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71	FULL NAME(S) OF APPLICANT(S)

Aventis Pharma S.A.

72	FULL NAME(S) OF INVENTOR(S)

MALLERON, Jean-Luc
CARRY, Jean-Christophe
EL AHMAD, Youssef
VIVIANI, Fabrice

TABART, Michel
EVERS, Michel
MIGNANI, Serge
CHEVÉ, Michel

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54	TITLE OF INVENTION

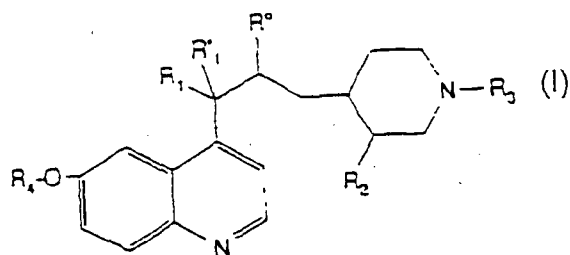
Quinolyl propyl piperidine derivatives and their use as antibacterial agents

57	ABSTRACT (NOT MORE THAN 150 WORDS)

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The sheet(s) containing the abstract is/are attached.

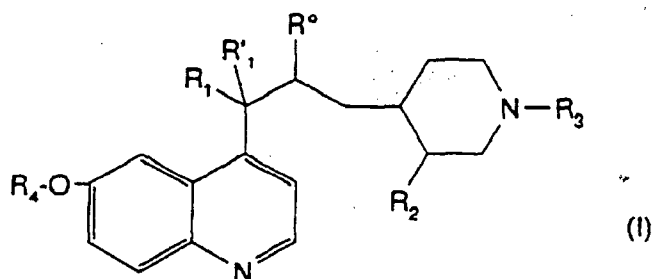
If no classification is furnished, Form P.9 should accompany this form.
The figure of the drawing to which the abstract refers is attached.



Abstract: The invention concerns a quinolyl propyl piperidine derivative of general formula (I) wherein: R_1 is a hydrogen or halogen atom, or a hydroxy radical; R'_1 is a hydrogen atom, or may represent halogen when R_1 is also a halogen atom; and R_2 is a hydrogen atom. Said derivatives are antimicrobial agents.

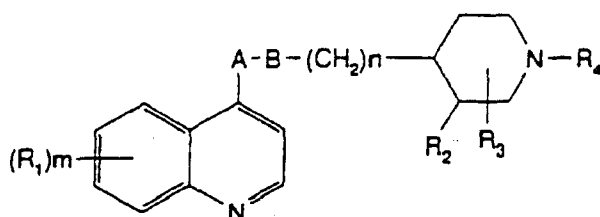
QUINOLYLPROPYLPYPERIDINE DERIVATIVES, THEIR PREPARATION
AND THE COMPOSITIONS WHICH COMPRISE THEM

The present invention relates to
5 quinolylpropylpiperidine derivatives of general
formula:



which are active as antimicrobials. The invention also
relates to their preparation and to the compositions
10 comprising them.

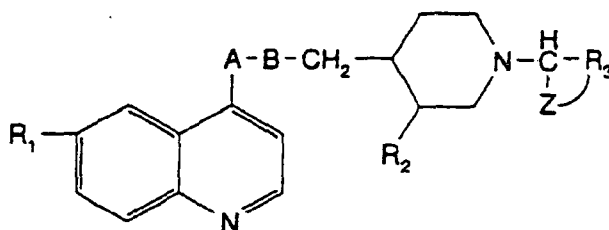
Patent Application WO 99/37635 has disclosed
antimicrobial quinolylpropylpiperidine derivatives of
general formula:



15 in which the R₁ radical is in particular (C1-6)alkoxy,
R₂ is hydrogen, R₃ is in the 2- or 3-position and
represents (C1-6)alkyl which can optionally be
substituted by 1 to 3 substituents chosen from thiol,
halogen, alkylthio, trifluoromethyl, alkyloxycarbonyl,
20 alkylcarbonyl, alkenyloxycarbonyl, alkenylcarbonyl,

hydroxyl optionally substituted by alkyl, and the like,
 R_4 is a $-\text{CH}_2-\text{R}_5$ group in which R_5 is selected from alkyl,
 hydroxyalkyl, alkenyl, alkynyl, tetrahydrofuryl,
 optionally substituted phenylalkyl, optionally
 5 substituted phenylalkenyl, optionally substituted
 heteroarylalkyl, optionally substituted heteroaroyl,
 and the like, n is 0 to 2, m is 1 or 2 and A and B are
 in particular oxygen, sulfur, sulfinyl, sulfonyl or
 CR_6R_7 in which R_6 and R_7 represent H, thiol, alkylthio,
 10 halo, trifluoromethyl, alkenyl, alkenylcarbonyl,
 hydroxyl, amino, and the like.

European Patent Application EP30044 has
 disclosed quinoline derivatives, of use as
 cardiovasculars, corresponding to the general formula:



15

in which R_1 is in particular alkyloxy, A-B is $-\text{CH}_2-\text{CH}_2-$,
 $-\text{CHOH}-\text{CH}_2-$, $-\text{CH}_2-\text{CHOH}-$, $-\text{CH}_2\text{CO}-$ or $-\text{CO}-\text{CH}_2-$, R_1 is H, OH
 or alkyloxy, R_2 is ethyl or vinyl, R_3 is in particular
 alkyl, hydroxyalkyl, cycloalkyl, hydroxyl, alkenyl,
 20 alkynyl, tetrahydrofuryl, phenylalkyl, optionally
 substituted diphenylalkyl, optionally substituted
 phenylalkenyl, optionally substituted benzoyl or
 benzoylalkyl, or optionally substituted heteroaryl or
 heteroarylalkyl, and Z is H or alkyl or forms, with R_3 ,
 25 a cycloalkyl radical.

It has now been found, and it is this which forms the subject matter of the present invention, that the products of general formula (I) in which:

- 5 R_1 is a hydrogen or halogen atom or a hydroxyl radical,
 R'_1 is a hydrogen atom or can represent halogen when R_1
is also a halogen atom, and
 R^0 is a hydrogen atom, or else
- 10 R_1 and R^0 together form a bond and
 R'_1 is a hydrogen atom,
- R_2 represents a carboxyl, carboxymethyl or 2-carboxy-ethyl radical, and
- 15 R_3 represents an alkyl radical (1 to 6 carbon atoms)
substituted by 1 to 3 substituents chosen from
hydroxyl, halogen, oxo, carboxyl, alkyloxycarbonyl,
alkyloxy or alkylthio or from a phenyl, phenylthio or
phenylalkylthio radical, which can themselves carry 1
20 to 4 substituents [chosen from halogen, hydroxyl,
alkyl, alkyloxy, trifluoromethyl, trifluoromethoxy,
carboxyl, alkyloxycarbonyl, cyano, acetamido (1 to 4C)
or amino], or from a cycloalkyl or cycloalkylthio
radical, the cyclic part of which comprises 3 to 7
25 members, or from a 5- to 6-membered aromatic
heterocyclyl or heterocyclylthio radical comprising 1
to 4 heteroatoms chosen from nitrogen, oxygen or sulfur
and optionally themselves substituted [by halogen,

hydroxyl, alkyl, alkyloxy, trifluoromethyl,
trifluoromethoxy, oxo, carboxyl, alkyloxycarbonyl,
cyano or amino], or R_3 represents a propargyl radical
substituted by a phenyl radical which can itself carry
5 1 to 3 substituents [chosen from halogen, hydroxyl,
alkyl, alkyloxy, trifluoromethyl, trifluoromethoxy,
carboxyl, alkyloxycarbonyl, cyano or amino] or
substituted by a cycloalkyl radical comprising 3 to 7
members or substituted by a 5- to 6-membered aromatic
10 heterocyclyl radical comprising 1 to 4 heteroatoms
chosen from nitrogen, oxygen or sulfur and optionally
itself substituted [by halogen, hydroxyl, alkyl,
alkyloxy, trifluoromethyl, trifluoromethoxy, oxo,
carboxyl, alkyloxycarbonyl, cyano or amino], or R_3
15 represents cinnamyl or 4-phenylbuten-3-yl, or else

R_2 represents a hydroxymethyl, alkyloxycarbonyl,
alkyloxycarbonylmethyl or 2-(alkyloxycarbonyl)ethyl
radical (the alkyl portions of which comprise 1 to 6
20 carbon atoms) and

R_3 represents an alkyl radical (1 to 6 carbon atoms)
substituted by a phenylthio radical which can itself
carry 1 to 3 substituents [chosen from halogen,
hydroxyl, alkyl, alkyloxy, trifluoromethyl,
25 trifluoromethoxy, carboxyl, alkyloxycarbonyl, cyano or
amino], by a cycloalkylthio radical, the cyclic part of
which comprises 3 to 7 members, or by a 5- to
6-membered aromatic heterocyclylthio radical comprising

1 to 4 heteroatoms chosen from nitrogen, oxygen or sulfur and optionally itself substituted [by halogen, hydroxyl, alkyl, alkyloxy, trifluoromethyl, trifluoromethoxy, oxo, carboxyl, alkyloxycarbonyl, cyano or amino] or R_3 represents a propargyl radical substituted by a phenyl radical which can itself carry 1 to 3 substituents [chosen from halogen, hydroxyl, alkyl, alkyloxy, trifluoromethyl, trifluoromethoxy, carboxyl, alkyloxycarbonyl, cyano or amino] or substituted by a cycloalkyl radical comprising 3 to 7 members or substituted by a 5- to 6-membered aromatic heterocyclyl radical comprising 1 to 4 heteroatoms chosen from nitrogen, oxygen or sulfur and optionally itself substituted [by halogen, hydroxyl, alkyl, alkyloxy, trifluoromethyl, trifluoromethoxy, oxo, carboxyl, alkyloxycarbonyl, cyano or amino],

and R_4 represents an alkyl radical (comprising 1 to 6 carbon atoms), an alkenyl- CH_2 - radical or an alkynyl- CH_2 - radical, the alkenyl or alkynyl parts of which comprise 2 to 6 carbon atoms,

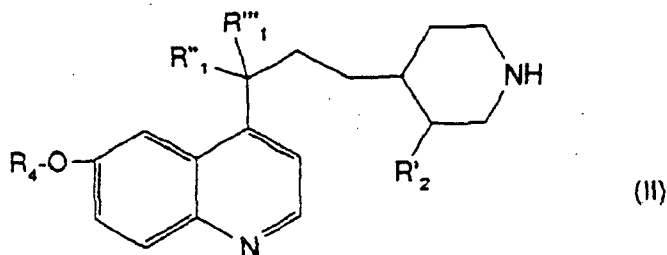
it being understood that the alkyl radicals and portions are straight-chain or branched-chain radicals and portions,

in their diastereoisomeric forms or their mixtures, as well as their salts, are powerful antibacterial agents.

