3,4-d]imidazol-4-yl)pentanamide (**370**); (E)-3-(4-(2-((6-(6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-yl)-6-oxohexyl)amino)-2-oxoethoxy)styryl)-5,5-difluoro-7-(thiophen-2-yl)-5H-dipyrrolo[1,2-c:2',1'-f][1,3,2]diazaborinin-4-ium-5-uide (**371**); (5-(4-(8-oxa-3-azabicyclo[3.2.1]octan-3-yl)-2-(2-oxa-6-azaspiro[3.3]heptan-6-yl)pyrido[2,3-d]pyrimidin-7-yl)-2-methoxyphenyl)methanol (**372**); (5-(4-((3R,5S)-3,5-dimethylmorpholino)-2-(2-oxa-6-azaspiro[3.3]heptan-6-yl)pyrido[2,3-d]pyrimidin-7-yl)-2-methoxyphenyl)methanol (**374**); and (2-methoxy-5-(4-morpholino-2-(2-oxa-6-azaspiro[3.3]heptan-6-yl)pyrido[2,3-d]-

pyrimidin-7-yl)phenyl)methanol (**375**).

9. The compound selected from the group consisting of methyl (4-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)phenyl)carbamate (**131**); methyl (4-(4-(8-oxa-3-azabicyclo[3.2.1]octan-3-yl)-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)phenyl)carbamate (**132**); 1-methyl-3-(4-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)phenyl)urea (**141**); 1-(4-(4-(8-oxa-3-azabicyclo[3.2.1]octan-3-yl)-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)phenyl)-3-methylurea (**146**); 5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyridin-2-amine (**215**); 4-methyl-5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyridin-2-amine (**220**); 4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-[2,5'-bipyrimidin]-2'-amine (**253**); 6-morpholino-2-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-[4,5'-bipyrimidin]-2'-amine (**254**); 2-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-[4,5'-bipyrimidin]-2'-amine (**255**); 5-(4-(6-methyl-2,6-diazaspiro[3.3]heptan-2-yl)-6-morpholino-1,3,5-triazin-2-yl)pyrimidin-2-amine (**257**); 1-(6-(4-(2-aminopyrimidin-5-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-yl)prop-2-en-1-one (**259**); 1-(6-(4-(2-aminopyrimidin-5-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-yl)-2-chloroethanone (**261**); 4-methyl-5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyrimidin-2-amine (**268**); 4-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-(6-methyl-2,6-diazaspiro-[3.3]heptan-2-yl)-1,3,5-triazin-2-yl)morpholine (**304**); 2,6-dimethoxy-4-(5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)furan-2-yl)phenol (**351**); (E)-3-((6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-yl)sulfonyl)-N,N-dimethylprop-2-en-1-amine (**367**); (5-(4-(8-oxa-3-azabicyclo[3.2.1]octan-3-yl)-2-(2-oxa-6-azaspiro[3.3]heptan-6-yl)pyrido[2,3-d]pyrimidin-7-yl)-2-methoxyphenyl)methanol (**372**); (5-(4-((3R,5S)-3,5-dimethylmorpholino)-2-(2-oxa-6-azaspiro[3.3]heptan-6-yl)pyrido[2,3-d]pyrimidin-7-yl)-2-methoxyphenyl)methanol (**374**); and (2-methoxy-5-(4-morpholino-2-(2-oxa-6-azaspiro[3.3]heptan-6-yl)pyrido[2,3-d]-pyrimidin-7-yl)phenyl)methanol (**375**).

10. The compound selected from the group consisting of 1-ethyl-3-(4-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)phenyl)urea (**151**); 1-(4-(4-(8-oxa-3-azabicyclo[3.2.1]octan-3-yl)-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)-phenyl)-3-ethylurea (**155**); 1-ethyl-3-(5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyridin-2-yl)urea (**160**); 1-(5-(4-(8-oxa-3-azabicyclo[3.2.1]octan-3-yl)-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyridin-2-yl)-3-ethylurea (**164**); 1-

ethyl-3-(5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyrimidin-2-yl)urea (**169**); 1-(5-(4-(8-oxa-3-azabicyclo[3.2.1]octan-3-yl)-6-(2-oxa-6-azaspiro[3.3]-heptan-6-yl)-1,3,5-triazin-2-yl)pyrimidin-2-yl)-3-ethylurea (**173**); 1-(4-(4-(dimethylamino)-piperidine-1-carbonyl)phenyl)-3-(4-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)phenyl)urea (**196**); 1-(4-(4-(dimethylamino)piperidine-1-carbonyl)phenyl)-3-(5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyridin-2-yl)urea (**200**); 1-(4-(4-(dimethylamino)piperidine-1-carbonyl)phenyl)-3-(5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyrimidin-2-yl)urea (**204**); 5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)-4-(trifluoromethyl)pyridin-2-amine (**225**); 5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)pyrimidin-2-yl)-4-(trifluoro-methyl)pyridin-2-amine (**227**); 5-(6-morpholino-2-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-pyrimidin-4-yl)-4-(trifluoromethyl)pyridin-2-amine (**228**); 5-(2-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)pyrimidin-4-yl)-4-(trifluoromethyl)pyridin-2-amine (**229**); 5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyrimidin-2-amine (**251**); 5-(4-(8-oxa-3-azabicyclo[3.2.1]octan-3-yl)-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyrimidin-2-amine (**252**); 5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]-heptan-6-yl)-1,3,5-triazin-2-yl)-4-(trifluoromethyl)pyrimidin-2-amine (**273**); 4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-4'-(trifluoromethyl)-[2,5'-bipyrimidin]-2'-amine (**276**); 6-morpholino-2-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-4'-(trifluoromethyl)-[4,5'-bipyrimidin]-2'-amine (**277**); 2-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-4'-(trifluoromethyl)-[4,5'-bipyrimidin]-2'-amine (**278**); 6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2-oxa-6-azaspiro[3.3]heptane (**299**); 6-(2-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholinopyrimidin-4-yl)-2-oxa-6-azaspiro[3.3]heptane (**300**); 6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholinopyrimidin-2-yl)-2-oxa-6-azaspiro[3.3]heptane (**301**); 6-(6-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-2-morpholinopyrimidin-4-yl)-2-oxa-6-azaspiro[3.3]heptane (**302**); 4-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-(2,6-diazaspiro[3.3]heptan-2-yl)-1,3,5-triazin-2-yl)morpholine (**303**); N-(2-(6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-yl)ethyl)acrylamide (**312**); 2-chloro-N-(2-(6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro-[3.3]heptan-2-yl)ethyl)acetamide (**316**); 1-(6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-yl)prop-2-en-1-one (**317**); 2-chloro-1-(6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-yl)ethanone (**323**); 4-(5-(4-(8-oxa-3-azabicyclo[3.2.1]-octan-3-yl)-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)furan-2-yl)-2,6-di-

methoxyphenol (**352**); (E)-1-(6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-yl)-4-(dimethylamino)but-2-en-1-one (**368**); and (E)-3-(4-(2-((6-(6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-yl)-6-oxohexyl)amino)-2-oxoethoxy)styryl)-5,5-difluoro-7-(thiophen-2-yl)-5H-dipyrrolo[1,2-c:2',1'-f][1,3,2]diazaborinin-4-ium-5-uide (**371**).

