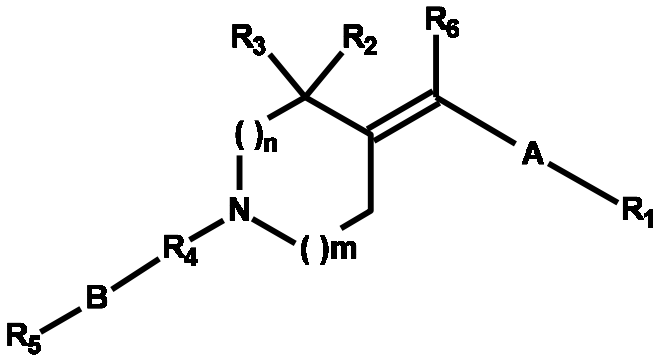
CLAIMS:

1. A compound of formula IA:



formula IA

or an enantiomer, diastereomer, N-oxide, or a pharmaceutically acceptable salt or combinations thereof, wherein:

R_1 is an optionally substituted mono-, bi- or tricyclic C_6-C_{14} aryl group, an optionally substituted mono-, bi- or tricyclic C_1-C_{13} heterocyclic group containing from 1 to 5 heteroatoms selected from N, O and S, an optionally substituted C_3-C_6 cycloalkyl group or an optionally substituted C_3-C_6 cycloalkenyl group;

A is a carbon-carbon triple bond, a carbon-carbon double bond or A represents a five- or six-membered heterocyclic group containing from 1 to 4 heteroatoms selected from N, S and O;

R_2 and R_3 each represent a C_1-C_6 alkyl group or each represent a fluorine atom;

n is 0 or 1, and m is 1;

R_4 is a carbonyl, a thiocarbonyl or a sulphonyl group, or a bond;

B is an oxygen or sulphur atom, a nitrogen atom optionally substituted by a C_1-C_5 alkyl group or a methoxy group, or B is absent;

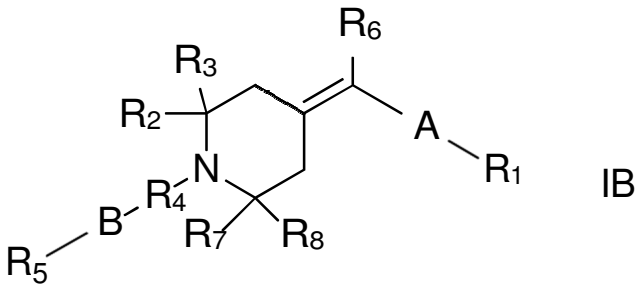
R_5 is an optionally substituted mono-, bi- or tricyclic C_6-C_{14} aryl group, an optionally substituted mono-, bi- or tricyclic C_1-C_{13} heterocyclic group containing from 1 to 5 heteroatoms selected from N, O and S, an optionally substituted C_3-C_6 cycloalkyl group,

an optionally substituted C_3-C_6 cycloalkenyl group or an optionally substituted C_1-C_6 alkyl group; and

R_6 is a hydrogen atom, an optionally substituted C_1-C_4 alkyl group, or a fluorine atom, wherein the optional substituents are each independently selected from the group consisting of halogen atoms, C_1-C_6 alkyl, C_1-C_6 alkoxy, hydroxy, mercapto, nitro, cyano, oxo, halo(C_1-C_6)alkyl, halo(C_1-C_6)alkoxy, C_1-C_6 alkylthio, C_1-C_6 alkylsulphonyl, C_1-C_6 alkylcarbonyl, sulphamoyl, C_1-C_6 alkylsulphamoyl, di(C_1-C_6)alkylsulphamoyl, (C_1-C_6)alkoxycarbonyl and (C_1-C_6)alkylcarbonyl(C_1-C_6)alkyl groups, and from groups of the formulae -NR*R*, -C(=0)-NR*R*, -D, -O-D, -C(=O)-D, - $(CH_2)_q$-D, -NR**-D, -C(=O)-NR**-D, -NR**C(=O)-D and -O-C(=O)-D wherein each R* independently represents a hydrogen atom or a C_1-C_6 alkyl, C_1-C_6 alkoxy, C_1-C_6 alkylcarbonyl, phenyl or benzyl group, R** represents a hydrogen atom or a C_1-C_6 alkyl group, q is an integer from 1 to 6 and D represents a phenyl group or a C_1-C_8 heterocyclic group containing from 1 to 3 heteroatoms selected from N, O and S; a C_1-C_6 cycloalkyl group; each group D being further optionally substituted with from 1 to 3 groups independently selected from halo, hydroxy, cyano, nitro and C_1-C_6 alkyl.

2. A compound according to claim 1 wherein the optional substituents are selected from the groups consisting of halogen atoms and C_1-C_6 alkyl groups; and R_6 is a hydrogen atom, an optionally substituted C_1-C_4 alkyl group or a fluorine atom.