It is understood that the alkyl radicals and portions are straight- or branched-chain radicals and portions and comprise (except when specifically mentioned) 1 to 3 carbon atoms and that, in the alternative where R_1 or R'_1 represent a halogen atom or when R_3 carries a halogen substituent, the latter can be chosen from fluorine, chlorine, bromine or iodine, preferably fluorine.

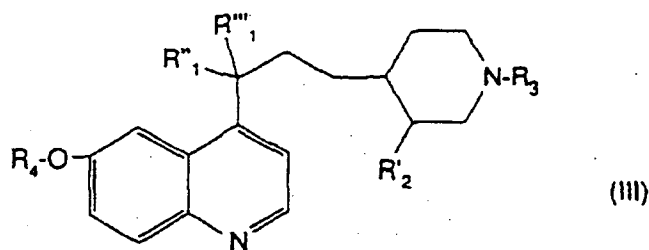
In the above general formula, when R_3 carries an aromatic heterocyclyl substituent, the latter can be chosen (without implied limitation) from thienyl, furyl, pyrrolyl, imidazolyl, thiazolyl, oxazolyl, thiadiazolyl, oxadiazolyl, tetrazolyl, pyridyl, pyridazinyl, pyrazinyl or pyrimidinyl. It is also understood that, in the definition of R_3 , the substituted alkyl radical only simultaneously carries a single cyclic radical.

According to the invention, the products of general formula (I) can be obtained by condensation of the R_3 chain onto the quinolylpropylpiperidine derivative of general formula:



in which R_4 is defined as previously, R''_1 and R'''_1 represent hydrogen atoms or together form an oxo

radical and R'_2 represents a protected carboxyl, carboxymethyl or 2-carboxyethyl radical, or an alkyloxycarbonyl, alkyloxycarbonylmethyl or 2-(alkyloxycarbonyl)ethyl radical, in order to obtain a
 5 quinolypropylpiperidine derivative of general formula:



in which R''_1 , R'''_1 , R'_2 and R_4 are defined as above and R_3 is defined as previously,

10 followed, if appropriate, by the removal of the acid-protecting radical,

then, if appropriate, followed by the reduction of the oxo radical represented by R''_1 and R'''_1 to an alcohol
 15 in which R_1 represents hydroxyl, then, optionally, by halogenation, if it is desired to obtain a quinolypropylpiperidine derivative in which R_1 is a halogen atom, and, optionally, by dehydrohalogenation of the corresponding halogenated derivative, in order
 20 to obtain a quinolypropylpiperidine derivative in which R_1 and R^0 together form a bond, or else by dihalogenation of the product of general formula (III) in which R''_1 and R'''_1 together form an oxo radical, in

order to obtain a quinolypropylpiperidine derivative in which R_1 and R'_1 are halogen atoms,

and/or, if appropriate, followed by the reduction of
5 the acid, protected in the form of an R'_2 radical, in the 3-position of the piperidine to a hydroxymethyl radical and optionally by the conversion to a carboxymethyl or 2-carboxyethyl radical according to the usual methods,

10

then, optionally, followed by the removal of the acid-protecting radical and optionally by the conversion of the product obtained to a salt.

The condensation of the R_3 chain onto the
15 piperidine is advantageously carried out by the action of a derivative of general formula:



in which R_3 is defined as previously and X represents a halogen atom, a methylsulfonyl radical, a trifluoro-
20 methylsulfonyl radical or a p-toluenesulfonyl radical, the reaction being carried out in an anhydrous environment, preferably an inert environment (nitrogen or argon, for example), in an organic solvent, such as an amide (dimethylformamide, for example), a ketone
25 (acetone, for example) or a nitrile (acetonitrile, for example), in the presence of a base, such as a nitrogenous organic base (for example, triethylamine) or an inorganic base (alkali metal carbonate: potassium

carbonate, for example), at a temperature of between 20°C and the reflux temperature of the solvent. Preferably, the reaction is carried out with a derivative in which X is a bromine or iodine atom.

5 When R₃ represents propargyl substituted by phenyl, cycloalkyl or heterocyclyl, it is often preferable to condense a propargyl halide and then to substitute the chain with a phenyl, cycloalkyl or heterocyclyl radical.

10 In this alternative, the addition of the propargyl chain is carried out by means of propargyl bromide, under the conditions set out above for R₃, in the presence or absence of an alkali metal iodide, such as, for example, potassium iodide or sodium iodide.

15 When it is a matter of the substitution by a phenyl or heterocyclyl radical, the reaction is carried out by the action of a halide derived from the cyclic radical to be substituted, in the presence of triethylamine, in an anhydrous environment in a solvent, such as an amide
20 (dimethylformamide, for example) or a nitrile (acetonitrile, for example), and in the presence of a palladium salt, such as, for example, tetrakis(triphenylphosphine)palladium, and of cuprous iodide, at a temperature of between 20°C and the reflux
25 temperature of the solvent.

When it is a matter of the substitution by a cycloalkyl group, the reaction is carried out by the action of an organolithium compound, such as n-butyllithium or tert-

butyllithium, on the propargyl derivative obtained above, in an anhydrous environment in an ether, such as, for example, tetrahydrofuran, at a temperature of between -78 and 0°C, and then the action of a
5 cycloalkanone, followed by the deoxygenation of the intermediate alcohol according to conventional methods.

It is understood that, when the alkyl radicals represented by R_3 carry carboxyl or amino substituents, the latter are protected beforehand and
10 then released after the reaction. These operations are carried out according to the usual methods which do not detrimentally affect the remainder of the molecule, in particular according to the methods described by T.W. Greene and P.G.M. Wuts, Protective Groups in
15 Organic Synthesis (2nd ed.), A. Wiley - Interscience Publication (1991), or by McOmie, Protective Groups in Organic Chemistry, Plenum Press (1973).

The protected carboxyl radical represented by R'_2 can be chosen from easily hydrolyzable esters.
20 Mention may be made, by way of example, of methyl, benzyl or tert-butyl esters or alternatively phenylpropyl or propargyl esters. The protecting of the carboxyl radical is optionally carried out simultaneously with the reaction. In this case, the
25 product of general formula (II) employed carries an R'_2 radical which is the carboxyl radical.

The reduction of the oxo radical to an alcohol is carried out according to the usual methods

which do not detrimentally affect the remainder of the molecule, in particular by the action of a reduction agent, such as, for example, a hydride (alkaline borohydride: sodium borohydride, potassium borohydride, 5 sodium triacetoxyborohydride or sodium cyanoborohydride, for example, lithium aluminum hydride or diisobutylaluminum hydride), the reaction preferably being carried out in under an inert atmosphere, in an organic solvent, such as an alcohol (methanol, ethanol 10 or isopropanol, for example) or an ether (for example, tetrahydrofuran) or a chlorinated solvent (for example, dichloromethane), at a temperature of between 20°C and the reflux temperature of the solvent.

The halogenation intended to produce a 15 quinolylpropylquinoline derivative in which R'₁ is a halogen atom from the derivative in which R'₁ is hydroxyl can be carried out, in the presence of an aminosulfur trifluoride (diethylaminosulfur trifluoride, bis(2-methoxyethyl)aminosulfur trifluoride 20 (Deoxofluor®) or morpholinosulfur trifluoride, for example) or alternatively in the presence of sulfur tetrafluoride, by means of a reagent, such as a tetraalkylammonium, trialkylbenzylammonium or trialkylphenylammonium halide, or by means of an alkali 25 metal halide, optionally with a crown ether added. The fluorination reaction can also be carried out by the action of a fluorinating agent such as a sulfur fluoride [for example, morpholinosulfur trifluoride,

sulfur tetrafluoride (J. Org. Chem., 40, 3808 (1975)), diethylaminosulfur trifluoride (Tetrahedron, 44, 2875 (1988)) or bis(2-methoxyethyl)aminosulfur trifluoride (Deoxofluor®). Alternatively, the fluorination reaction

5 can also be carried out by means of a fluorinating agent such as hexafluoropropyldiethylamine (JP 2 039 546) or N-(2-chloro-1,1,2-trifluoroethyl)diethylamine. When a tetraalkylammonium halide is employed, the latter can be chosen, by way of example, from

10 tetramethylammonium, tetraethylammonium, tetrapropylammonium, tetrabutylammonium (tetra(n-butyl)ammonium, for example), tetrapentylammonium, tetracyclohexylammonium, triethylmethylammonium, tributylmethylammonium or trimethylpropylammonium halides.

15 The reaction is carried out in an organic solvent, such as a chlorinated solvent (for example, dichloromethane, dichloroethane or chloroform) or in an ether (tetrahydrofuran or dioxane, for example), at a temperature of between -78 and 40°C (preferably between

20 0 and 30°C). It is advantageous to carry out the reaction in an inert environment (argon or nitrogen, in particular).

It is also possible to carry out the reaction by treatment with a halogenating agent, such as thionyl

25 chloride or phosphorus trichloride, in an organic solvent, such as a chlorinated solvent (dichloromethane or chloroform, for example), at a temperature of

between 0°C and the reflux temperature of the reaction mixture.

The dihalogenation of the product of general formula (III) in which R''₁ and R'''₁ together form an
5 oxo radical, in order to produce a quinolylpropylpiperidine derivative in which R₁ and R'₁ are halogen atoms, can be carried out under conditions analogous to those of the above halogenation.

The dehydrohalogenation of the halogenated
10 derivative obtained from the derivative in which R₁ is hydroxyl can be carried out in particular by treatment with diazabicyclo[5,4,0]undec-7-ene in an aromatic organic solvent (toluene, for example) at a temperature of between 20°C and the reflux temperature of the
15 reaction mixture.