11. A pharmaceutical composition comprising a compound of formula (I) as claimed in any one of claims 1 to 10 and a pharmaceutically acceptable carrier.

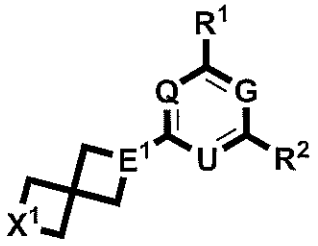
12. Use of a compound of formula (I) as claimed in any one of claims 1 to 10 in the manufacture of a medicament for inhibiting PI3 kinase activity.

13. Use of a compound of formula (I) as claimed in any one of claims 1 to 10 in the manufacture of a medicament for preventing or treating a disease or disorder modulated by PI3 kinases and/or mTOR.

14. Use of a compound of formula (I) as claimed in any one of claims 1 to 10, alone or in combination with one or more additional compounds having anti-hyperproliferative properties in the manufacture of a medicament for preventing or treating a hyperproliferative disorder.

CLAIMS

1. A compound of formula (I),



(I),

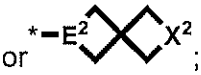
wherein

G is CH or N, Q is CH or N, and U is CH or N, with the proviso that at least two of G, Q and U are N, or one of G and U together with R^2 forms an anullated pyridine ring further substituted by R^3, and the other one of G and U is N and Q is N;

E^1 and E^2 are, independently of each other, CR^4, N, N^+R^4, or N→O;

X^1 and X^2 are, independently of each other, CHR^4, CH_2CH_2, NR^4, NR^4→O, or O;

R^1 is hydrogen, halogen, cyano, nitro, C_1-C_6-alkyl, halo-C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl, optionally substituted C_3-C_{12}-carbocyclyl, optionally substituted C_6-C_{20}-aryl, optionally substituted C_2-C_{19}-heterocyclyl, optionally substituted C_1-C_{19}-heteroaryl, C_1-C_6-alkylsulfonyl, halo-C_1-C_6-alkylsulfonyl, optionally substituted C_6-C_{20}-arylsulfonyl, optionally substituted aminosulfonyl, a reactive group, a linker carrying a reactive group and/or a tag,

or ;

R^2 is hydrogen, halogen, cyano, nitro, C_1-C_6-alkyl, halo-C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl, optionally substituted C_3-C_{12}-carbocyclyl, optionally substituted C_6-C_{20}-aryl, optionally substituted C_2-C_{19}-heterocyclyl, optionally substituted C_1-C_{19}-heteroaryl, C_1-C_6-alkylsulfonyl, halo-C_1-C_6-alkylsulfonyl, optionally substituted C_6-C_{20}-arylsulfonyl, optionally substituted aminosulfonyl, a reactive group, or a linker carrying a reactive group and/or a tag;

R^3 is optionally substituted amino, optionally substituted C_6-C_{20}-aryl, or optionally substituted C_1-C_{19}-heteroaryl;

R^4 is hydrogen, C_1-C_6-alkyl, C_1-C_6-acyl, C_1-C_6-acylamino-C_1-C_6-alkyl, a reactive group or a linker carrying a reactive group and/or a tag;

and wherein in R^1 and R^2 with the meaning optionally substituted C_3-C_{12}-carbocyclyl, substituents are one or more groups halogen, C_1-C_6-alkyl, halo-C_1-C_6-alkyl, hydroxy-C_1-C_6-alkyl, C_1-C_6-alkoxy-C_1-C_6-alkyl, oxo-C_1-C_6-alkyl, carboxy-C_1-C_6-alkyl, C_1-C_6-alkoxycarbonyl-C_1-C_6-alkyl, optionally C_1-C_6-alkylated aminocarbonyl-C_1-C_6-alkyl, optionally C_1-C_6-alkylated or C_1-C_6-acylated amino-C_1-C_6-alkyl, phenyl-C_1-C_6-alkyl, C_2-C_6-

alkenyl, C_2-C_6-alkynyl, hydroxy, C_1-C_6-alkoxy, C_1-C_6-alkoxy-C_1-C_6-alkoxy, oxo, optionally C_1-C_6-alkylated or C_1-C_{20}-acylated amino, cyano, carboxy, C_1-C_6-alkoxycarbonyl, aminocarbonyl, or phenyl optionally carrying hydroxy or C_1-C_6-alkoxy groups;

in R^1, R^2 and R^3 with the meaning optionally substituted C_6-C_{20}-aryl, substituents are the ones listed above as substituents for optionally substituted C_3-C_{12}-carbocyclyl, excluding oxo, and further one or more groups nitro, C_3-C_{12}-carbocyclyl, C_2-C_6-heterocyclyl optionally carrying one or more C_1-C_6-alkyl substituents, C_1-C_{19}-heteroaryl optionally carrying one or more C_1-C_6-alkyl, amino, C_1-C_6-alkylated amino or C_1-C_6-acylated amino substituents, C_1-C_6-alkylsulfonyl, halo-C_1-C_6-alkylsulfonyl, optionally alkylated aminosulfonyl, or phenylsulfonyl;

in R^1 and R^2 with the meaning optionally substituted C_2-C_{19}-heterocyclyl, substituents are the ones listed above as substituents for optionally substituted C_3-C_{12}-carbocyclyl,

in R^1, R^2 and R^3 with the meaning optionally substituted C_1-C_{19}-heteroaryl, substituents are the ones listed above as substituents for optionally substituted C_6-C_{20}-aryl,

in R^1 and R^2 with the meaning optionally substituted C_6-C_{20}-arylsulfonyl, substituents are the ones listed above as substituents for optionally substituted C_6-C_{20}-aryl,

in R^1 and R^2 with the meaning optionally substituted aminosulfonyl, substituents are one or two groups C_1-C_6-alkyl, hydroxy-C_1-C_6-alkyl, C_1-C_6-alkoxy-C_1-C_6-alkyl, oxo-C_1-C_6-alkyl, optionally alkylated or acylated amino-C_1-C_6-alkyl, phenyl-C_1-C_6-alkyl, C_2-C_6-alkenyl, one group phenyl, or a ring-forming bifunctional substituent giving rise to optionally alkylated heterocyclylsulfonyl,