3. A compound of formula IB:



IB

formula IB

or an enantiomer, diastereomer, or a pharmaceutically acceptable salt or combinations thereof, wherein:

R_1 is an optionally substituted mono-, bi- or tricyclic C_6-C_{14} aryl group, an optionally substituted mono-, bi- or tricyclic C_1-C_{13} heterocyclic group containing from 1 to 5 heteroatoms selected from N, O and S, an optionally substituted C_3-C_6 cycloalkyl group or an optionally substituted C_3-C_6 cycloalkenyl group;

A is a carbon-carbon triple bond, a carbon-carbon double bond or A represents a five- or six-membered heterocyclic group containing from 1 to 4 heteroatoms selected from N, S and O;

R_4 is a carbonyl, a thiocarbonyl or a sulphonyl group, or a bond;

B is an oxygen or sulphur atom, a nitrogen atom optionally substituted by a C_1-C_5 alkyl group or a methoxy group, or B is absent;

R_5 is H, an optionally substituted mono-, bi- or tricyclic C_6-C_{14} aryl group, an optionally substituted mono-, bi- or tricyclic C_1-C_{13} heterocyclic group containing from 1 to 5 heteroatoms selected from N, O and S, an optionally substituted C_3-C_6 cycloalkyl group, an optionally substituted C_3-C_6 cycloalkenyl group or an optionally substituted C_1-C_6 alkyl group;

R_6 is a hydrogen atom, an optionally substituted C_1-C_4 alkyl group, or a fluorine atom; and

R_2, R_3, R_7, and R_8 each represent C_1-C_6 alkyl, or R_2 and R_3 each represent hydrogen and R_7 and R_8, together with the carbon atom to which they are attached, form a C_3-C_6 cycloalkyl ring, or R_2, R_3, R_7, and R_8, together with the carbon atoms to which they are attached, form a condensed C_3-C_6 cycloalkyl ring,

wherein the optional substituents are each independently selected from the group consisting of halogen atoms, C_1-C_6 alkyl, C_1-C_6 alkoxy, hydroxy, mercapto, nitro, cyano, oxo, halo(C_1-C_6)alkyl, halo(C_1-C_6)alkoxy, C_1-C_6 alkylthio, C_1-C_6 alkylsulphonyl, C_1-C_6 alkylcarbonyl, sulphamoyl, C_1-C_6 alkylsulphamoyl, di(C_1-C_6)alkylsulphamoyl, (C_1-C_6)alkoxycarbonyl and (C_1-C_6)alkylcarbonyl(C_1-C_6)alkyl groups, and from groups of the formulae -NR*R*, -C(=0)-NR*R*, -D, -O-D, -C(=O)-D, - $(CH_2)_q$-D, -NR**-D, -C(=O)-NR**-D, -NR**C(=O)-D and -O-C(=O)-D wherein each R* independently represents a hydrogen atom or a C_1-C_6 alkyl, C_1-C_6 alkoxy, C_1-C_6 alkylcarbonyl, phenyl or benzyl group, R** represents a hydrogen atom or a C_1-C_6 alkyl group, q is an integer from 1 to 6 and D represents a phenyl group or a C_1-C_8 heterocyclic group containing from 1 to 3 heteroatoms selected from N, O and S; a C_1-C_6 cycloalkyl group; each group D being

further optionally substituted with from 1 to 3 groups independently selected from halo, hydroxy, cyano, nitro and C_1-C_6 alkyl.

4. A compound according to any of claims 1 to 3, wherein R_1 is selected from the group consisting of an optionally substituted phenyl, pyridinyl or pyrimidinyl moiety

5. A compound according to any of claims 1 to 4, wherein A is a carbon-carbon triple bond or A is selected from the group consisting of a 1,3-oxazolyl, isoxazolyl, 1,2,4-oxadiazolyl, 1,3,4-oxadiazolyl or pyrazolyl moiety.

6. A compound according to any of claims 1 to 5, wherein R_5 is selected from the group consisting of an optionally substituted methyl, ethyl, propyl, iso-propyl, tertiary-butyl, methoxyethyl, N,N-dimethyl, N-methoxy-N-methyl, N,N-diethyl, N-ethyl-N-isopropyl, cyclohexyl, benzotriazolyl, furanyl, isoxazolyl, morpholinyl, oxazolyl, phenyl, piperidinyl, pyranyl, pyrazolyl, pyridinyl, pyrimidinyl, pyrrolidinyl, triazinyl or triazolyl moiety.

7. A compound according to any of claims 1 to 5, wherein R_4 is a carbonyl or sulphonyl group, B is absent and R_5 is an optionally substituted bicyclic C_1-C_{13} heterocyclic group containing from 1 to 5 heteroatoms selected from N, O and S.

8. A compound according to any of claims 1 to 5, wherein B is an oxygen or nitrogen atom optionally substituted by a C_1-C_5 alkyl group or a methoxy group and R_5 is selected from the group consisting of an optionally substituted methyl, ethyl, propyl, iso-propyl, tertiary-butyl or methoxyethyl moiety.