The reduction of the acid, protected in the form of an R'₂ radical, in the 3-position of the piperidine to a hydroxymethyl radical is carried out according to the usual methods which do not
20 detrimentally affect the remainder of the molecule, in particular, the reduction is carried out by the action of a hydride (lithium aluminum hydride or diisobutylaluminum hydride, for example) in a solvent, such as an ether (tetrahydrofuran, for example), at a temperature
25 of between 20 and 60°C.

The conversion of the hydroxymethyl radical in the 3-position of the piperidine to a carboxymethyl radical is carried out according to the usual methods

which do not detrimentally affect the remainder of the molecule, in particular, it can be carried out by the action of a halogenating agent, such as, for example, thionyl chloride or phosphorus trichloride or

5 phosphorus tribromide, and then of an alkaline cyanide (potassium cyanide or sodium cyanide, for example), in order to prepare the corresponding cyanomethyl derivative, followed by the hydrolysis of the nitrile. The halogenation can be carried out in a chlorinated
10 solvent (dichloromethane or chloroform, for example) at a temperature of between 0°C and the reflux temperature of the solvent.

The reaction of the alkaline cyanide can be carried out in a solvent, such as dimethyl sulfoxide, an amide
15 (dimethylformamide, for example), a ketone (acetone, for example), an ether, such as, for example, tetrahydrofuran, or an alcohol, such as, for example, methanol or ethanol, at a temperature of between 20°C and the reflux temperature of the reaction mixture.

20 The hydrolysis of the nitrile is carried out according to conventional methods which do not detrimentally affect the remainder of the molecule, in particular by the action of hydrochloric acid in methanolic medium, at a temperature of between 20 and 70°C, followed by
25 the saponification of the ester obtained (for example, by sodium hydroxide in a mixture of dioxane and water), or else directly by the action of aqueous sulfuric acid at a temperature of between 50 and 80°C.

The conversion of the hydroxymethyl radical in the 3-position of the piperidine to a 2-carboxyethyl radical is carried out, for example, from the halogenated derivative prepared as described above by
5 condensation of the sodium salt of diethyl malonate, followed by acid hydrolysis in aqueous medium of the product obtained.

The removal, if appropriate, of the acid-protecting radical, in order to obtain a quinolyl-
10 propylpiperidine derivative in which R_2 is a carboxyl radical, is carried out according to the usual methods, in particular by acid hydrolysis or saponification of the R'_2 ester. In particular, sodium hydroxide is reacted in aqueous/organic medium, for example in an
15 alcohol, such as methanol, or an ether, such as dioxane, at a temperature of between 20°C and the reflux temperature of the reaction mixture. The hydrolysis can also be carried out in aqueous hydrochloric medium at a temperature of between 20 and
20 100°C.

The quinolylpropylpiperidine derivative of general formula (II) or the corresponding acid in which R'_2 represents a carboxyl radical can be prepared according to or by analogy with the methods described
25 hereinbelow in the examples or according to or by analogy with the methods disclosed in European Patent Application EP 30044 or in International Application WO 99/37635. The intermediates of the quinolylpropyl-

piperidine derivatives in which R_4 represents alkenyl-
CH₂O- or alkynyl-CH₂O- can be obtained, by analogy with
the preparation of the intermediates in which R_4 is
alkyloxy, by the action of the corresponding
5 halogenated derivative on the quinoline derivative
hydroxylated in the 6-position.

The protected 2-carboxyethyl derivative of
general formula (II) can be obtained according to or by
analogy with the method disclosed in International
10 Application WO 99/37635, followed by the hydrolysis of
the nitrile and by the esterification of the acid thus
obtained, or can be prepared according to or by analogy
with the methods described hereinbelow in the examples.

It is understood that the derivatives of
15 general formula (I), (II) or (III) or their starting
intermediates can exist in the cis or trans form with
regard to the substituents in the 3- and 4-position of
the piperidine. The derivatives with the trans
configuration can be obtained from the derivatives with
20 the cis configuration according to or by analogy with
the method disclosed in International Application
WO 99/37635.

The quinolypropylpiperidine derivatives of
general formula (I) can be purified, if appropriate, by
25 physical methods, such as crystallization or
chromatography.

Furthermore, it is understood that, when R'_1
is a hydrogen atom and R_1 is hydroxyl or halogen,

diastereoisomeric forms exist and that the diastereoisomeric forms and their mixtures also come within the scope of the present invention. The latter can be separated in particular by silica chromatography
5 or by High Performance Liquid Chromatography (HPLC).

The quinolypropylpiperidine derivatives of general formula (I) can be converted to addition salts with acids by known methods. It is understood that these salts also come within the scope of the present
10 invention.

Mention may be made, as examples of addition salts with pharmaceutically acceptable acids, of the salts formed with inorganic acids (hydrochlorides, hydrobromides, sulfates, nitrates or phosphates) or
15 with organic acids (succinates, fumarates, tartrates, acetates, propionates, maleates, citrates, methane-sulfonates, ethanesulfonates, phenylsulfonates, p-toluenesulfonates, isethionates, naphthylsulfonates or camphorsulfonates, or with substituted derivatives
20 of these compounds).

Some of the quinolypropylpiperidine derivatives of general formula (I) carrying a carboxyl radical can be converted to the form of metal salts or to addition salts with nitrogenous bases according to
25 methods known per se. These salts also come within the scope of the present invention. The salts can be obtained by the action of a metal base (for example, an alkali metal or alkaline earth metal base), of ammonia

or an amine on a product according to the invention in an appropriate solvent, such as an alcohol, an ether or water, or by an exchange reaction with a salt of an organic acid. The salt formed precipitates, after
5 optional concentration of the solution, and it is separated by filtration, settling or lyophilization. Mention may be made, as examples of pharmaceutically acceptable salts, of the salts with alkali metals (sodium, potassium or lithium) or with alkaline earth
10 metals (magnesium or calcium), the ammonium salt or the salts of nitrogenous bases (ethanolamine, diethanolamine, trimethylamine, triethylamine, methylamine, propylamine, diisopropylamine, NN-dimethylethanolamine, benzylamine, dicyclohexylamine, N-benzyl- β -phenethyl-
15 amine, NN'-dibenzylethylenediamine, diphenylenediamine, benzhydramine, quinine, choline, arginine, lysine, leucine or dibenzylamine).

The quinolypropylpiperidine derivatives according to the invention are particularly
20 advantageous antibacterial agents.

In vitro, with regard to gram-positive microorganisms, the quinolypropylpiperidine derivatives according to the invention have proved to be active at concentrations of between 0.015 and
25 4 $\mu\text{g/ml}$ with regard to meticillin-resistant *Staphylococcus aureus* AS5155, and most of them at concentrations of between 0.06 and 8 $\mu\text{g/ml}$ with regard to *Streptococcus pneumoniae* IP53146 and at

concentrations of between 0.12 and 64 $\mu\text{g/ml}$ with regard to *Enterococcus faecium* ATCC19434 or H983401 and, with regard to gram-negative microorganisms, they have proved to be active at concentrations of between 0.12 and 32 $\mu\text{g/ml}$ with regard to *Moraxella catharrhalis* IPA152; in vivo, they have proved to be active with regard to experimental infections of mice with *Staphylococcus aureus* IP8203 at doses of between 10 and 150 mg/kg subcutaneously (CD_{50}) and, for some of them, at doses of between 20 and 150 mg/kg orally.

Finally, the products according to the invention are particularly advantageous because of their low toxicity. None of the products displayed toxicity at a dose of 100 mg/kg subcutaneously in mice (2 administrations).

More particularly advantageous, among the products according to the invention, are the quinolylpropylquinoline derivatives of general formula (I) in which:

R_1 is a hydrogen or halogen atom or a hydroxyl radical,
 R'_1 is a hydrogen atom, and
 R° is a hydrogen atom, or else

R_1 and R° together form a bond and
 R'_1 is a hydrogen atom,

- R_2 represents a carboxyl or carboxymethyl radical, and R_3 represents an alkyl radical (1 to 6 carbon atoms) substituted by 1 to 3 substituents chosen from halogen, oxo, alkyloxy or alkylthio or from a phenyl or phenylthio radical, which can themselves carry 1 to 4 halogen atoms, or from a cycloalkyl or cycloalkylthio radical, the cyclic part of which comprises 3 to 7 members, or from a 5- to 6-membered aromatic heterocyclyl or heterocyclylthio radical comprising 1 to 4 heteroatoms chosen from nitrogen, oxygen or sulfur and optionally themselves substituted by halogen, or R_3 represents a propargyl radical substituted by a phenyl radical which can itself carry 1 to 3 halogen substituents or a propargyl radical substituted by a 5- to 6-membered aromatic heterocyclyl radical comprising 1 to 4 heteroatoms chosen from nitrogen, oxygen or sulfur, or R_3 represents cinnamyl, or else
- R_2 represents a hydroxymethyl, alkyloxycarbonyl or alkyloxycarbonylmethyl radical (the alkyl portions of which comprise 1 to 6 carbon atoms) and R_3 represents an alkyl radical (1 to 6 carbon atoms) substituted by a 5- to 6-membered aromatic heterocyclylthio radical comprising 1 to 4 heteroatoms chosen from nitrogen, oxygen or sulfur, or R_3 represents a propargyl radical substituted by a 5- to 6-membered

aromatic heterocyclyl radical comprising 1 to 4
heteroatoms chosen from nitrogen, oxygen or sulfur,

and R₄ represents an alkyl radical (comprising 1 to 6
5 carbon atoms),

the alkyl radicals and portions being straight- or
branched-chain radicals and portions, as well as the
diastereoisomeric forms or their mixtures, as well as
10 their salts,

and more especially preferred, among these products,
are the following products:

- 15 • (3R,4R)-4-[3-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetic acid;
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetic acid;
- 20 • (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetic acid;
- (3R,4R)-4-[3-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylsulfanyl)ethyl]piperidine-3-acetic acid;
- 25 • (3R,4R)-1-[2-(3-Fluorophenylthio)ethyl]-4-[3-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetic acid;

- (3R,4R)-4-[3-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3,5-trifluorophenyl)prop-2-ynyl]-piperidine-3-carboxylic acid.