in R^3 with the meaning optionally substituted amino, substituents are one or two groups C_1-C_6-alkyl, hydroxy-C_1-C_6-alkyl, C_1-C_6-alkoxy-C_1-C_6-alkyl, C_1-C_6-alkoxy-C_1-C_6-alkoxy-C_1-C_6-alkyl, oxo-C_1-C_6-alkyl, optionally alkylated or acylated amino-C_1-C_6-alkyl, phenyl-C_1-C_6-alkyl, C_2-C_6-alkenyl, one group phenyl, one group C_1-C_{19}-heteroaryl, or a ring-forming bifunctional substituent giving rise to optionally alkylated heterocyclyl;

a reactive group in R^1, R^2 and R^4 is a chemical function which reacts with a basic nitrogen atom, a nucleophilic hydroxy group, oxy anion or a sulfur anion of an enzyme, and comprises a carbon-carbon double bond conjugated with a carbon-oxygen double bond or with a sulfone function, an epoxy function, or an easily displaceable halogen or sulfonate function; or a reactive group is a group giving a reactive radical species on activation with light;

a linker in R^1, R^2 and R^4 is a chain of 1 to 20 optionally substituted methylene groups, or such chain wherein one or more methylene groups are replaced by oxygen, a carbonyloxy group, optionally substituted nitrogen, a carboxamide group, a urea group, sulphur, a disulfide group, or combinations thereof, wherein optional substituents of methylene groups are oxo, C_1-C_6 alkyl, a chain of 1 to 6 methylene groups giving rise to a trifunctional linker, phenyl, phenylene giving rise to a trifunctional linker, or residues of naturally occurring amino acids, and such linker is connected to the nucleus of formula (I) including X^1 and X^2, and carries a reactive group or a tag at the other end of the linker, or such a linker is a trifunctional linker carrying both a reactive group and a tag or carrying two different tags, or such a linker is a bifunctional linker connected to a reactive group and a tag, wherein the reactive group is connected to the nucleus of formula (I) including X^1 and X^2; and

a tag in R^1, R^2 and R^4 is biotin, avidin, streptavidin, a fluorescent marker, a naturally occurring amino acid, or a solid phase;

prodrugs, wherein

an amino acid residue, or a polypeptide chain of two or more amino acid residues, is covalently joined through an amide or ester bond to a free amino, hydroxy or carboxylic acid group,

a free carboxy group is derivatized as an amide or alkyl ester,

a free hydroxy group is derivatized as a phosphate ester, hemisuccinate, dimethylaminoacetate, or phosphoryloxymethoxycarbonyl group,

a free hydroxy or amino group is derivatized as a carbamate

a free hydroxy group is derivatized as a carbonate, sulfonate ester or sulfate ester, or as (acyloxy)methyl or (acyloxy)ethyl ether, wherein the acyl group is an alkyl ester optionally substituted with groups with ether, amine and carboxylic acid functionalities, or where the acyl group is an amino acid ester;

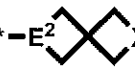
and tautomers, solvates and pharmaceutically acceptable salts thereof.

2. The compound of formula (I) according to claim 1, wherein

G is CH or N, Q is CH or N, and U is CH or N, with the proviso that at least two of G, Q and U are N;

E^1 and E^2 are, independently of each other, CR^4, N, N^+R^4, or $N\rightarrow O$;

X^1 and X^2 are, independently of each other, CHR^4, CH_2CH_2, NR^4, $NR^4\rightarrow O$, or O;

R^1 is optionally substituted C_3-C_{12}-carbocyclyl, optionally substituted C_6-C_{20}-aryl, optionally substituted C_2-C_{19}-heterocyclyl, optionally substituted C_1-C_{19}-heteroaryl, or ;

R^2 is optionally substituted C_6-C_{20} aryl or optionally substituted C_1-C_{20} heteroaryl; and

R^4 is hydrogen, methyl, a reactive group selected from acryloyl, methacryloyl, 4-dimethylamino-but-2-enoyl, 4-(dimethylamino)-2,3-epoxy-butanoyl, 3-amino-1-propene-1-sulfonyl, 3-(dimethylamino)-1-propene-1-sulfonyl, fluoro-, chloro-, bromo- or iodoacetyl, chloro- or bromomethanesulfonyl, 2,2-dichloroacetyl, 2,2,2-trichloroacetyl, methylsulfonyl-oxyacetyl, 2-chloropropionyl, 2,3-epoxypropionyl, (phenylthio)thiocarbonyl, 2-nitro-phenoxycarbonyl, 4-fluorophenoxycarbonyl, and 4-(3-(trifluoromethyl)-3H-diazirin-3-yl)-benzamide, a chain of 1 to 20 optionally substituted methylene groups either directly linked to X^1, X^2, E^1 or E^2, or linked to the reactive group, or such chain wherein one or more methylene groups are replaced by oxygen, a carbonyloxy group, optionally substituted nitrogen, a carboxamide group, a urea group, sulphur, a disulfide group, or combinations thereof, carrying one or two tags selected from biotin, avidin, streptavidin, a fluorescent marker, a naturally occurring amino acid, and a solid phase, and optionally a reactive group selected from acryloyl, methacryloyl, 4-amino-but-2-enoyl, 4-dimethyl-amino-but-2-enoyl, 4-(dimethylamino)-2,3-epoxy-butanoyl, 3-amino-1-propene-1-sulfonyl, 3-(dimethylamino)-1-propene-1-sulfonyl, fluoro-, chloro-, bromo- or iodoacetyl, chloro- or bromomethanesulfonyl, 2,2-dichloroacetyl, 2,2,2-trichloroacetyl, methylsulfonyloxyacetyl, 2-chloropropionyl, 2,3-epoxypropionyl, (phenylthio)thiocarbonyl, 2-nitrophenoxycarbonyl, and 4-fluorophenoxycarbonyl;

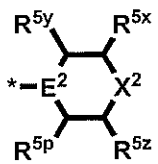
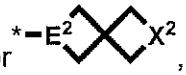
and tautomers, solvates and pharmaceutically acceptable salts thereof.

3. The compound of formula (I) according to claim 1, wherein

G is CH or N, Q is CH or N, and U is CH or N, with the proviso that at least two of G, Q and U are N;

E^1 and E^2 are, independently of each other, N or N^+R^4;

X^1 and X^2 are, independently of each other, NR^4 or O;

R^1 is  or , wherein R^{5x}, R^{5y}, R^{5z} and R^{5p} are, independently of each other, hydrogen, halogen, cyano C_1-C_6 alkyl, C_2-C_6 alkenyl, or C_2-C_6 alkynyl, or one or two of R^{5x}, R^{5y}, R^{5z} and R^{5p} are two geminal substituents methyl and the other ones

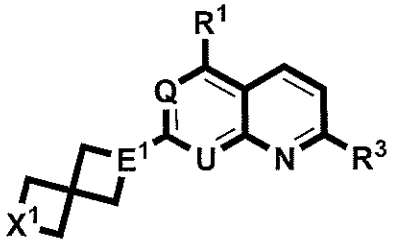
are hydrogen, or R^{5x} and R^{5y}, or R^{5z} and R^{5p} form together an anullated five- or six-membered carbocyclyl, heterocyclyl, aryl or heteroaryl ring, or R^{5x} and R^{5p} form together bridging ethylene, or R^{5y} and R^{5p} form together bridging ethylene;