9. A compound according to claim 1, the compound being selected from the group consisting of:
tert-butyl (4E)-3,3-dimethyl-4-[3-(6-methylpyridin-2-yl)prop-2-yn-1-ylidene]piperidine-1-carboxylate;
tert-butyl (4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidine-1-carboxylate;

ethyl (4E)-3,3-dimethyl-4-[3-(6-methylpyridin-2-yl)prop-2-yn-1-ylidene]piperidine-1-carboxylate;

ethyl (4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidine-1-carboxylate;

tert-butyl (4E)-4-[3-(2-chloropyridin-4-yl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidine-1-carboxylate;

tert-butyl (4E)-3,3-dimethyl-4-[3-(3-methylphenyl)prop-2-yn-1-ylidene]piperidine-1-carboxylate;

tert-butyl (4E)-3,3-difluoro-4-[3-(6-methylpyridin-2-yl)prop-2-yn-1-ylidene]piperidine-1-carboxylate;

tert-butyl (4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-difluoropiperidine-1-carboxylate;

tert-butyl (4E)-4-[3-(4-chloropyridin-2-yl)prop-2-yn-1-ylidene]-3,3-difluoropiperidine-1-carboxylate;

tert-butyl (4E)-3,3-difluoro-4-[3-(3-methylphenyl)prop-2-yn-1-ylidene]piperidine-1-carboxylate;

ethyl (4E)-3,3-difluoro-4-[3-(6-methylpyridin-2-yl)prop-2-yn-1-ylidene]piperidine-1-carboxylate;

ethyl (4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-difluoropiperidine-1-carboxylate;

ethyl (4E)-4-[3-(4-chloropyridin-2-yl)prop-2-yn-1-ylidene]-3,3-difluoropiperidine-1-carboxylate;

ethyl (4E)-3,3-difluoro-4-[3-(3-methylphenyl)prop-2-yn-1-ylidene]piperidine-1-carboxylate;

ethyl (4E)-4-[3-(2-chloropyridin-4-yl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidine-1-carboxylate;

ethyl (4E)-3,3-dimethyl-4-[3-(3-methylphenyl)prop-2-yn-1-ylidene]piperidine-1-carboxylate;

ethyl (4E)-3,3-dimethyl-4-(3-phenylprop-2-yn-1-ylidene)piperidine-1-carboxylate;

ethyl (4E)-4-[3-(4-chloropyridin-2-yl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidine-1-carboxylate;

ethyl (4E)-4-[3-(2,5-difluorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidine-1-carboxylate;

ethyl (4E)-3,3-dimethyl-4-{3-[6-(trifluoromethyl)pyridin-2-yl]prop-2-yn-1-ylidene}piperidine-1-carboxylate;

ethyl (4E)-4-[3-(3-fluorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidine-1-carboxylate;

ethyl (4E)-3,3-dimethyl-4-{3-[3-(trifluoromethyl)phenyl]prop-2-yn-1-ylidene}piperidine-1-carboxylate;

ethyl (4E)-4-[3-(6-methoxypyridin-2-yl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidine-1-carboxylate;

ethyl (4E)-4-[3-(3-methoxyphenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidine-1-carboxylate;

ethyl (4E)-4-[3-(4-methoxypyridin-2-yl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidine-1-carboxylate;

ethyl (4E)-3,3-dimethyl-4-[3-(pyridin-2-yl)prop-2-yn-1-ylidene]piperidine-1-carboxylate;

ethyl (4E)-4-[3-(3-cyanophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidine-1-carboxylate;

ethyl (4E)-4-{3-[3-(cyanomethyl)phenyl]prop-2-yn-1-ylidene}-3,3-dimethylpiperidine-1-carboxylate;

ethyl (4E)-4-[3-(6-methoxypyridin-3-yl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidine-1-carboxylate;

ethyl (4E)-3,3-dimethyl-4-{3-[6-(methylamino)pyridin-2-yl]prop-2-yn-1-ylidene}piperidine-1-carboxylate;

ethyl (4E)-4-[3-(4-cyanopyridin-2-yl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidine-1-carboxylate;

ethyl (4E)-4-[3-(3-cyano-5-fluorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidine-1-carboxylate;

2-{(4E)-3,3-dimethyl-4-[3-(6-methylpyridin-2-yl)prop-2-yn-1-ylidene]piperidin-1-yl}-6-methyl-3-nitropyridine;

(3-chlorophenyl){(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}methanone;