5

The products cited in the examples are particularly preferred; the quinolylpropylpiperidine derivatives hereinbelow are also advantageous products:

- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 10 1-[4-phenylbutyl]piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[4-(2-fluorophenyl)butyl]piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[4-(3-fluorophenyl)butyl]piperidine-3-carboxylic acid
 15 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[3-(4-fluorophenyl)propyl]piperidine-3-carboxylic
 acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[4-(4-fluorophenyl)butyl]piperidine-3-carboxylic acid
 20 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[3-(2,3-difluorophenyl)propyl]piperidine-3-carboxylic
 acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[4-(2,3-difluorophenyl)butyl]piperidine-3-carboxylic
 25 acids
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[3-(2,6-difluorophenyl)propyl]piperidine-3-carboxylic
 acid

- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(2,6-difluorophenyl)butyl]piperidine-3-carboxylic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
5 1-[3-(2-chlorophenyl)propyl]piperidine-3-carboxylic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(2-chlorophenyl)butyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
10 1-[3-(3-chlorophenyl)propyl]piperidine-3-carboxylic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(3-chlorophenyl)butyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
15 1-[3-(4-chlorophenyl)propyl]piperidine-3-carboxylic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(4-chlorophenyl)butyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
20 1-[3-(2,3-dichlorophenyl)propyl]piperidine-3-carboxylic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(2,3-dichlorophenyl)butyl]piperidine-3-carboxylic
acid
- 25 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(2,6-dichlorophenyl)propyl]piperidine-3-carboxylic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

- 1-[4-(2,6-dichlorophenyl)butyl]piperidine-3-carboxylic
acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(2-methylphenyl)propyl]piperidine-3-carboxylic
5 acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(2-methylphenyl)butyl]piperidine-3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[5-(2-methylphenyl)pentyl]piperidine-3-carboxylic
10 acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3-methylphenyl)propyl]piperidine-3-carboxylic
acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
15 1-[4-(3-methylphenyl)butyl]piperidine-3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(4-methylphenyl)propyl]piperidine-3-carboxylic
acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
20 1-[4-(4-methylphenyl)butyl]piperidine-3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(2-methoxyphenyl)propyl]piperidine-3-carboxylic
acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
25 1-[4-(2-methoxyphenyl)butyl]piperidine-3-carboxylic
acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3-methoxyphenyl)propyl]piperidine-3-carboxylic

acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(3-methoxyphenyl)butyl]piperidine-3-carboxylic
acid

5 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(4-methoxyphenyl)propyl]piperidine-3-carboxylic
acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(4-methoxyphenyl)butyl]piperidine-3-carboxylic

10 acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(2-trifluoromethylphenyl)propyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
15 1-[4-(2-trifluoromethylphenyl)butyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3-trifluoromethylphenyl)propyl]piperidine-
3-carboxylic acid

20 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(3-trifluoromethylphenyl)butyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(4-trifluoromethylphenyl)propyl]piperidine-

25 3-carboxylic acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(4-trifluoromethylphenyl)butyl]piperidine-
3-carboxylic acid

- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-phenylthiopropyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(2-fluorophenylthio)propyl]piperidine-3-carboxylic
5 acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3-fluorophenylthio)propyl]piperidine-3-carboxylic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
10 1-[2-(4-fluorophenylthio)ethyl]piperidine-3-carboxylic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(4-fluorophenylthio)propyl]piperidine-3-carboxylic
acid
- 15 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(2,3-difluorophenylthio)ethyl]piperidine-
3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(2,3-difluorophenylthio)propyl]piperidine-
20 3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(2,6-difluorophenylthio)ethyl]piperidine-
3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
25 1-[3-(2,6-difluorophenylthio)propyl]piperidine-
3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(2-chlorophenylthio)ethyl]piperidine-3-carboxylic

acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(2-chlorophenylthio)propyl]piperidine-3-carboxylic
acid

5 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(3-chlorophenylthio)ethyl]piperidine-3-carboxylic
acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3-chlorophenylthio)propyl]piperidine-3-carboxylic

10 acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(4-chlorophenylthio)ethyl]piperidine-3-carboxylic
acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

15 1-[3-(4-chlorophenylthio)propyl]piperidine-3-carboxylic
acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[2-(2,3-dichlorophenylthio)ethyl]piperidine-
3-carboxylic acid

20 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(2,3-dichlorophenylthio)propyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[2-(2,6-dichlorophenylthio)ethyl]piperidine-

25 3-carboxylic acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[3-(2,6-dichlorophenylthio)propyl]piperidine-
3-carboxylic acid

- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(2-methylphenylthio)ethyl]piperidine-3-carboxylic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
5 1-[3-(2-methylphenylthio)propyl]piperidine-3-carboxylic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(3-methylphenylthio)ethyl]piperidine-3-carboxylic
acid
- 10 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3-methylphenylthio)propyl]piperidine-3-carboxylic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(4-methylphenylthio)ethyl]piperidine-3-carboxylic
15 acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(4-methylphenylthio)propyl]piperidine-3-carboxylic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
20 1-[2-(2-trifluoromethylphenylthio)ethyl]piperidine-
3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(2-trifluoromethylphenylthio)propyl]piperidine-
3-carboxylic acid
- 25 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(3-trifluoromethylphenylthio)ethyl]piperidine-
3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

- 1-[3-(3-trifluoromethylphenylthio)propyl]piperidine-3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(4-trifluoromethylphenylthio)ethyl]piperidine-3-carboxylic acid
- 5 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(4-trifluoromethylphenylthio)propyl]piperidine-3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(2-methoxyphenylthio)ethyl]piperidine-3-carboxylic acid
- 10 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(2-methoxyphenylthio)propyl]piperidine-3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(3-methoxyphenylthio)ethyl]piperidine-3-carboxylic acid
- 15 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(3-methoxyphenylthio)propyl]piperidine-3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(4-methoxyphenylthio)ethyl]piperidine-3-carboxylic acid
- 20 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(4-methoxyphenylthio)propyl]piperidine-3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[cyclopropylmethyl]piperidine-3-carboxylic acid
- 25

- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(cyclopropyl)ethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[cyclobutylmethyl]piperidine-3-carboxylic acid
- 5 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(cyclobutyl)ethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[cyclopentylmethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
10 1-[2-(cyclopentyl)ethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[cyclohexylmethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(cyclohexyl)ethyl]piperidine-3-carboxylic acid
- 15 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(cyclopropylthio)ethyl]piperidine-3-carboxylic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(cyclopropylthio)propyl]piperidine-3-carboxylic
20 acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(cyclobutylthio)ethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(cyclobutylthio)propyl]piperidine-3-carboxylic
25 acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(cyclopentylthio)ethyl]piperidine-3-carboxylic
acid

- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(cyclopentylthio)propyl]piperidine-3-carboxylic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
5 1-[3-(cyclohexylthio)propyl]piperidine-3-carboxylic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-methylthioethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
10 1-[3-methylthiopropyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-ethylthioethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-ethylthiopropyl]piperidine-3-carboxylic acid
- 15 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(n-propylthio)ethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(n-propylthio)propyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
20 1-[2-(n-butylthio)ethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(n-butylthio)propyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(thien-2-yl)butyl]piperidine-3-carboxylic acid
- 25 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(thien-2-yl)thiopropyl]piperidine-3-carboxylic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[3-(5-chlorothien-2-yl)propyl]piperidine-3-carboxylic
acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[4-(5-chlorothien-2-yl)butyl]piperidine-3-carboxylic
5 acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[2-(5-chlorothien-2-yl)thioethyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

10 1-[3-(5-chlorothien-2-yl)thiopropyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[3-(3-chlorothien-2-yl)propyl]piperidine-3-carboxylic
acid

15 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[4-(3-chlorothien-2-yl)butyl]piperidine-3-carboxylic
acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[2-(3-chlorothien-2-yl)thioethyl]piperidine-
20 3-carboxylic acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[3-(3-chlorothien-2-yl)thiopropyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

25 1-[3-(5-methylthien-2-yl)propyl]piperidine-3-carboxylic
acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[4-(5-methylthien-2-yl)butyl]piperidine-3-carboxylic

acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(5-methylthien-2-yl)thioethyl]piperidine-
3-carboxylic acid

5 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(5-methylthien-2-yl)thiopropyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3-methylthien-2-yl)propyl]piperidine-3-carboxylic

10 acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(3-methylthien-2-yl)butyl]piperidine-3-carboxylic
acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
15 1-[2-(3-methylthien-2-yl)thioethyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3-methylthien-2-yl)thiopropyl]piperidine-
3-carboxylic acid

20 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(thien-3-yl)propyl]piperidine-3-carboxylic acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(thien-3-yl)butyl]piperidine-3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

25 1-[2-(thien-3-yl)thioethyl]piperidine-3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(thien-3-yl)thiopropyl]piperidine-3-carboxylic
acid

- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(fur-2-yl)propyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[4-(fur-2-yl)butyl]piperidine-3-carboxylic acid
- 5 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(fur-2-yl)thioethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(fur-2-yl)thiopropyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(fur-
- 10 3-yl)propyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[4-(fur-3-yl)butyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(fur-3-yl)thioethyl]piperidine-3-carboxylic acid
- 15 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(fur-3-yl)thiopropyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(1-methylpyrrol-2-yl)propyl]piperidine-3-carboxylic acid
- 20 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[4-(1-methylpyrrol-2-yl)butyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(1-methylpyrrol-2-yl)thioethyl]piperidine-
- 25 3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(1-methylpyrrol-2-yl)thiopropyl]piperidine-3-carboxylic acid

- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(1-methylpyrrol-2-yl)propyl]piperidine-
3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
5 1-[4-(1-methylpyrrol-3-yl)butyl]piperidine-3-carboxylic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(1-methylpyrrol-3-yl)thioethyl]piperidine-
3-carboxylic acid
- 10 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(1-methylpyrrol-3-yl)thiopropyl]piperidine-
3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(1,3-thiazol-2-yl)propyl]piperidine-3-carboxylic
15 acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(1,3-thiazol-2-yl)butyl]piperidine-3-carboxylic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
20 1-[3-(1,3-thiazol-2-yl)thiopropyl]piperidine-
3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(1-methylimidazol-2-yl)propyl]piperidine-
3-carboxylic acid
- 25 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(1-methylimidazol-2-yl)butyl]piperidine-
3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