R^2 is phenyl, optionally substituted by one or more groups halogen, C_1-C_6-alkyl, halo-C_1-C_6-alkyl, hydroxy, C_1-C_6-alkoxy, optionally C_1-C_6-alkylated or C_1-C_{20}-acylated amino, or optionally substituted heteroaryl selected from pyridinyl, imidazolyl, pyrimidinyl, pyrazolyl, triazolyl, pyrazinyl, tetrazolyl, furyl, thienyl, oxazolyl, isoxazolyl, thiazolyl, isothiazolyl, pyrrolyl, indolyl, benzimidazolyl, indazolyl, oxadiazolyl, and thiadiazolyl, wherein the substituents considered are one or more groups halogen, C_1-C_6-alkyl, halo-C_1-C_6-alkyl, hydroxy, C_1-C_6-alkoxy, optionally C_1-C_6-alkylated or C_1-C_{20}-acylated amino, pyrdiyl, aminopyridyl, or optionally substituted phenyl; and

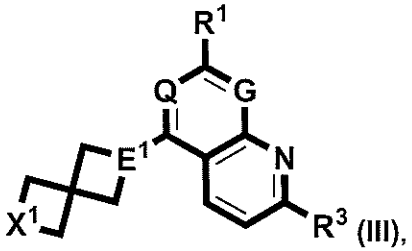
R^4 is hydrogen, methyl, a reactive group selected from acryloyl, methacryloyl, 4-amino-but-2-enoyl, 4-dimethylamino-but-2-enoyl, 4-(dimethylamino)-2,3-epoxy-butanoyl, 3-amino-1-propene-1-sulfonyl, and 3-(dimethylamino)-1-propene-1-sulfonyl, a chain of 1 to 20 methylene groups either directly linked to X^1, X^2, E^1 or E^2, or linked to the reactive group, such chain that is substituted by oxo, C_1-C_6 alkyl, a further chain of 1 to 6 methylene groups, phenyl, phenylene, or residues of naturally occurring amino acids, or such optionally substituted chain wherein one or more methylene groups are replaced by oxygen, a carbonyloxy group, optionally substituted nitrogen, a carboxamide group, a urea group, sulphur, a disulfide group, or combinations thereof, carrying one or two tags selected from biotin, avidin, streptavidin, a fluorescent marker, a naturally occurring amino acid, and a solid phase, and optionally one further reactive group selected from acryloyl, methacryloyl, 4-dimethylamino-but-2-enoyl, and 4-(dimethylamino)-2,3-epoxy-butanoyl;

and tautomers, solvates and pharmaceutically acceptable salts thereof.

4. The compound according to claim 1 of formula (II) or (III)



(II)



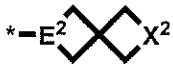
(III),

wherein

E^1 and E^2 are, independently of each other, N or N^+R^4;

X^1 and X^2 are, independently of each other, NR^4 or O;

R^1 is (*S*)-2-methylmorpholino; (*R*)-2-methylmorpholino; 2-(aminocarbonylmethyl)-morpholino; 2-(benzamidomethyl)morpholino; (2*R*,6*S*)-2,6-dimethylmorpholino; (2*R*,6*R*)-

2,6-dimethylmorpholino; (*R*)-3-methylmorpholino; (*S*)-3-methylmorpholino; (2*R*,3*R*)-2,3-dimethylmorpholino; (2*S*,5*S*)-2,5-dimethylmorpholino; (3*S*,5*R*)-3,5-dimethylmorpholino; (3*S*,5*S*)-3,5-dimethylmorpholino; octahydrocyclopenta[*b*][1,4]oxazin-4-yl; octahydro-2H-benzo[b][1,4]oxazin-4-yl; 3,4-dihydro-2*H*-benzo[*b*][1,4]oxazin-4-yl; 3-methoxycarbonyl-methyl-2-methylmorpholino; 2-(methoxycarbonylmethyl)morpholino; 3-(methoxycarbonyl-methyl)morpholino; 2-vinylmorpholino; 2-(methoxycarbonylmethyl)-5-methylmorpholino; 3-(aminomethyl)morpholino; 2-(aminomethyl)morpholino; 2-cyanomorpholino; 2-(carboxy-methyl)morpholino; 3-(hydroxymethyl)morpholino; 2-(hydroxymethyl)morpholino; 2-(acet-amidomethyl)morpholino; 2-(pyrrolidinocarbonylmethyl)morpholino; 2-(aminocarbonyl)-morpholino; 3-(aminocarbonyl)morpholino; 3-cyanomorpholino; 2,2,6,6-tetramethyl-morpholino; 2,2,6-trimethylmorpholino; 8-oxa-3-azabicyclo[3.2.1]octan-3-yl; (1*S*,5*R*)-8-oxa-3-azabicyclo[3.2.1]octan-3-yl; (1*R*,5*S*)-3-oxa-8-azabicyclo[3.2.1]octan-8-yl; piperidino, piperazino, 4-methylpiperazino; 4-(methoxycarbonyl)piperazino, 4-(methylsulfonyl)-piperazino; or ;