{(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}(piperidin-1-yl)methanone;
{(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}(pyrrolidin-1-yl)methanone;
(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-N,N,3,3-tetramethylpiperidine-1-carboxamide;
(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-N,N-diethyl-3,3-dimethylpiperidine-1-carboxamide;
{(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}(furan-2-yl)methanone;
methyl (4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidine-1-carboxylate;
{(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}(morpholin-4-yl)methanone;
(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-N-methoxy-N,3,3-trimethylpiperidine-1-carboxamide;
{(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}(3-methylphenyl)methanone;
2-{(3E)-3-[1-(3-chlorobenzoyl)-3,3-dimethylpiperidin-4-ylidene]prop-1-yn-1-yl}pyridine-4-carbonitrile;
(3-chlorophenyl){(4E)-3,3-dimethyl-4-[3-(3-methylphenyl)prop-2-yn-1-ylidene]piperidin-1-yl}methanone;
(2,5-dimethylfuran-3-yl)[(4E)-4-{3-[3-(hydroxymethyl)phenyl]prop-2-yn-1-ylidene}-3,3-dimethylpiperidin-1-yl]methanone;
[(4E)-3,3-dimethyl-4-(3-{3-[(pyrrolidin-1-yl)methyl]phenyl}prop-2-yn-1-ylidene)piperidin-1-yl](5-methylfuran-2-yl)methanone;
ethyl (3E)-2,2-dimethyl-3-[3-(6-methylpyridin-2-yl)prop-2-yn-1-ylidene]pyrrolidine-1-carboxylate;
tert-butyl (3E)-2,2-dimethyl-3-[3-(6-methylpyridin-2-yl)prop-2-yn-1-ylidene]pyrrolidine-1-carboxylate;
propyl (3E)-2,2-dimethyl-3-[3-(6-methylpyridin-2-yl)prop-2-yn-1-ylidene]pyrrolidine-1-carboxylate;

2-methoxyethyl (3E)-2,2-dimethyl-3-[3-(6-methylpyridin-2-yl)prop-2-yn-1-ylidene]pyrrolidine-1-carboxylate;
2-methylpropyl (3E)-2,2-dimethyl-3-[3-(6-methylpyridin-2-yl)prop-2-yn-1-ylidene]pyrrolidine-1-carboxylate;
propan-2-yl (3E)-2,2-dimethyl-3-[3-(6-methylpyridin-2-yl)prop-2-yn-1-ylidene]pyrrolidine-1-carboxylate;
(3E)-N,N,2,2-tetramethyl-3-[3-(6-methylpyridin-2-yl)prop-2-yn-1-ylidene]pyrrolidine-1-carboxamide;
{(3E)-2,2-dimethyl-3-[3-(6-methylpyridin-2-yl)prop-2-yn-1-ylidene]pyrrolidin-1-yl}(furan-2-yl)methanone;
(3-chlorophenyl){(3E)-2,2-dimethyl-3-[3-(6-methylpyridin-2-yl)prop-2-yn-1-ylidene]pyrrolidin-1-yl}methanone;
{(3E)-2,2-dimethyl-3-[3-(6-methylpyridin-2-yl)prop-2-yn-1-ylidene]pyrrolidin-1-yl}(piperidin-1-yl)methanone;
{(3E)-2,2-dimethyl-3-[3-(6-methylpyridin-2-yl)prop-2-yn-1-ylidene]pyrrolidin-1-yl}(pyrrolidin-1-yl)methanone;
methyl (3E)-2,2-dimethyl-3-[3-(6-methylpyridin-2-yl)prop-2-yn-1-ylidene]pyrrolidine-1-carboxylate;
tert-butyl (3E)-2,2-dimethyl-3-[3-(4-methylpyrimidin-2-yl)prop-2-yn-1-ylidene]pyrrolidine-1-carboxylate;
ethyl (3E)-2,2-dimethyl-3-[3-(4-methylpyrimidin-2-yl)prop-2-yn-1-ylidene]pyrrolidine-1-carboxylate;
2-methoxyethyl (3E)-2,2-dimethyl-3-[3-(4-methylpyrimidin-2-yl)prop-2-yn-1-ylidene]pyrrolidine-1-carboxylate;
propan-2-yl (3E)-2,2-dimethyl-3-[3-(4-methylpyrimidin-2-yl)prop-2-yn-1-ylidene]pyrrolidine-1-carboxylate;
methyl (3E)-2,2-dimethyl-3-[3-(4-methylpyrimidin-2-yl)prop-2-yn-1-ylidene]pyrrolidine-1-carboxylate;
tert-butyl (3E)-2,2-dimethyl-3-{3-[6-(methylamino)pyridin-2-yl]prop-2-yn-1-ylidene}pyrrolidine-1-carboxylate;
ethyl (3E)-2,2-dimethyl-3-{3-[6-(methylamino)pyridin-2-yl]prop-2-yn-1-ylidene}pyrrolidine-1-carboxylate;