- 1-[2-(1-methylimidazol-2-yl)thioethyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(1-methylimidazol-2-yl)thiopropyl]piperidine-
5 3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3-methylimidazol-4-yl)propyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
10 1-[4-(3-methylimidazol-4-yl)butyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(3-methylimidazol-4-yl)thioethyl]piperidine-
3-carboxylic acid
15 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3-methylimidazol-4-yl)thiopropyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3-methylpyrazol-4-yl)propyl]piperidine-
20 3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(3-methylpyrazol-4-yl)butyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
25 1-[2-(3-methylpyrazol-4-yl)thioethyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3-methylpyrazol-4-yl)thiopropyl]piperidine-

- 3-carboxylic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[3-(oxazol-2-yl)propyl]piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 5 1-[4-(oxazol-2-yl)butyl]piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[2-(oxazol-2-yl)thioethyl]piperidine-3-carboxylic
 acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 10 1-[3-(oxazol-2-yl)thiopropyl]piperidine-3-carboxylic
 acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[3-(pyridin-2-yl)propyl]piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 15 1-[4-(pyridin-2-yl)butyl]piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[3-(pyridin-2-yl)thiopropyl]piperidine-3-carboxylic
 acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 20 1-[3-(pyridin-3-yl)propyl]piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[4-(pyridin-3-yl)butyl]piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[2-(pyridin-3-yl)thioethyl]piperidine-3-carboxylic
 25 acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[3-(pyridin-3-yl)thiopropyl]piperidine-3-carboxylic
 acid

- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(pyridin-4-yl)propyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(pyridin-4-yl)butyl]piperidine-3-carboxylic acid
- 5 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[5-(pyridin-4-yl)pentyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(pyridin-4-yl)thioethyl]piperidine-3-carboxylic
acid
- 10 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(pyridin-4-yl)thiopropyl]piperidine-3-carboxylic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(pyrimidin-2-yl)propyl]piperidine-3-carboxylic
15 acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(pyrimidin-2-yl)butyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(pyrimidin-2-yl)thioethyl]piperidine-3-carboxylic
20 acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(pyrimidin-2-yl)thiopropyl]piperidine-3-carboxylic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
25 1-[3-(pyrimidin-4-yl)propyl]piperidine-3-carboxylic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(pyrimidin-4-yl)butyl]piperidine-3-carboxylic acid

- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(pyrimidin-4-yl)thioethyl]piperidine-3-carboxylic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
5 1-[3-(pyrimidin-4-yl)thiopropyl]piperidine-3-carboxylic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(pyrimidin-5-yl)propyl]piperidine-3-carboxylic
acid
- 10 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(pyrimidin-5-yl)butyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(pyrimidin-5-yl)thioethyl]piperidine-3-carboxylic
acid
- 15 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(pyrimidin-5-yl)thiopropyl]piperidine-3-carboxylic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(pyrazin-2-yl)propyl]piperidine-3-carboxylic acid
- 20 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(pyrazin-2-yl)butyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(pyrazin-2-yl)thioethyl]piperidine-3-carboxylic
acid
- 25 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(pyrazin-2-yl)thiopropyl]piperidine-3-carboxylic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

- 1-[3-(pyridazin-3-yl)propyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 1-[4-(pyridazin-3-yl)butyl]piperidine-3-carboxylic acid
- 5 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 1-[2-(pyridazin-3-yl)thioethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 1-[3-(pyridazin-3-yl)thiopropyl]piperidine-3-carboxylic acid
- 10 acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 1-[3-(pyridazin-4-yl)propyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 15 1-[4-(pyridazin-4-yl)butyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 1-[2-(pyridazin-4-yl)thioethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 20 1-[3-(pyridazin-4-yl)thiopropyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 1-[3-(4-fluorophenyl)prop-2-ynyl]piperidine-3-carboxylic acid
- 25 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 1-[3-(2-chlorophenyl)prop-2-ynyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

- 1-[3-(3-chlorophenyl)prop-2-ynyl]piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(4-chlorophenyl)prop-2-ynyl]piperidine-3-carboxylic acid
- 5 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(2-methylphenyl)prop-2-ynyl]piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(3-methylphenyl)prop-2-ynyl]piperidine-3-carboxylic acid
- 10 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(4-methylphenyl)prop-2-ynyl]piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(2-(trifluoromethyl)phenyl)prop-2-ynyl]piperidine-3-carboxylic acid
- 15 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(3-(trifluoromethyl)phenyl)prop-2-ynyl]piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(4-(trifluoromethyl)phenyl)prop-2-ynyl]piperidine-3-carboxylic acid
- 20 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(2-Methoxyphenyl)prop-2-ynyl]piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(3-methoxyphenyl)prop-2-ynyl]piperidine-
- 25

- 3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(4-methoxyphenyl)prop-2-ynyl]piperidine-
3-carboxylic acid
- 5 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3,4-difluorophenyl)prop-2-ynyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(2,4-difluorophenyl)prop-2-ynyl]piperidine-
- 10 3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3,4-dichlorophenyl)prop-2-ynyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 15 1-[3-(2,3-dichlorophenyl)prop-2-ynyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(2,4-dichlorophenyl)prop-2-ynyl]piperidine-
3-carboxylic acid
- 20 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(2,4,6-trichlorophenyl)prop-2-ynyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3,5-dichlorophenyl)prop-2-ynyl]piperidine-
- 25 3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(4-chloro-3-fluorophenyl)prop-2-ynyl]piperidine-
3-carboxylic acid

- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3-chloro-4-fluorophenyl)prop-2-ynyl]piperidine-
3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
5 1-[3-(2-chloro-4-fluorophenyl)prop-2-ynyl]piperidine-
3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3-chloro-5-fluorophenyl)prop-2-ynyl]piperidine-
3-carboxylic acid
- 10 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(4-chloro-2-fluorophenyl)prop-2-ynyl]piperidine-
3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3-fluoro-4-methylphenyl)prop-2-ynyl]piperidine-
15 3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(4-chloro-3-(trifluoromethyl)phenyl)prop-
2-ynyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
20 1-[3-(2-chloro-4-(trifluoromethyl)phenyl)prop-
2-ynyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(2-chloro-5-(trifluoromethyl)phenyl)prop-2-ynyl]-
piperidine-3-carboxylic acid
- 25 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(5-chloro-2-methoxyphenyl)prop-2-ynyl]piperidine-
3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

- 1-[3-(3,5-bis(trifluoromethyl)phenyl)prop-2-ynyl]-
piperidine-3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3,5-dimethylphenyl)prop-2-ynyl]piperidine-
5 3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(2,4-dichloro-6-methylphenyl)prop-2-ynyl]-
piperidine-3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
10 1-[3-(5-chlorothien-2-yl)prop-2-ynyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3-chlorothien-2-yl)prop-2-ynyl]piperidine-
3-carboxylic acid
15 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(5-methylthien-2-yl)prop-2-ynyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3-methylthien-2-yl)prop-2-ynyl]piperidine-
20 3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(thien-3-yl)prop-2-ynyl]piperidine-3-carboxylic
acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
25 1-[3-(1-methylpyrrol-2-yl)prop-2-ynyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(1-methylpyrrol-3-yl)prop-2-ynyl]piperidine-

- 3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(1,3-thiazol-2-yl)prop-2-ynyl]piperidine-
3-carboxylic acid
- 5 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(1,3-thiazol-4-yl)prop-2-ynyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(1,3-thiazol-5-yl)prop-2-ynyl]piperidine-
- 10 3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(1-methylimidazol-2-yl)prop-2-ynyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 15 1-[3-(3-methylimidazol-4-yl)prop-2-ynyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3-methylpyrazol-4-yl)prop-2-ynyl]piperidine-
3-carboxylic acid
- 20 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(oxazol-2-yl)prop-2-ynyl]piperidine-3-carboxylic
acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(oxazol-4-yl)prop-2-ynyl]piperidine-3-carboxylic
- 25 acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(oxazol-5-yl)prop-2-ynyl]piperidine-3-carboxylic
acid

- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(pyridin-2-yl)prop-2-ynyl]piperidine-3-carboxylic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
5 1-[3-(pyridin-3-yl)prop-2-ynyl]piperidine-3-carboxylic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(pyridin-4-yl)prop-2-ynyl]piperidine-3-carboxylic
acid
- 10 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(pyrimidin-2-yl)prop-2-ynyl]piperidine-
3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(pyrimidin-4-yl)prop-2-ynyl]piperidine-
15 3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(pyrimidin-5-yl)prop-2-ynyl]piperidine-
3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
20 1-[3-(pyrazin-2-yl)prop-2-ynyl]piperidine-3-carboxylic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(pyridazin-3-yl)prop-2-ynyl]piperidine-
3-carboxylic acid
- 25 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(pyridazin-4-yl)prop-2-ynyl]piperidine-
3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

- 1-[4-phenylbuten-3-yl]piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-phenylbutyl]piperidine-3-carboxylic acid
- 5 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-fluorophenyl)propyl]piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(2-fluorophenyl)butyl]piperidine-3-carboxylic acid
- 10 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-fluorophenyl)propyl]piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(3-fluorophenyl)butyl]piperidine-3-carboxylic acid
- 15 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-fluorophenyl)propyl]piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(4-fluorophenyl)butyl]piperidine-3-carboxylic acid
- 20 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3-difluorophenyl)propyl]-piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(2,3-difluorophenyl)butyl]piperidine-3-carboxylic acid
- 25

- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,6-difluorophenyl)propyl]-piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(2,6-difluorophenyl)butyl]piperidine-3-carboxylic acid
- 5 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-chlorophenyl)propyl]piperidine-3-carboxylic acid
- 10 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(2-chlorophenyl)butyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-chlorophenyl)propyl]piperidine-3-carboxylic acid
- 15 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(3-chlorophenyl)butyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-chlorophenyl)propyl]piperidine-3-carboxylic acid
- 20 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(4-chlorophenyl)butyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3-dichlorophenyl)propyl]-piperidine-3-carboxylic acid
- 25 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-

- 4-yl)propyl]-1-[4-(2,3-dichlorophenyl)butyl]piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,6-dichlorophenyl)propyl]-
- 5 piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(2,6-dichlorophenyl)butyl]piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
- 10 4-yl)propyl]-1-[3-(2-methylphenyl)propyl]piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(2-methylphenyl)butyl]piperidine-3-carboxylic acid
- 15 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[5-(2-methylphenyl)pentyl]piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-methylphenyl)propyl]piperidine-
- 20 3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(3-methylphenyl)butyl]piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
- 25 4-yl)propyl]-1-[3-(4-methylphenyl)propyl]piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(4-methylphenyl)butyl]piperidine-