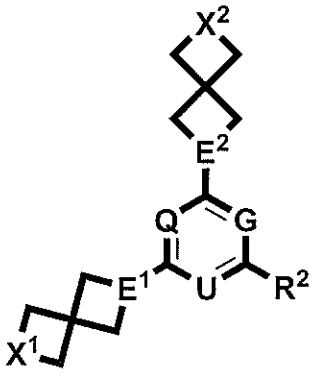
R^3 is C_1-C_6-alkylamino, di-C_1-C_6-alkylamino, hydroxy-C_1-C_6-alkylamino, di(hydroxy-C_1-C_6-alkyl)amino, C_1-C_6-alkoxy-C_1-C_6-alkylamino, di(C_1-C_6-alkoxy-C_1-C_6-alkyl)amino, C_1-C_6-alkoxy-C_1-C_6-alkoxy-C_1-C_6-alkylamino, oxo-C_1-C_6-alkylamino, amino-C_1-C_6-alkylamino, C_1-C_6-alkylamino-C_1-C_6-alkylamino, di(C_1-C_6-alkyl)amino-C_1-C_6-alkylamino, hydroxy-C_1-C_6-alkylamino-C_1-C_6-alkylamino, di(hydroxy-C_1-C_6-alkyl)amino-C_1-C_6-alkylamino, C_1-C_6-alkylcarbonylamino-C_1-C_6-alkylamino, phenyl-C_1-C_6-alkylamino, C_2-C_6-alkenylamino, phenylamino, pyridylamino, pyrimidinylamino, pyrrolylamino, pyrrolidino, piperidino, piperazino, methylpiperazino, morpholino, dimethylmorpholino; phenyl or naphthyl, optionally substituted by one or more groups halogen, C_1-C_6-alkyl, halo-C_1-C_6-alkyl, hydroxy-C_1-C_6-alkyl, C_1-C_6-alkoxy-C_1-C_6-alkyl, oxo-C_1-C_6-alkyl, carboxy-C_1-C_6-alkyl, C_1-C_6-alkoxycarbonyl-C_1-C_6-alkyl, aminocarbonyl-C_1-C_6-alkyl, C_1-C_6-alkylaminocarbonyl-C_1-C_6-alkyl, amino-C_1-C_6-alkyl, C_1-C_6-alkylamino-C_1-C_6-alkyl, C_1-C_6-alkylcarbonylamino-C_1-C_6-alkyl, C_2-C_6-alkenylcarbonylamino-C_1-C_6-alkyl, phenyl-C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl, hydroxy, C_1-C_6-alkoxy, C_1-C_6-alkoxy-C_1-C_6-alkoxy, amino, C_1-C_6-alkylamino, di-C_1-C_6-alkylamino, hydroxy-C_1-C_6-alkylamino, di(hydroxy-C_1-C_6-alkyl)amino, C_1-C_6-alkylcarbonylamino, halo-C_1-C_6-alkylcarbonylamino, C_2-C_6-alkenylcarbonylamino, C_1-C_6-alkyloxycarbonylamino, C_1-C_6-alkylaminocarbonylamino, pyridinylcarbonylamino, aminopyridinylcarbonylamino, amino-trifluoromethyl-pyridinylcarbonylamino, halo-C_1-C_6-alkylsulfonylamino, cyano, carboxy, C_1-C_6-alkoxycarbonyl, or aminocarbonyl; optionally substituted heteroaryl selected from pyridinyl, imidazolyl, pyrimidinyl, furyl, indolyl, benzimidazolyl, or indazolyl, wherein the substituents are selected from C_1-C_6-alkyl, halo-

C_1-C_6-alkyl, amino or C_1-C_8-acylamino, wherein C_1-C_8-acyl is a C_1-C_7-alkyl, halo-C_1-C_7-alkyl, epoxy-C_1-C_7-alkyl, C_2-C_7-alkenyl, pyridyl or aminopyridyl group connected to carbonyl, oxycarbonyl or aminocarbonyl; and combinations thereof; and

R^4 is hydrogen, methyl, a reactive group selected from acryloyl, methacryloyl, 4-dimethylamino-but-2-enoyl, 4-(dimethylamino)-2,3-epoxy-butanoyl, 3-amino-1-propene-1-sulfonyl, 3-(dimethylamino)-1-propene-1-sulfonyl, fluoro-, chloro-, bromo- or iodoacetyl, chloro- or bromomethanesulfonyl, 2,2-dichloroacetyl, 2,2,2-trichloroacetyl, methylsulfonyl-oxyacetyl, 2-chloropropionyl, 2,3-epoxypropionyl, (phenylthio)thiocarbonyl, 2-nitro-phenoxycarbonyl, 4-fluorophenoxycarbonyl, and 4-(3-(trifluoromethyl)-3H-diazirin-3-yl)benzamide, a chain of 1 to 20 optionally substituted methylene groups either directly linked to X^1, X^2, E^1 or E^2, or linked to the reactive group, or such chain wherein one or more methylene groups are replaced by oxygen, a carbonyloxy group, optionally substituted nitrogen, a carboxamide group, a urea group, sulphur, a disulfide group, or combinations thereof, carrying one or two tags selected from biotin, avidin, streptavidin, a fluorescent marker, a naturally occurring amino acid, and a solid phase, and optionally a reactive group selected from acryloyl, methacryloyl, 4-amino-but-2-enoyl, 4-dimethyl-amino-but-2-enoyl, 4-(dimethylamino)-2,3-epoxy-butanoyl, 3-amino-1-propene-1-sulfonyl, 3-(dimethylamino)-1-propene-1-sulfonyl, fluoro-, chloro-, bromo- or iodoacetyl, chloro- or bromomethanesulfonyl, 2,2-dichloroacetyl, 2,2,2-trichloroacetyl, methylsulfonyloxyacetyl, 2-chloropropionyl, 2,3-epoxypropionyl, (phenylthio)thiocarbonyl, 2-nitrophenoxycarbonyl, and 4-fluorophenoxycarbonyl;

and tautomers, solvates and pharmaceutically acceptable salts thereof.

5. The compound according to claim 1 of formula



(IV)

wherein

G is CH or N, Q is CH or N, and U is CH or N, with the proviso that at least two of G, Q and U are N, or one of G and U together with R^2 forms an anullated pyridine ring further substituted by R^3, and the other one of G and U is N and Q is N;

E^1 and E^2 are, independently of each other, CR^4, N, N^+R^4, or N→O;

X^1 and X^2 are, independently of each other, CHR^4, CH_2CH_2, NR^4, NR^4→O, or O;

R^2 is hydrogen, halogen, cyano, nitro, C_1-C_6-alkyl, halo-C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl, optionally substituted C_3-C_{12}-carbocyclyl, optionally substituted C_6-C_{20}-aryl, optionally substituted C_2-C_{19}-heterocyclyl, optionally substituted C_1-C_{19}-heteroaryl, C_1-C_6-alkylsulfonyl, halo-C_1-C_6-alkylsulfonyl, optionally substituted C_6-C_{20}-arylsulfonyl, optionally substituted aminosulfonyl, a reactive group, or a linker carrying a reactive group and/or a tag;

R^3 is optionally substituted amino, optionally substituted C_6-C_{20}-aryl, or optionally substituted C_1-C_{19}-heteroaryl;

R^4 is hydrogen, C_1-C_6-alkyl, C_1-C_6-acyl, C_1-C_6-acylamino-C_1-C_6-alkyl, a reactive group or a linker carrying a reactive group and/or a tag;

and tautomers, prodrugs, solvates and pharmaceutically acceptable salts thereof.