propyl (3E)-2,2-dimethyl-3-{3-[6-(methylamino)pyridin-2-yl]prop-2-yn-1-ylidene}pyrrolidine-1-carboxylate;
2-methoxyethyl (3E)-2,2-dimethyl-3-{3-[6-(methylamino)pyridin-2-yl]prop-2-yn-1-ylidene}pyrrolidine-1-carboxylate;
2-methylpropyl (3E)-2,2-dimethyl-3-{3-[6-(methylamino)pyridin-2-yl]prop-2-yn-1-ylidene}pyrrolidine-1-carboxylate;
propan-2-yl (3E)-2,2-dimethyl-3-{3-[6-(methylamino)pyridin-2-yl]prop-2-yn-1-ylidene}pyrrolidine-1-carboxylate;
methyl (3E)-2,2-dimethyl-3-{3-[6-(methylamino)pyridin-2-yl]prop-2-yn-1-ylidene}pyrrolidine-1-carboxylate;
tert-butyl (3E)-3-[3-(4-cyanopyridin-2-yl)prop-2-yn-1-ylidene]-2,2-dimethylpyrrolidine-1-carboxylate;
ethyl (3E)-3-[3-(4-cyanopyridin-2-yl)prop-2-yn-1-ylidene]-2,2-dimethylpyrrolidine-1-carboxylate;
2-methoxyethyl (3E)-3-[3-(4-cyanopyridin-2-yl)prop-2-yn-1-ylidene]-2,2-dimethylpyrrolidine-1-carboxylate;
2-methylpropyl (3E)-3-[3-(4-cyanopyridin-2-yl)prop-2-yn-1-ylidene]-2,2-dimethylpyrrolidine-1-carboxylate;
propan-2-yl (3E)-3-[3-(4-cyanopyridin-2-yl)prop-2-yn-1-ylidene]-2,2-dimethylpyrrolidine-1-carboxylate;
methyl (3E)-3-[3-(4-cyanopyridin-2-yl)prop-2-yn-1-ylidene]-2,2-dimethylpyrrolidine-1-carboxylate;
tert-butyl (3E)-3-[3-(3-cyano-5-fluorophenyl)prop-2-yn-1-ylidene]-2,2-dimethylpyrrolidine-1-carboxylate;
ethyl (3E)-3-[3-(3-cyano-5-fluorophenyl)prop-2-yn-1-ylidene]-2,2-dimethylpyrrolidine-1-carboxylate;
propyl (3E)-3-[3-(3-cyano-5-fluorophenyl)prop-2-yn-1-ylidene]-2,2-dimethylpyrrolidine-1-carboxylate;
2-methoxyethyl (3E)-3-[3-(3-cyano-5-fluorophenyl)prop-2-yn-1-ylidene]-2,2-dimethylpyrrolidine-1-carboxylate;
2-methylpropyl (3E)-3-[3-(3-cyano-5-fluorophenyl)prop-2-yn-1-ylidene]-2,2-dimethylpyrrolidine-1-carboxylate;

propan-2-yl (3E)-3-[3-(3-cyano-5-fluorophenyl)prop-2-yn-1-ylidene]-2,2-dimethylpyrrolidine-1-carboxylate;
methyl (3E)-3-[3-(3-cyano-5-fluorophenyl)prop-2-yn-1-ylidene]-2,2-dimethylpyrrolidine-1-carboxylate;
tert-butyl (3E)-3-[3-(4-chloropyridin-2-yl)prop-2-yn-1-ylidene]-2,2-dimethylpyrrolidine-1-carboxylate;
{(3E)-3-[3-(4-chloropyridin-2-yl)prop-2-yn-1-ylidene]-2,2-dimethylpyrrolidin-1-yl}(furan-2-yl)methanone;
(3E)-3-[3-(4-chloropyridin-2-yl)prop-2-yn-1-ylidene]-N,N-diethyl-2,2-dimethylpyrrolidine-1-carboxamide;
{(3E)-3-[3-(4-chloropyridin-2-yl)prop-2-yn-1-ylidene]-2,2-dimethylpyrrolidin-1-yl}(pyrrolidin-1-yl)methanone;
{(3E)-3-[3-(4-chloropyridin-2-yl)prop-2-yn-1-ylidene]-2,2-dimethylpyrrolidin-1-yl}(piperidin-1-yl)methanone;
(3E)-3-[3-(4-chloropyridin-2-yl)prop-2-yn-1-ylidene]-N,N,2,2-tetramethylpyrrolidine-1-carboxamide;
ethyl (3E)-3-[3-(4-chloropyridin-2-yl)prop-2-yn-1-ylidene]-2,2-dimethylpyrrolidine-1-carboxylate;
methyl (3E)-3-[3-(4-chloropyridin-2-yl)prop-2-yn-1-ylidene]-2,2-dimethylpyrrolidine-1-carboxylate;
(3-chlorophenyl){(3E)-3-[3-(4-chloropyridin-2-yl)prop-2-yn-1-ylidene]-2,2-dimethylpyrrolidin-1-yl}methanone;
ethyl (3E)-3-[3-(6-aminopyridin-2-yl)prop-2-yn-1-ylidene]-2,2-dimethylpyrrolidine-1-carboxylate;
(3E)-3-[3-(6-aminopyridin-2-yl)prop-2-yn-1-ylidene]-N,N-diethyl-2,2-dimethylpyrrolidine-1-carboxamide;
methyl (3E)-3-[3-(6-aminopyridin-2-yl)prop-2-yn-1-ylidene]-2,2-dimethylpyrrolidine-1-carboxylate;
(3E)-3-[3-(6-aminopyridin-2-yl)prop-2-yn-1-ylidene]-N,N,2,2-tetramethylpyrrolidine-1-carboxamide;
tert-butyl (3E)-3-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-2,2-dimethylpyrrolidine-1-carboxylate;