- 3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-methoxyphenyl)propyl]piperidine-3-carboxylic acid
- 5 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(2-methoxyphenyl)butyl]piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-methoxyphenyl)propyl]piperidine-
- 10 3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(3-methoxyphenyl)butyl]piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-methoxyphenyl)propyl]piperidine-
- 15 3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(4-methoxyphenyl)butyl]piperidine-3-carboxylic acid
- 20 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-trifluoromethylphenyl)propyl]-piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(2-trifluoromethylphenyl)butyl]-
- 25 piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-trifluoromethylphenyl)propyl]-piperidine-3-carboxylic acid

- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(3-trifluoromethylphenyl)butyl]-piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-trifluoromethylphenyl)propyl]-piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(4-trifluoromethylphenyl)butyl]-piperidine-3-carboxylic acid
- 10 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-phenylthioethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-phenylthiopropyl]piperidine-3-carboxylic acid
- 15 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-fluorophenylthio)propyl]-piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-fluorophenylthio)propyl]-piperidine-3-carboxylic acid
- 20 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-fluorophenylthio)ethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(4-fluorophenylthio)ethyl]piperidine-3-carboxylic acid
- 25 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(4-fluorophenylthio)ethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-

- 4-yl)propyl]-1-[3-(4-fluorophenylthio)propyl]-
piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[2-(2,3-difluorophenylthio)ethyl]-
5 piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(2,3-difluorophenylthio)propyl]-
piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
10 4-yl)propyl]-1-[2-(2,6-difluorophenylthio)ethyl]-
piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(2,6-difluorophenylthio)propyl]-
piperidine-3-carboxylic acid
15 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[2-(2-chlorophenylthio)ethyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(2-chlorophenylthio)propyl]-
20 piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[2-(3-chlorophenylthio)ethyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
25 4-yl)propyl]-1-[3-(3-chlorophenylthio)propyl]-
piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[2-(4-chlorophenylthio)ethyl]piperidine-

- 3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-chlorophenylthio)propyl]-piperidine-3-carboxylic acid
- 5 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2,3-dichlorophenylthio)ethyl]-piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3-dichlorophenylthio)propyl]-
- 10 piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2,6-dichlorophenylthio)ethyl]-piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,6-dichlorophenylthio)propyl]-
- 15 piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-methylphenylthio)ethyl]piperidine-3-carboxylic acid
- 20 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-methylphenylthio)propyl]-piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-methylphenylthio)ethyl]piperidine-
- 25 3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-methylphenylthio)propyl]-piperidine-3-carboxylic acid

- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(4-methylphenylthio)ethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-methylphenylthio)propyl]-piperidine-3-carboxylic acid
- 5 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-trifluoromethylphenylthio)ethyl]-piperidine-3-carboxylic acid
- 10 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-trifluoromethylphenylthio)propyl]-piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-trifluoromethylphenylthio)ethyl]-piperidine-3-carboxylic acid
- 15 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-trifluoromethylphenylthio)propyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(4-trifluoromethylphenylthio)ethyl]-piperidine-3-carboxylic acid
- 20 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-trifluoromethylphenylthio)propyl]-piperidine-3-carboxylic acid
- 25 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-methoxyphenylthio)ethyl]-piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-

- 4-yl)propyl]-1-[3-(2-methoxyphenylthio)propyl]-
piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[2-(3-methoxyphenylthio)ethyl]-
5 piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(3-methoxyphenylthio)propyl]-
piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
10 4-yl)propyl]-1-[2-(4-methoxyphenylthio)ethyl]-
piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(4-methoxyphenylthio)propyl]-
piperidine-3-carboxylic acid
15 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[cyclopropylmethyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[2-(cyclopropyl)ethyl]piperidine-
20 3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[cyclobutylmethyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
25 4-yl)propyl]-1-[2-(cyclobutyl)ethyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[cyclopentylmethyl]piperidine-

3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclopentyl)ethyl]piperidine-3-carboxylic acid

5 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[cyclohexylmethyl]piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclohexyl)ethyl]piperidine-

10 3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclopropylthio)ethyl]piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-

15 4-yl)propyl]-1-[3-(cyclopropylthio)propyl]piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclobutylthio)ethyl]piperidine-3-carboxylic acid

20 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(cyclobutylthiopropyl]piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclopentylthio)ethyl]piperidine-3-

25 carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(cyclopentylthio)propyl]piperidine-3-carboxylic acid

- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclohexylthio)ethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(cyclohexylthio)propyl]piperidine-3-carboxylic acid
- 5 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-methylthioethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-methylthiopropyl]piperidine-3-carboxylic acid
- 10 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-ethylthioethyl]piperidine-3-carboxylic acid
- 15 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-ethylthiopropyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(n-propylthio)ethyl]piperidine-3-carboxylic acid
- 20 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(n-propylthio)propyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(n-butylthio)ethyl]piperidine-3-carboxylic acid
- 25 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-

- 4-yl)propyl]-1-[3-(n-butylthio)propyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(thien-2-yl)propyl]piperidine-
5 3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[4-(thien-2-yl)butyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
10 4-yl)propyl]-1-[3-(thien-2-yl)thiopropyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(5-chlorothien-2-yl)propyl]-
piperidine-3-carboxylic acid
15 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[4-(5-chlorothien-2-yl)butyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(5-chlorothien-2-yl)thioethyl]piperidine-
20 3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(5-chlorothien-2-yl)thiopropyl]-
piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
25 4-yl)propyl]-1-[3-(3-chlorothien-2-yl)propyl]-
piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[4-(3-chlorothien-2-yl)butyl]piperidine-

3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-chlorothien-2-yl)thioethyl]-piperidine-3-carboxylic acid

5 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-chlorothien-2-yl)thiopropyl]-piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(5-methylthien-2-yl)propyl]-

10 piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(5-methylthien-2-yl)butyl]piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(5-methylthien-2-yl)thioethyl]-piperidine-3-carboxylic acid

15 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(5-methylthien-2-yl)thiopropyl]-piperidine-3-carboxylic acid

20 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-methylthien-2-yl)propyl]-piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(3-methylthien-2-yl)butyl]piperidine-

25 3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-methylthien-2-yl)thioethyl]-piperidine-3-carboxylic acid

- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-methylthien-2-yl)thiopropyl]-piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-3-yl)propyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(thien-3-yl)butyl]piperidine-3-carboxylic acid
- 10 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(thien-3-yl)thioethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-3-yl)thiopropyl]piperidine-3-carboxylic acid
- 15 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(fur-2-yl)propyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(fur-2-yl)butyl]piperidine-3-carboxylic acid
- 20 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(fur-2-yl)thioethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(fur-2-yl)thiopropyl]piperidine-3-carboxylic acid
- 25 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(fur-2-yl)thiopropyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-

- 4-yl)propyl]-1-[3-(fur-3-yl)propyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[4-(fur-3-yl)butyl]piperidine-
- 5 3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[2-(fur-3-yl)thioethyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
- 10 4-yl)propyl]-1-[3-(fur-3-yl)thiopropyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(1-methylpyrrol-2-yl)propyl]-
piperidine-3-carboxylic acid
- 15 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[4-(1-methylpyrrol-2-yl)butyl]-
piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(1-methylpyrrol-2-yl)thioethyl]piperidine-
- 20 3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(1-methylpyrrol-2-yl)thiopropyl]-
piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
- 25 4-yl)propyl]-1-[3-(1-methylpyrrol-2-yl)propyl]-
piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[4-(1-methylpyrrol-3-yl)butyl]-

- piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(1-methylpyrrol-3-yl)thioethyl]-
 piperidine-3-carboxylic acid
- 5 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(1-methylpyrrol-3-yl)thiopropyl]-
 piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(1,3-thiazol-2-yl)propyl]piperidine-
- 10 3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[4-(1,3-thiazol-2-yl)butyl]piperidine-
 3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
- 15 propyl]-1-[3-(1,3-thiazol-2-yl)thiopropyl]piperidine-
 3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(1-methylimidazol-2-yl)propyl]piperidine-
 3-carboxylic acid
- 20 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[4-(1-methylimidazol-2-yl)butyl]piperidine-
 3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[2-(1-methylimidazol-2-yl)thioethyl]-
- 25 piperidine-3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(1-methylimidazol-2-yl)thiopropyl]-
 piperidine-3-carboxylic acid

- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-methylimidazol-4-yl)propyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(3-methylimidazol-4-yl)butyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(3-methylimidazol-4-yl)thioethyl]-piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-methylimidazol-4-yl)thiopropyl]-piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-methylpyrazol-4-yl)propyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(3-methylpyrazol-4-yl)butyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(3-methylpyrazol-4-yl)thioethyl]-piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-methylpyrazol-4-yl)thiopropyl]-piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(oxazol-2-yl)propyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-

propyl]-1-[4-(oxazol-2-yl)butyl]piperidine-3-carboxylic
acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(oxazol-2-yl)thioethyl]piperidine-

5 3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(oxazol-2-yl)thiopropyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
10 propyl]-1-[3-(pyridin-2-yl)propyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(pyridin-2-yl)butyl]piperidine-
3-carboxylic acid

15 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyridin-2-yl)thiopropyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyridin-3-yl)propyl]piperidine-
20 3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(pyridin-3-yl)butyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
25 propyl]-1-[2-(pyridin-3-yl)thioethyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyridin-3-yl)thiopropyl]piperidine-

- 3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyridin-4-yl)propyl]piperidine-3-carboxylic acid
- 5 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(pyridin-4-yl)butyl]piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[5-(pyridin-4-yl)pentyl]piperidine-
- 10 3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(pyridin-2-yl)thioethyl]piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
- 15 propyl]-1-[2-(pyridin-4-yl)thioethyl]piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyridin-4-yl)thiopropyl]piperidine-3-carboxylic acid
- 20 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyrimidin-2-yl)propyl]piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(pyrimidin-2-yl)butyl]piperidine-
- 25 3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(pyrimidin-2-yl)thioethyl]piperidine-3-carboxylic acid

- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyrimidin-2-yl)thiopropyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyrimidin-4-yl)propyl]piperidine-3-carboxylic acid
- 5 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(pyrimidin-4-yl)butyl]piperidine-3-carboxylic acid
- 10 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(pyrimidin-4-yl)thioethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyrimidin-4-yl)thiopropyl]piperidine-3-carboxylic acid
- 15 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyrimidin-5-yl)propyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(pyrimidin-5-yl)butyl]piperidine-3-carboxylic acid
- 20 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(pyrimidin-5-yl)thioethyl]piperidine-3-carboxylic acid
- 25 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyrimidin-5-yl)thiopropyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-

- propyl]-1-[3-(pyrazin-2-yl)propyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(pyrazin-2-yl)butyl]piperidine-
- 5 3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(pyrazin-2-yl)thioethyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
- 10 propyl]-1-[3-(pyrazin-2-yl)thiopropyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyridazin-3-yl)propyl]piperidine-
3-carboxylic acid
- 15 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(pyridazin-3-yl)butyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(pyridazin-3-yl)thioethyl]piperidine-
- 20 3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyridazin-3-yl)thiopropyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
- 25 propyl]-1-[3-(pyridazin-4-yl)propyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(pyridazin-4-yl)butyl]piperidine-

3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(pyridazin-4-yl)thioethyl]piperidine-
3-carboxylic acid

5 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyridazin-4-yl)thiopropyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-phenylprop-2-ynyl]piperidine-3-carboxylic
10 acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2-fluorophenyl)prop-2-ynyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
15 propyl]-1-[3-(4-fluorophenyl)prop-2-ynyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2-chlorophenyl)prop-2-ynyl]piperidine-
3-carboxylic acid

20 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-chlorophenyl)prop-2-ynyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(4-chlorophenyl)prop-2-ynyl]piperidine-
25 3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2-methylphenyl)prop-2-ynyl]piperidine-
3-carboxylic acid

- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-methylphenyl)prop-2-ynyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(4-methylphenyl)prop-2-ynyl]piperidine-3-carboxylic acid
- 5 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(2-(trifluoromethyl)phenyl)prop-2-ynyl]piperidine-3-carboxylic acid
- 10 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-(trifluoromethyl)phenyl)prop-2-ynyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(4-(trifluoromethyl)phenyl)prop-2-ynyl]piperidine-3-carboxylic acid
- 15 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(2-methoxyphenyl)prop-2-ynyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-methoxyphenyl)prop-2-ynyl]piperidine-3-carboxylic acid
- 20 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(4-methoxyphenyl)prop-2-ynyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3,4-difluorophenyl)prop-2-ynyl]piperidine-3-carboxylic acid
- 25 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3,4-difluorophenyl)prop-2-ynyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3,4-difluorophenyl)prop-2-ynyl]piperidine-3-carboxylic acid

- propyl]-1-[3-(2,4-difluorophenyl)prop-2-ynyl]-
piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3,4-dichlorophenyl)prop-2-ynyl]-
5 piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2,3-dichlorophenyl)prop-2-ynyl]-
piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
10 propyl]-1-[3-(2,4-dichlorophenyl)prop-2-ynyl]-
piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2,4,6-trichlorophenyl)prop-2-ynyl]-
piperidine-3-carboxylic acid
15 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3,5-dichlorophenyl)prop-2-ynyl]-
piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(4-chloro-3-fluorophenyl)prop-2-ynyl]-
20 piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-chloro-4-fluorophenyl)prop-
2-ynyl]piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
25 propyl]-1-[3-(2-chloro-4-fluorophenyl)prop-2-ynyl]-
piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-chloro-5-fluorophenyl)prop-2-ynyl]-

piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(4-chloro-2-fluorophenyl)prop-2-ynyl]-
piperidine-3-carboxylic acid

5 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-fluoro-4-methylphenyl)prop-2-ynyl]-
piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(4-chloro-3-(trifluoromethyl)phenyl)prop-
10 2-ynyl]piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2-chloro-4-(trifluoromethyl)phenyl)prop-
2-ynyl]piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
15 propyl]-1-[3-(2-chloro-5-(trifluoromethyl)phenyl)prop-
2-ynyl]piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(5-chloro-2-methoxyphenyl)prop-
2-ynyl]piperidine-3-carboxylic acid

20 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3,5-bis(trifluoromethyl)phenyl)prop-
2-ynyl]piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3,5-dimethylphenyl)prop-2-ynyl]-

25 piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2,4-dichloro-6-methylphenyl)prop-
2-ynyl]piperidine-3-carboxylic acid

- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(5-chlorothien-2-yl)prop-2-ynyl]-piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-chlorothien-2-yl)prop-2-ynyl]-piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(5-methylthien-2-yl)prop-2-ynyl]-piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-methylthien-2-yl)prop-2-ynyl]-piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(thien-3-yl)prop-2-ynyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(1-methylpyrrol-2-yl)prop-2-ynyl]-piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(1-methylpyrrol-3-yl)prop-2-ynyl]-piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(1,3-thiazol-2-yl)prop-2-ynyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(1,3-thiazol-4-yl)prop-2-ynyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-

- propyl]-1-[3-(1,3-thiazol-5-yl)prop-2-ynyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(1-methylimidazol-2-yl)prop-2-ynyl]-
- 5 piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-methylimidazol-4-yl)prop-2-ynyl]-piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
- 10 propyl]-1-[3-(3-methylpyrazol-4-yl)prop-2-ynyl]-piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(oxazol-2-yl)prop-2-ynyl]piperidine-3-carboxylic acid
- 15 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(oxazol-4-yl)prop-2-ynyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(oxazol-5-yl)prop-2-ynyl]piperidine-
- 20 3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyridin-2-yl)prop-2-ynyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
- 25 propyl]-1-[3-(pyridin-3-yl)prop-2-ynyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyridin-4-yl)prop-2-ynyl]piperidine-

3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyrimidin-2-yl)prop-2-ynyl]piperidine-
3-carboxylic acid

5 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyrimidin-4-yl)prop-2-ynyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyrimidin-5-yl)prop-2-ynyl]piperidine-

10 3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyrazin-2-yl)prop-2-ynyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
15 propyl]-1-[3-(pyridazin-3-yl)prop-2-ynyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyridazin-4-yl)prop-2-ynyl]piperidine-
3-carboxylic acid

20 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-phenylpropen-2-yl]piperidine-3-carboxylic
acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-phenylbuten-3-yl]piperidine-3-carboxylic

25 acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-phenylbutyl]piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-

- propyl]-1-[3-(2-fluorophenyl)propyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(2-fluorophenyl)butyl]piperidine-
- 5 3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-fluorophenyl)propyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
- 10 propyl]-1-[4-(3-fluorophenyl)butyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(4-fluorophenyl)propyl]piperidine-
3-carboxylic acid
- 15 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(4-fluorophenyl)butyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2,3-difluorophenyl)propyl]piperidine-
- 20 3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(2,3-difluorophenyl)butyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
- 25 propyl]-1-[3-(2,6-difluorophenyl)propyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(2,6-difluorophenyl)butyl]piperidine-

3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2-chlorophenyl)propyl]piperidine-

3-carboxylic acid

5 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(2-chlorophenyl)butyl]piperidine-

3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-chlorophenyl)propyl]piperidine-

10 3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(3-chlorophenyl)butyl]piperidine-

3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
15 propyl]-1-[3-(4-chlorophenyl)propyl]piperidine-

3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(4-chlorophenyl)butyl]piperidine-

3-carboxylic acid

20 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2,3-dichlorophenyl)propyl]piperidine-

3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(2,3-dichlorophenyl)butyl]piperidine-

25 3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2,6-dichlorophenyl)propyl]piperidine-

3-carboxylic acid

- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(2,6-dichlorophenyl)butyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(2-methylphenyl)propyl]piperidine-3-carboxylic acid
- 5 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(2-methylphenyl)butyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[5-(2-methylphenyl)pentyl]piperidine-3-carboxylic acid
- 10 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-methylphenyl)propyl]piperidine-3-carboxylic acid
- 15 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(3-methylphenyl)butyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(4-methylphenyl)propyl]piperidine-3-carboxylic acid
- 20 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(4-methylphenyl)butyl]piperidine-3-carboxylic acid
- 25 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(2-methoxyphenyl)propyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-

- propyl]-1-[4-(2-methoxyphenyl)butyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-methoxyphenyl)propyl]piperidine-
- 5 3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(3-methoxyphenyl)butyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
- 10 propyl]-1-[3-(4-methoxyphenyl)propyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(4-methoxyphenyl)butyl]piperidine-
3-carboxylic acid
- 15 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2-trifluoromethylphenyl)propyl]-
piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(2-trifluoromethylphenyl)butyl]piperidine-
- 20 3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-trifluoromethylphenyl)propyl]-
piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
- 25 propyl]-1-[4-(3-trifluoromethylphenyl)butyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(4-trifluoromethylphenyl)propyl]-

piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(4-trifluoromethylphenyl)butyl]piperidine-3-carboxylic acid

5 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-phenylthioethyl]piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-phenylthiopropyl]piperidine-3-carboxylic acid

10 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(2-fluorophenylthio)propyl]piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-fluorophenylthio)propyl]piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(2-fluorophenylthio)ethyl]piperidine-3-carboxylic acid

20 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(4-fluorophenylthio)ethyl]piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(4-fluorophenylthio)propyl]piperidine-3-carboxylic acid

25 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(2,3-difluorophenylthio)ethyl]piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2,3-difluorophenylthio)propyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
5 propyl]-1-[2-(2,6-difluorophenylthio)ethyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2,6-difluorophenylthio)propyl]piperidine-
3-carboxylic acid

10 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(2-chlorophenylthio)ethyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2-chlorophenylthio)propyl]piperidine-
15 3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(3-chlorophenylthio)ethyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
20 propyl]-1-[3-(3-chlorophenylthio)propyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(4-chlorophenylthio)ethyl]piperidine-
3-carboxylic acid

25 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(4-chlorophenylthio)propyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-