6. The compound of formula (IV) according to claim 5, wherein

G is CH or N, Q is CH or N, and U is CH or N, with the proviso that at least two of G, Q and U are N;

E^1 and E^2 are, independently of each other, N or N^+R^4;

X^1 and X^2 are, independently of each other, NR^4 or O;

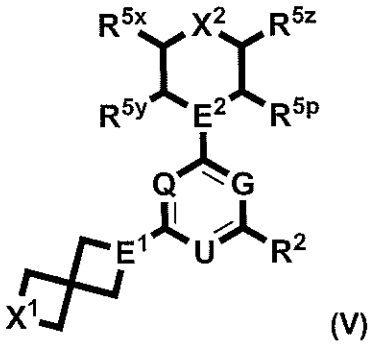
R^2 is meta- or para-substituted phenyl or 2,4-, 3,4- or 3,5-disubstituted phenyl, wherein the substituents are selected from halogen, C_1-C_6-alkyl, halo-C_1-C_6-alkyl, hydroxy, C_1-C_6-alkoxy, optionally C_1-C_6-alkylated or C_1-C_{20}-acylated amino; or optionally substituted heteraryl selected from pyridinyl, imidazolyl, pyrimidinyl, furyl, indolyl, benzimidazolyl, indazolyl, oxadiazolyl, and thiadiazolyl, wherein the substituents are selected from C_1-C_6-alkyl, halo-C_1-C_6-alkyl, dimethoxyhydroxyphenyl, pyridyl, aminopyridyl, amino or C_1-C_8-acylamino, wherein C_1-C_8-acyl is a C_1-C_7-alkyl, halo-C_1-C_7-alkyl, epoxy-C_1-C_7-alkyl, C_2-C_7-alkenyl, pyridyl or aminopyridyl group connected to carbonyl, oxycarbonyl or amino-carbonyl; and combinations thereof; and

R^4 is hydrogen, methyl, a reactive group selected from acryloyl, methacryloyl, 4-amino-but-2-enoyl, 4-dimethylamino-but-2-enoyl, 4-(dimethylamino)-2,3-epoxy-butanoyl, 3-amino-1-propene-1-sulfonyl, and 3-(dimethylamino)-1-propene-1-sulfonyl, a chain of 1 to 20 methylene groups either directly linked to X^1, X^2, E^1 or E^2, or linked to the reactive group, such chain that is substituted by oxo, C_1-C_6 alkyl, a further chain of 1 to 6 methylene groups, phenyl, phenylene, or residues of naturally occurring amino acids, or such optionally substituted chain wherein one or more methylene groups are replaced by oxygen, a carbonyloxy group, optionally substituted nitrogen, a carboxamide group, a urea

group, sulphur, a disulfide group, or combinations thereof, carrying one or two tags selected from biotin, avidin, streptavidin, a fluorescent marker, a naturally occurring amino acid, and a solid phase, and optionally one further reactive group selected from acryloyl, methacryloyl, 4-dimethylamino-but-2-enoyl, and 4-(dimethylamino)-2,3-epoxy-butanoyl;

and tautomers, solvates and pharmaceutically acceptable salts thereof.

7. The compound according to claim 1 of formula



(V)

wherein

G is CH or N, Q is CH or N, and U is CH or N, with the proviso that at least two of G, Q and U are N, or one of G and U together with R^2 forms an anullated pyridine ring further substituted by R^3, and the other one of G and U is N and Q is N;

E^1 and E^2 are, independently of each other, CR^4, N, N^+R^4, or N→O;

X^1 and X^2 are, independently of each other, CHR^4, CH_2CH_2, NR^4, NR^4→O, or O;

R^2 is hydrogen, halogen, cyano, nitro, C_1-C_6-alkyl, halo-C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl, optionally substituted C_3-C_{12}-carbocyclyl, optionally substituted C_6-C_{20}-aryl, optionally substituted C_2-C_{19}-heterocyclyl, optionally substituted C_1-C_{19}-heteroaryl, C_1-C_6-alkylsulfonyl, halo-C_1-C_6-alkylsulfonyl, optionally substituted C_6-C_{20}-arylsulfonyl, optionally substituted aminosulfonyl, a reactive group, or a linker carrying a reactive group and/or a tag;

R^3 is optionally substituted amino, optionally substituted C_6-C_{20}-aryl, or optionally substituted C_1-C_{19}-heteroaryl;

R^4 is hydrogen, C_1-C_6-alkyl, C_1-C_6-acyl, C_1-C_6-acylamino-C_1-C_6-alkyl, a reactive group or a linker carrying a reactive group and/or a tag;

R^{5x}, R^{5y}, R^{5z} and R^{5p} are, independently of each other, hydrogen, halogen, cyano, C_1-C_6 alkyl, C_2-C_6 alkenyl, or C_2-C_6 alkynyl, or one or two of R^{5x}, R^{5y}, R^{5z} and R^{5p} are two geminal substituents methyl and the other ones are hydrogen, or R^{5x} and R^{5y}, or R^{5z} and R^{5p} form together an anullated five- or six-membered carbocyclyl, heterocyclyl, aryl or heteroaryl ring, or R^{5x} and R^{5p} form together bridging ethylene, or R^{5y} and R^{5p} form together bridging ethylene;

and tautomers, prodrugs, solvates and pharmaceutically acceptable salts thereof.

8. The compound according to claim 1 selected from the group consisting of 6-amino-N-(3-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)phenyl)nicotinamide (example **111**); N-(3-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)phenyl)nicotinamide (**125**); methyl (4-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]-heptan-6-yl)-1,3,5-triazin-2-yl)phenyl)carbamate (**131**); methyl (4-(4-(8-oxa-3-azabicyclo[-3.2.1]octan-3-yl)-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)phenyl)carbamate (**132**); 1-methyl-3-(4-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)phenyl)urea (**141**); 1-(4-(4-(8-oxa-3-azabicyclo[3.2.1]octan-3-yl)-6-(2-oxa-6-azaspiro-[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)phenyl)-3-methylurea (**146**); 1-ethyl-3-(4-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)phenyl)urea (**151**); 1-(4-(4-(8-oxa-3-azabicyclo[3.2.1]octan-3-yl)-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)-phenyl)-3-ethylurea (**155**); 1-ethyl-3-(5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyridin-2-yl)urea (**160**); 1-(5-(4-(8-oxa-3-azabicyclo[3.2.1]octan-3-yl)-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyridin-2-yl)-3-ethylurea (**164**); 1-ethyl-3-(5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyrimidin-2-yl)urea (**169**); 1-(5-(4-(8-oxa-3-azabicyclo[3.2.1]octan-3-yl)-6-(2-oxa-6-azaspiro[3.3]-heptan-6-yl)-1,3,5-triazin-2-yl)pyrimidin-2-yl)-3-ethylurea (**173**); 1-(4-(4-(dimethylamino)-piperidine-1-carbonyl)phenyl)-3-(4-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)phenyl)urea (**196**); 1-(4-(4-(dimethylamino)piperidine-1-carbonyl)phenyl)-3-(5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyridin-2-yl)urea (**200**); 1-(4-(4-(dimethylamino)piperidine-1-carbonyl)phenyl)-3-(5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyrimidin-2-yl)urea (**204**); 5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyridin-2-amine (**215**); 4-methyl-5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyridin-2-amine (**220**); 5-(4-(8-oxa-3-azabicyclo[3.2.1]octan-3-yl)-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)-4-methylpyridin-2-amine (**221**); 5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]-heptan-6-yl)-1,3,5-triazin-2-yl)-4-(trifluoromethyl)pyridin-2-amine (**225**); 5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)pyrimidin-2-yl)-4-(trifluoromethyl)pyridin-2-amine (**227**); 5-(6-morpholino-2-(2-oxa-6-azaspiro[3.3]heptan-6-yl)pyrimidin-4-yl)-4-(trifluoromethyl)-pyridin-2-amine (**228**); 5-(2-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)pyrimidin-4-yl)-4-(trifluoromethyl)pyridin-2-amine (**229**); 5-(4-(6-methyl-2,6-diazaspiro[3.3]heptan-2-yl)-6-morpholino-1,3,5-triazin-2-yl)-4-(trifluoromethyl)pyridin-2-amine (**231**); 5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyrimidin-2-amine (**251**); 5-(4-(8-oxa-3-azabicyclo[3.2.1]octan-3-yl)-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-