{(3E)-3-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-2,2-dimethylpyrrolidin-1-yl}(piperidin-1-yl)methanone;
{(3E)-3-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-2,2-dimethylpyrrolidin-1-yl}(pyrrolidin-1-yl)methanone;
ethyl (3E)-3-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-2,2-dimethylpyrrolidine-1-carboxylate;
(3E)-3-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-N-ethyl-2,2-dimethyl-N-(propan-2-yl)pyrrolidine-1-carboxamide;
(3E)-3-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-N,N,2,2-tetramethylpyrrolidine-1-carboxamide;
{(3E)-3-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-2,2-dimethylpyrrolidin-1-yl}(furan-2-yl)methanone;
methyl (3E)-3-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-2,2-dimethylpyrrolidine-1-carboxylate;
(3-chlorophenyl){(3E)-3-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-2,2-dimethylpyrrolidin-1-yl}methanone;
(3-chlorophenyl)[(4E)-4-{[5-(3-chlorophenyl)-1H-pyrazol-3-yl]methylidene}-3,3-dimethylpiperidin-1-yl]methanone;
3-{(3E)-3-[1-(3-chlorobenzoyl)-3,3-dimethylpiperidin-4-ylidene]prop-1-yn-1-yl}benzonitrile;
3-{(3E)-3-[1-(3-chlorobenzoyl)-3,3-dimethylpiperidin-4-ylidene]prop-1-yn-1-yl}-5-fluorobenzonitrile;
(3-chlorophenyl){(4E)-4-[3-(3-methoxyphenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}methanone;
(3-chlorophenyl)[(4E)-4-{3-[3-(hydroxymethyl)phenyl]prop-2-yn-1-ylidene}-3,3-dimethylpiperidin-1-yl]methanone;
(3-chlorophenyl){(4E)-4-[3-(4-fluorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}methanone;
(3-chlorophenyl)[(4E)-3,3-dimethyl-4-(3-{3-[(pyrrolidin-1-yl)methyl]phenyl}prop-2-yn-1-ylidene)piperidin-1-yl]methanone;
(3-chlorophenyl){(4E)-3,3-dimethyl-4-[3-(6-methylpyridin-2-yl)prop-2-yn-1-ylidene]piperidin-1-yl}methanone;

5-{(3E)-3-[1-(3-chlorobenzoyl)-3,3-dimethylpiperidin-4-ylidene]prop-1-yn-1-yl}pyridine-2-carbonitrile;
(3-chlorophenyl){(4E)-4-[3-(6-methoxypyridin-3-yl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}methanone;
(3-chlorophenyl){(4E)-4-[3-(3-fluoro-5-hydroxyphenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}methanone;
{(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}(3-hydroxyphenyl)methanone;
{(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}(4-methoxypyridin-2-yl)methanone;
{(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}(6-methylpyridin-2-yl)methanone;
(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethyl-N-(6-methylpyridin-2-yl)piperidine-1-carboxamide;
{(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}(2,2-dimethylmorpholin-4-yl)methanone;
(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-N-(2,2-dimethyltetrahydro-2H-pyran-4-yl)-3,3-dimethylpiperidine-1-carboxamide;
(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethyl-N-(pyridin-2-yl)piperidine-1-carboxamide;
2-({(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}carbonyl)pyridine-4-carbonitrile;
1-{(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}-2-(2,2-dimethyltetrahydro-2H-pyran-4-yl)ethanone;
{(4E)-4-[3-(3-Chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}(4-chloropyridin-2-yl)methanone;
{(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}(4,5-dimethylfuran-2-yl)methanone;
{(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}(3-methoxyphenyl)methanone;
3-({(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}carbonyl)benzonitrile;

(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-N-(4-chloropyridin-2-yl)-3,3-dimethylpiperidine-1-carboxamide;
2,2-dimethylpropyl (4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidine-1-carboxylate;
(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethyl-N-(3-methylphenyl)piperidine-1-carboxamide;
2-methylpyridin-4-yl (4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidine-1-carboxylate;
(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-N-(2,2-dimethylpropyl)-3,3-dimethylpiperidine-1-carboxamide;
{(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}(4-hydroxypiperidin-1-yl)methanone;
ethyl 4-({(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}sulfonyl)piperidine-1-carboxylate;
(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethyl-1-[(tetrahydro-2H-pyran-2-ylmethyl)sulfonyl]piperidine;
5-({(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}sulfonyl)-3-ethyl[1,2]oxazolo[5,4-b]pyridine;
(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethyl-1-{[(3-methyl-1,2-oxazol-5-yl)methyl]sulfonyl}piperidine;
(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-N,3,3-trimethyl-N-(propan-2-yl)piperidine-1-sulfonamide;
4-({(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}sulfonyl)-2,6-dimethylmorpholine;
(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethyl-1-(phenylsulfonyl)piperidine;
(4E)-N-tert-butyl-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidine-1-sulfonamide;
4-({(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}sulfonyl)morpholine;
4-({(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}sulfonyl)-1-methyl-1H-benzotriazole;

3-({(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}sulfonyl)-5-(propan-2-yloxy)pyridine;
(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-N-(cyclopropylmethyl)-N,3,3-trimethylpiperidine-1-sulfonamide;
5-({(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}sulfonyl)-2-methoxypyridine;
3-({(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}sulfonyl)-6,7-dihydro-5H-pyrazolo[5,1-b][1,3]oxazine;
(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-N-cyclohexyl-N,3,3-trimethylpiperidine-1-sulfonamide;
(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethyl-1-[(4-methylpiperidin-1-yl)sulfonyl]piperidine;
(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-1-[(2,2-dimethylpropyl)sulfonyl]-3,3-dimethylpiperidine;
(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethyl-1-[(tetrahydro-2H-pyran-3-ylmethyl)sulfonyl]piperidine;
(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-1-[(3,5-dimethyl-1,2-oxazol-4-yl)sulfonyl]-3,3-dimethylpiperidine;
6-({(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}sulfonyl)pyrazolo[1,5-a]pyrimidine-3-carbonitrile;
(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-1-[(1-ethyl-3,5-dimethyl-1H-pyrazol-4-yl)sulfonyl]-3,3-dimethylpiperidine;
{(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}(4,6-dimethoxypyrimidin-2-yl)methanone;
{(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}(2-ethyl-5-methyl-2H-1,2,3-triazol-4-yl)methanone;
{(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}(4-methoxypyrimidin-2-yl)methanone;
{(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}(6,7-dihydro-5H-pyrazolo[5,1-b][1,3]oxazin-3-yl)methanone;
{(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}([1,2,4]triazolo[1,5-a]pyridin-2-yl)methanone;

{(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}(2,6-dimethoxypyrimidin-4-yl)methanone;
4-({(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}carbonyl)pyridine-2-carbonitrile;
{(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}(1,5-dimethyl-1H-1,2,3-triazol-4-yl)methanone;
{(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}(5,6-dihydro-8H-imidazo[2,1-c][1,4]oxazin-3-yl)methanone;
6-({(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}carbonyl)pyridine-2-carbonitrile;
{(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}(3-methoxy-1-methyl-1H-pyrazol-5-yl)methanone;
(3-chlorophenyl){(4E)-4-[3-(4-methoxypyridin-2-yl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}methanone;
(3-chlorophenyl)[(4E)-4-{3-[5-(hydroxymethyl)furan-2-yl]prop-2-yn-1-ylidene}-3,3-dimethylpiperidin-1-yl]methanone;
(3-chlorophenyl)[(4E)-4-({3-[3-(hydroxymethyl)phenyl]-1H-pyrazol-5-yl}methylidene)-3,3-dimethylpiperidin-1-yl]methanone;
3-(5-{(E)-[1-(3-chlorobenzoyl)-3,3-dimethylpiperidin-4-ylidene]methyl}-1H-pyrazol-3-yl)benzonitrile;
(3-chlorophenyl)[(4E)-3,3-dimethyl-4-{[3-(6-methylpyridin-2-yl)-1H-pyrazol-5-yl]methylidene}piperidin-1-yl]methanone;
[(4E)-4-{[5-(3-chlorophenyl)-1H-pyrazol-3-yl]methylidene}-3,3-dimethylpiperidin-1-yl](2,5-dimethylfuran-3-yl)methanone;
(3-chlorophenyl){(4E)-3,3-dimethyl-4-[(5-phenyl-1,2-oxazol-3-yl)methylidene]piperidin-1-yl}methanone;
(3-chlorophenyl)[(4E)-4-{[5-(3-chlorophenyl)-1,3-oxazol-2-yl]methylidene}-3,3-dimethylpiperidin-1-yl]methanone;
(3-chlorophenyl)[(4E)-4-{[5-(3-chlorophenyl)-1,2,4-oxadiazol-3-yl]methylidene}-3,3-dimethylpiperidin-1-yl]methanone;
(3-chlorophenyl)[(4E)-4-{[5-(3-chlorophenyl)-1,3,4-oxadiazol-2-yl]methylidene}-3,3-dimethylpiperidin-1-yl]methanone;