yl)pyrimidin-2-amine (**252**); 4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-[2,5'-bipyrimidin]-2'-amine (**253**); 6-morpholino-2-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-[4,5'-bipyrimidin]-2'-amine (**254**); 2-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-[4,5'-bipyrimidin]-2'-amine (**255**); 5-(4-(6-methyl-2,6-diazaspiro[3.3]heptan-2-yl)-6-morpholino-1,3,5-triazin-2-yl)pyrimidin-2-amine (**257**); 1-(6-(4-(2-aminopyrimidin-5-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-yl)prop-2-en-1-one (**259**); 1-(6-(4-(2-amino-pyrimidin-5-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-yl)-2-chloro-ethanone (**261**); 4-methyl-5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyrimidin-2-amine (**268**); 5-(4-(8-oxa-3-azabicyclo[3.2.1]octan-3-yl)-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)-4-methylpyrimidin-2-amine (**269**); 5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)-4-(trifluoromethyl)-pyrimidin-2-amine (**273**); 4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-4'-(trifluoro-methyl)-[2,5'-bipyrimidin]-2'-amine (**276**); 6-morpholino-2-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-4'-(trifluoromethyl)-[4,5'-bipyrimidin]-2'-amine (**277**); 2-morpholino-6-(2-oxa-6-azaspiro-[3.3]heptan-6-yl)-4'-(trifluoromethyl)-[4,5'-bipyrimidin]-2'-amine (**278**); 6-(4-(2-(difluoro-methyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2-oxa-6-azaspiro[3.3]-heptane (**299**); 6-(2-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholinopyrimidin-4-yl)-2-oxa-6-azaspiro[3.3]heptane (**300**); 6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholinopyrimidin-2-yl)-2-oxa-6-azaspiro[3.3]heptane (**301**); 6-(6-(2-(difluoro-methyl)-1H-benzo[d]imidazol-1-yl)-2-morpholinopyrimidin-4-yl)-2-oxa-6-azaspiro[3.3]-heptane (**302**); 4-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-(2,6-diazaspiro[3.3]-heptan-2-yl)-1,3,5-triazin-2-yl)morpholine (**303**); 4-(4-(2-(difluoromethyl)-1H-benzo[d]-imidazol-1-yl)-6-(6-methyl-2,6-diazaspiro[3.3]heptan-2-yl)-1,3,5-triazin-2-yl)morpholine (**304**); 3-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)-8-oxa-3-azabicyclo[3.2.1]octane (**308**); N-(2-(6-(4-(2-(difluoro-methyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]-heptan-2-yl)ethyl)acrylamide (**312**); 2-chloro-N-(2-(6-(4-(2-(difluoromethyl)-1H-benzo[d]-imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-yl)ethyl)acet-amide (**316**); 1-(6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-yl)prop-2-en-1-one (**317**); 2-chloro-1-(6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro-[3.3]heptan-2-yl)ethanone (**323**); 2,6-dimethoxy-4-(1-(4-morpholino-6-(2-oxa-6-azaspiro-[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)-1H-imidazol-4-yl)phenol (**345**); 4-(1-(4-(8-oxa-3-aza-bicyclo[3.2.1]octan-3-yl)-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)-1H-imidazol-4-yl)-2,6-dimethoxyphenol (**346**); 2,6-dimethoxy-4-(5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)furan-2-yl)phenol (**351**); 4-(5-(4-(8-oxa-3-

azabicyclo[3.2.1]octan-3-yl)-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)furan-2-yl)-2,6-dimethoxyphenol (**352**); (E)-3-((6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-yl)sulfonyl)prop-2-en-1-amine (**366**); (E)-3-((6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-yl)sulfonyl)-N,N-dimethylprop-2-en-1-amine (**367**); (E)-1-(6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-yl)-4-(dimethylamino)but-2-en-1-one (**368**); N-((E)-3-((6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-yl)sulfonyl)allyl)-5-((3aS,4S,6aR)-2-oxohexahydro-1H-thieno[3,4-d]imidazol-4-yl)pentanamide (**369**); N-((E)-4-(6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-yl)-4-oxobut-2-en-1-yl)-5-((3aS,4S,6aR)-2-oxohexahydro-1H-thieno[3,4-d]imidazol-4-yl)pentanamide (**370**); (E)-3-(4-(2-((6-(6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-yl)-6-oxohexyl)amino)-2-oxoethoxy)styryl)-5,5-difluoro-7-(thiophen-2-yl)-5H-dipyrrolo[1,2-c:2',1'-f][1,3,2]diazaborinin-4-ium-5-uide (**371**); (5-(4-(8-oxa-3-azabicyclo[3.2.1]octan-3-yl)-2-(2-oxa-6-azaspiro[3.3]heptan-6-yl)pyrido[2,3-d]pyrimidin-7-yl)-2-methoxyphenyl)methanol (**372**); (5-(4-((3R,5S)-3,5-dimethylmorpholino)-2-(2-oxa-6-azaspiro[3.3]heptan-6-yl)pyrido[2,3-d]pyrimidin-7-yl)-2-methoxyphenyl)methanol (**374**); and (2-methoxy-5-(4-morpholino-2-(2-oxa-6-azaspiro[3.3]heptan-6-yl)pyrido[2,3-d]pyrimidin-7-yl)phenyl)methanol (**375**).

9. The compound according to claim 1 selected from the group consisting of methyl (4-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)phenyl)carbamate (**131**); methyl (4-(4-(8-oxa-3-azabicyclo[3.2.1]octan-3-yl)-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)phenyl)carbamate (**132**); 1-methyl-3-(4-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)phenyl)urea (**141**); 1-(4-(4-(8-oxa-3-azabicyclo[3.2.1]octan-3-yl)-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)phenyl)-3-methylurea (**146**); 5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyridin-2-amine (**215**); 4-methyl-5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyridin-2-amine (**220**); 4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-[2,5'-bipyrimidin]-2'-amine (**253**); 6-morpholino-2-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-[4,5'-bipyrimidin]-2'-amine (**254**); 2-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-[4,5'-bipyrimidin]-2'-amine (**255**); 5-(4-(6-methyl-2,6-diazaspiro[3.3]heptan-2-yl)-6-morpholino-1,3,5-triazin-2-yl)pyrimidin-2-amine (**257**); 1-(6-(4-(2-aminopyrimidin-5-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-

yl)prop-2-en-1-one (**259**); 1-(6-(4-(2-aminopyrimidin-5-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-yl)-2-chloroethanone (**261**); 4-methyl-5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyrimidin-2-amine (**268**); 4-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-(6-methyl-2,6-diazaspiro[3.3]heptan-2-yl)-1,3,5-triazin-2-yl)morpholine (**304**); 2,6-dimethoxy-4-(5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)furan-2-yl)phenol (**351**); (E)-3-((6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diaza-spiro[3.3]heptan-2-yl)sulfonyl)-N,N-dimethylprop-2-en-1-amine (**367**); (5-(4-(8-oxa-3-aza-bicyclo[3.2.1]octan-3-yl)-2-(2-oxa-6-azaspiro[3.3]heptan-6-yl)pyrido[2,3-d]pyrimidin-7-yl)-2-methoxyphenyl)methanol (**372**); (5-(4-((3R,5S)-3,5-dimethylmorpholino)-2-(2-oxa-6-azaspiro[3.3]heptan-6-yl)pyrido[2,3-d]pyrimidin-7-yl)-2-methoxyphenyl)methanol (**374**); and (2-methoxy-5-(4-morpholino-2-(2-oxa-6-azaspiro[3.3]heptan-6-yl)pyrido[2,3-d]-pyrimidin-7-yl)phenyl)methanol (**375**).

10. The compound according to claim 1 selected from the group consisting of 1-ethyl-3-(4-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)phenyl)urea (**151**); 1-(4-(4-(8-oxa-3-azabicyclo[3.2.1]octan-3-yl)-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)phenyl)-3-ethylurea (**155**); 1-ethyl-3-(5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyridin-2-yl)urea (**160**); 1-(5-(4-(8-oxa-3-azabicyclo[3.2.1]octan-3-yl)-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyridin-2-yl)-3-ethylurea (**164**); 1-ethyl-3-(5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyrimidin-2-yl)urea (**169**); 1-(5-(4-(8-oxa-3-azabicyclo[3.2.1]octan-3-yl)-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyrimidin-2-yl)-3-ethylurea (**173**); 1-(4-(4-(dimethylamino)piperidine-1-carbonyl)phenyl)-3-(4-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)phenyl)urea (**196**); 1-(4-(4-(dimethylamino)piperidine-1-carbonyl)phenyl)-3-(5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyridin-2-yl)urea (**200**); 1-(4-(4-(dimethyl-amino)piperidine-1-carbonyl)phenyl)-3-(5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyrimidin-2-yl)urea (**204**); 5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]-heptan-6-yl)-1,3,5-triazin-2-yl)-4-(trifluoromethyl)pyridin-2-amine (**225**); 5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)pyrimidin-2-yl)-4-(trifluoromethyl)pyridin-2-amine (**227**); 5-(6-morpholino-2-(2-oxa-6-azaspiro[3.3]heptan-6-yl)pyrimidin-4-yl)-4-(trifluoromethyl)-pyridin-2-amine (**228**); 5-(2-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)pyrimidin-4-yl)-4-(trifluoromethyl)pyridin-2-amine (**229**); 5-(4-morpholino-6-(2-oxa-6-azaspiro-[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyrimidin-2-amine (**251**); 5-(4-(8-oxa-3-azabicyclo-[3.2.1]octan-3-yl)-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)pyrimidin-2-amine

(**252**); 5-(4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)-4-(trifluoromethyl)pyrimidin-2-amine (**273**); 4-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-4'-(trifluoromethyl)-[2,5'-bipyrimidin]-2'-amine (**276**); 6-morpholino-2-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-4'-(trifluoromethyl)-[4,5'-bipyrimidin]-2'-amine (**277**); 2-morpholino-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-4'-(trifluoromethyl)-[4,5'-bipyrimidin]-2'-amine (**278**); 6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2-oxa-6-azaspiro[3.3]heptane (**299**); 6-(2-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholinopyrimidin-4-yl)-2-oxa-6-azaspiro[3.3]heptane (**300**); 6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholinopyrimidin-2-yl)-2-oxa-6-azaspiro[3.3]heptane (**301**); 6-(6-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-2-morpholinopyrimidin-4-yl)-2-oxa-6-azaspiro[3.3]heptane (**302**); 4-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-(2,6-diazaspiro[3.3]heptan-2-yl)-1,3,5-triazin-2-yl)morpholine (**303**); N-(2-(6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-yl)ethyl)acrylamide (**312**); 2-chloro-N-(2-(6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro-[3.3]heptan-2-yl)ethyl)acetamide (**316**); 1-(6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-yl)prop-2-en-1-one (**317**); 2-chloro-1-(6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-yl)ethanone (**323**); 4-(5-(4-(8-oxa-3-azabicyclo[3.2.1]-octan-3-yl)-6-(2-oxa-6-azaspiro[3.3]heptan-6-yl)-1,3,5-triazin-2-yl)furan-2-yl)-2,6-di-methoxyphenol (**352**); (E)-1-(6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-yl)-4-(dimethylamino)but-2-en-1-one (**368**); and (E)-3-(4-(2-((6-(6-(4-(2-(difluoromethyl)-1H-benzo[d]imidazol-1-yl)-6-morpholino-1,3,5-triazin-2-yl)-2,6-diazaspiro[3.3]heptan-2-yl)-6-oxohexyl)amino)-2-oxoethoxy)styryl)-5,5-difluoro-7-(thiophen-2-yl)-5H-dipyrrolo[1,2-c:2',1'-f][1,3,2]diazaborinin-4-ium-5-uide (**371**).

11. A pharmaceutical composition comprising a compound of formula (I) as claimed in any one of claims 1 to 10 and a pharmaceutically acceptable carrier.

12. An *in vitro* method of inhibiting PI3 kinase activity, comprising contacting a PI3 kinase with an effective inhibitory amount of a compound of formula (I) as claimed in any one of claims 1 to 10.

13. Use of a compound of formula (I) as claimed in any one of claims 1 to 10 in the manufacture of a medicament for preventing or treating a disease or disorder modulated

by PI3 kinases and/or mTOR selected from cancer, neurodegeneration, cardiac hypertrophy, pain, migraine, neurotraumatic diseases, stroke, diabetes, hepatomegaly, cardiovascular disease, Alzheimer's disease, cystic fibrosis, autoimmune diseases, atherosclerosis, restenosis, psoriasis, allergic disorders, inflammation, neurological disorders, a hormone- related disease, conditions associated with organ transplantation, immunodeficiency disorders, destructive bone disorders, proliferative disorders, infectious diseases, conditions associated with cell death, thrombin-induced platelet aggregation, chronic myelogenous leukemia (CML), liver disease, pathologic immune conditions involving T cell activation, and CNS disorders.

14. Use of a compound of formula (I) as claimed in any one of claims 1 to 10, alone or in combination with one or more additional compounds having anti-hyperproliferative properties, in the manufacture of a medicament for preventing or treating cancer.