(3-chlorophenyl)[(4E)-4-(3-cyclohexylprop-2-yn-1-ylidene)-3,3-dimethylpiperidin-1-yl]methanone;
(3-chlorophenyl){(4E)-4-[3-(4-chloropyridin-2-yl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}methanone;
(3-chlorophenyl)[(4E)-3,3-dimethyl-4-{3-[6-(trifluoromethyl)pyridin-2-yl]prop-2-yn-1-ylidene}piperidin-1-yl]methanone;
(3-chlorophenyl){(4E)-4-[3-(6-methoxypyridin-2-yl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}methanone;
(3-chlorophenyl){(4E)-4-[3-(3-hydroxyphenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}methanone;
[(4E)-3,3-dimethyl-4-(3-phenylprop-2-yn-1-ylidene)piperidin-1-yl](phenyl)methanone;
3-[(3E)-3-{1-[(2,5-dimethylfuran-3-yl)carbonyl]-3,3-dimethylpiperidin-4-ylidene}prop-1-yn-1-yl]benzonitrile;
{(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-dimethylpiperidin-1-yl}(phenyl)methanone;
3-{(3E)-3-[3,3-dimethyl-1-(3-methylbenzoyl)piperidin-4-ylidene]prop-1-yn-1-yl}benzonitrile;
3-{(3E)-3-[1-(3-methoxybenzoyl)-3,3-dimethylpiperidin-4-ylidene]prop-1-yn-1-yl}benzonitrile;
(4E)-4-{3-[3-(hydroxymethyl)phenyl]prop-2-yn-1-ylidene}-3,3-dimethyl-N-(6-methylpyridin-2-yl)piperidine-1-carboxamide;
(3-chlorophenyl){(4E)-4-[4-(3-chlorophenyl)but-3-yn-2-ylidene]-3,3-difluoropiperidin-1-yl}methanone;
(3-chlorophenyl){(4Z)-4-[4-(3-chlorophenyl)but-3-yn-2-ylidene]-3,3-difluoropiperidin-1-yl}methanone;
3-[(3E)-3-{1-[(2,5-dimethylfuran-3-yl)carbonyl]-3,3-dimethylpiperidin-4-ylidene}prop-1-yn-1-yl]-5-fluorobenzonitrile;
(3-chlorophenyl){(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-difluoropiperidin-1-yl}methanone;
{(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-difluoropiperidin-1-yl}(4-methoxypyridin-2-yl)methanone;

(3-chlorophenyl){(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-difluoropiperidin-1-yl}methanone; and
{(4E)-4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-3,3-difluoropiperidin-1-yl}(4-methoxypyridin-2-yl)methanone.

10. A compound according to claim 3, the compound being selected from the group consisting of:
ethyl 2,2,6,6-tetramethyl-4-[3-(6-methylpyridin-2-yl)prop-2-yn-1-ylidene]piperidine-1-carboxylate ;
2-methyl-6-[3-(2,2,6,6-tetramethylpiperidin-4-ylidene)prop-1-yn-1-yl]pyridine;
tert-butyl 8-[3-(6-methylpyridin-2-yl)prop-2-yn-1-ylidene]-5-azaspiro[3.5]nonane-5-carboxylate ;
methyl 8-[3-(6-methylpyridin-2-yl)prop-2-yn-1-ylidene]-5-azaspiro[3.5]nonane-5-carboxylate (E:Z mixture);
4-[3-(3-chlorophenyl)prop-2-yn-1-ylidene]-1,2,2,6,6-pentamethylpiperidine;
2-methyl-6-[3-(1,2,2,6,6-pentamethylpiperidin-4-ylidene)prop-1-yn-1-yl]pyridine;
ethyl 3-[3-(6-methylpyridin-2-yl)prop-2-yn-1-ylidene]-8-azabicyclo[3.2.1]octane-8-carboxylate; and
8-(6-methyl-3-nitropyridin-2-yl)-3-[3-(6-methylpyridin-2-yl)prop-2-yn-1-ylidene]-8-azabicyclo[3.2.1]octane.

11. A pharmaceutical composition comprising a compound according to any of claims 1 to 10 and a pharmaceutically acceptable carrier or diluent.

12. A method for the treatment or prevention of a neurological or psychiatric disorder associated with glutamate dysfunction comprising administering to a subject in need of treatment an effective amount of a compound according to any of claims 1 to 10, or a composition according to claim 11.

13. Use of a compound according to any of claims 1 to 10, or a composition according to claim 11, for the manufacture of a medicament for the treatment or prevention of a neurological or psychiatric disorder associated with glutamate dysfunction.

14. The method according to claim 12, or the use according to claim 13, wherein the disorder is selected from the group consisting of schizophrenia, cognitive decline, dementia, cognitive impairment, Fragile-X syndrome, Rett syndrome, Parkinson's disease, Phelan-McDermid syndrome and tuberous sclerosis.

15. The method or use according to any of claims 12 to 14, wherein the disorder is treatable or preventable by positive allosteric modulation (PAM) or by negative allosteric modulation (NAM) of mGluR5.

16. A method for the treatment or prevention of a neurological or psychiatric disorder associated with glutamate dysfunction comprising administering to a subject in need of treatment an effective amount of a compound according to any of claims 1 to 10, or a composition according to claim 11, wherein the disorder is treatable or preventable by positive allosteric modulation (PAM) or by negative allosteric modulation (NAM) of mGluR5.

17. Use of a compound according to any of claims 1 to 10, or a composition according to claim 11, for the manufacture of a medicament for the treatment or prevention of a neurological or psychiatric disorder associated with glutamate dysfunction, wherein the disorder is treatable or preventable by positive allosteric modulation (PAM) or by negative allosteric modulation (NAM) of mGluR5.