- propyl]-1-[2-(2,3-dichlorophenylthio)ethyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2,3-dichlorophenylthio)propyl]piperidine-
5 3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(2,6-dichlorophenylthio)ethyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
10 propyl]-1-[3-(2,6-dichlorophenylthio)propyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(2-methylphenylthio)ethyl]piperidine-
3-carboxylic acid
15 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2-methylphenylthio)propyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(3-methylphenylthio)ethyl]piperidine-
20 3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-methylphenylthio)propyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
25 propyl]-1-[2-(4-methylphenylthio)ethyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(4-methylphenylthio)propyl]piperidine-

3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(2-trifluoromethylphenylthio)ethyl]-
piperidine-3-carboxylic acid

- 5 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2-trifluoromethylphenylthio)propyl]-
piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(3-trifluoromethylphenylthio)ethyl]-

- 10 piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-trifluoromethylphenylthio)propyl]-
piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-

- 15 propyl]-1-[2-(4-trifluoromethylphenylthio)ethyl]-
piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(4-trifluoromethylphenylthio)propyl]-
piperidine-3-carboxylic acid

- 20 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(2-methoxyphenylthio)ethyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2-methoxyphenylthio)propyl]piperidine-

- 25 3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(3-methoxyphenylthio)ethyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-methoxyphenylthio)propyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
5 propyl]-1-[2-(4-methoxyphenylthio)ethyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(4-methoxyphenylthio)propyl]piperidine-
3-carboxylic acid

10 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[cyclopropylmethyl]piperidine-3-carboxylic
acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(cyclopropyl)ethyl]piperidine-3-carboxylic
15 acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[cyclobutylmethyl]piperidine-3-carboxylic
acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
20 propyl]-1-[2-(cyclobutyl)ethyl]piperidine-3-carboxylic
acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[cyclopentylmethyl]piperidine-3-carboxylic
acid

25 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(cyclopentyl)ethyl]piperidine-3-carboxylic
acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-

- propyl]-1-[cyclohexylmethyl]piperidine-3-carboxylic
acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(cyclohexyl)ethyl]piperidine-3-carboxylic
5 acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(cyclopropylthio)ethyl]piperidine-
3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
10 propyl]-1-[3-(cyclopropylthio)propyl]piperidine-
3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(cyclobutylthio)ethyl]piperidine-
3-carboxylic acid
- 15 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(cyclobutylthiopropyl]piperidine-
3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(cyclopentylthio)ethyl]piperidine-
20 3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(cyclopentylthio)propyl]piperidine-
3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
25 propyl]-1-[2-(cyclohexylthio)ethyl]piperidine-
3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(cyclohexylthio)propyl]piperidine-

3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-methylthioethyl]piperidine-3-carboxylic acid

- 5 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-methylthiopropyl]piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-ethylthioethyl]piperidine-3-carboxylic

- 10 acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-ethylthiopropyl]piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-

- 15 propyl]-1-[2-(n-propylthio)ethyl]piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(n-propylthio)propyl]piperidine-3-carboxylic acid

- 20 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(n-butylthio)ethyl]piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(n-butylthio)propyl]piperidine-

- 25 3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(thien-2-yl)propyl]piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(thien-2-yl)butyl]piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(thien-2-yl)thiopropyl]piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(5-chlorothien-2-yl)propyl]piperidine-3-carboxylic acid

10 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(5-chlorothien-2-yl)butyl]piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(5-chlorothien-2-yl)thioethyl]piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(5-chlorothien-2-yl)thiopropyl]piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-chlorothien-2-yl)propyl]piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(3-chlorothien-2-yl)butyl]piperidine-3-carboxylic acid

25 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(3-chlorothien-2-yl)thioethyl]piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-

propyl]-1-[3-(3-chlorothien-2-yl)thiopropyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(5-methylthien-2-yl)propyl]piperidine-

5 3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(5-methylthien-2-yl)butyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
10 propyl]-1-[2-(5-methylthien-2-yl)thioethyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(5-methylthien-2-yl)thiopropyl]piperidine-
3-carboxylic acid

15 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-methylthien-2-yl)propyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(3-methylthien-2-yl)butyl]piperidine-

20 3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(3-methylthien-2-yl)thioethyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
25 propyl]-1-[3-(3-methylthien-2-yl)thiopropyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(thien-3-yl)propyl]piperidine-3-carboxylic

acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(thien-3-yl)butyl]piperidine-3-carboxylic
acid

5 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(thien-3-yl)thioethyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(thien-3-yl)thiopropyl]piperidine-

10 3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(fur-2-yl)propyl]piperidine-3-carboxylic
acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
15 propyl]-1-[4-(fur-2-yl)butyl]piperidine-3-carboxylic
acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(fur-2-yl)thioethyl]piperidine-
3-carboxylic acid

20 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(fur-2-yl)thiopropyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(fur-3-yl)propyl]piperidine-3-carboxylic

25 acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(fur-3-yl)butyl]piperidine-3-carboxylic
acid

- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(fur-3-yl)thioethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(fur-3-yl)thiopropyl]piperidine-3-carboxylic acid
- 5 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(1-methylpyrrol-2-yl)propyl]piperidine-3-carboxylic acid
- 10 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(1-methylpyrrol-2-yl)butyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(1-methylpyrrol-2-yl)thioethyl]piperidine-3-carboxylic acid
- 15 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(1-methylpyrrol-2-yl)thiopropyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(1-methylpyrrol-2-yl)propyl]piperidine-3-carboxylic acid
- 20 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(1-methylpyrrol-3-yl)butyl]piperidine-3-carboxylic acid
- 25 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(1-methylpyrrol-3-yl)thioethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-

- propyl]-1-[3-(1-methylpyrrol-3-yl)thiopropyl]-
piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(1,3-thiazol-2-yl)propyl]piperidine-
5 3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(1,3-thiazol-2-yl)butyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
10 propyl]-1-[2-(1,3-thiazol-2-yl)thioethyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(1,3-thiazol-2-yl)thiopropyl]piperidine-
3-carboxylic acid
15 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(1-methylimidazol-2-yl)propyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(1-methylimidazol-2-yl)butyl]piperidine-
20 3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(1-methylimidazol-2-yl)thioethyl]-
piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
25 propyl]-1-[3-(1-methylimidazol-2-yl)thiopropyl]-
piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-methylimidazol-4-yl)propyl]piperidine-

3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(3-methylimidazol-4-yl)butyl]piperidine-3-carboxylic acid

- 5 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(3-methylimidazol-4-yl)thioethyl]-piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-methylimidazol-4-yl)thiopropyl]-

- 10 piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-methylpyrazol-4-yl)propyl]piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-

- 15 propyl]-1-[4-(3-methylpyrazol-4-yl)butyl]piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(3-methylpyrazol-4-yl)thioethyl]-piperidine-3-carboxylic acid

- 20 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-methylpyrazol-4-yl)thiopropyl]-piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(oxazol-2-yl)propyl]piperidine-

- 25 3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(oxazol-2-yl)butyl]piperidine-3-carboxylic acid

- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(oxazol-2-yl)thioethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(oxazol-2-yl)thiopropyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyridin-2-yl)propyl]piperidine-3-carboxylic acid
- 10 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(pyridin-2-yl)butyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyridin-2-yl)thiopropyl]piperidine-3-carboxylic acid
- 15 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyridin-3-yl)propyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(pyridin-3-yl)butyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(pyridin-3-yl)thioethyl]piperidine-3-carboxylic acid
- 25 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyridin-3-yl)thiopropyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-

propyl]-1-[3-(pyridin-4-yl)propyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(pyridin-4-yl)butyl]piperidine-

5 3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[5-(pyridin-4-yl)pentyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
10 propyl]-1-[2-(pyridin-2-yl)thioethyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(pyridin-4-yl)thioethyl]piperidine-
3-carboxylic acid

15 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyridin-4-yl)thiopropyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyrimidin-2-yl)propyl]piperidine-

20 3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(pyrimidin-2-yl)butyl]piperidine-

3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-

25 propyl]-1-[2-(pyrimidin-2-yl)thioethyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyrimidin-2-yl)thiopropyl]piperidine-

- 3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(pyrimidin-4-yl)propyl]piperidine-
 3-carboxylic acid
- 5 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[4-(pyrimidin-4-yl)butyl]piperidine-
 3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[2-(pyrimidin-4-yl)thioethyl]piperidine-
- 10 3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(pyrimidin-4-yl)thiopropyl]piperidine-
 3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
- 15 propyl]-1-[3-(pyrimidin-5-yl)propyl]piperidine-
 3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[4-(pyrimidin-5-yl)butyl]piperidine-
 3-carboxylic acid
- 20 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[2-(pyrimidin-5-yl)thioethyl]piperidine-
 3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(pyrimidin-5-yl)thiopropyl]piperidine-
- 25 3-carboxylic acid
 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(pyrazin-2-yl)propyl]piperidine-
 3-carboxylic acid

- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(pyrazin-2-yl)butyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(pyrazin-2-yl)thioethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyrazin-2-yl)thiopropyl]piperidine-3-carboxylic acid
- 10 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyridazin-3-yl)propyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(pyridazin-3-yl)butyl]piperidine-3-carboxylic acid
- 15 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(pyridazin-3-yl)thioethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyridazin-3-yl)thiopropyl]piperidine-3-carboxylic acid
- 20 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyridazin-4-yl)propyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(pyridazin-4-yl)butyl]piperidine-3-carboxylic acid
- 25 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(pyridazin-4-yl)butyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-

- propyl]-1-[2-(pyridazin-4-yl)thioethyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyridazin-4-yl)thiopropyl]piperidine-
5 3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-phenylprop-2-ynyl]piperidine-3-carboxylic
acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
10 propyl]-1-[3-(2-fluorophenyl)prop-2-ynyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(4-fluorophenyl)prop-2-ynyl]piperidine-
3-carboxylic acid
15 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2-chlorophenyl)prop-2-ynyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-chlorophenyl)prop-2-ynyl]piperidine-
20 3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(4-chlorophenyl)prop-2-ynyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
25 propyl]-1-[3-(2-methylphenyl)prop-2-ynyl]piperidine-
3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-methylphenyl)prop-2-ynyl]piperidine-

3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(4-methylphenyl)prop-2-ynyl]piperidine-
3-carboxylic acid

5 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2-(trifluoromethyl)phenyl)prop-2-ynyl]-
piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-(trifluoromethyl)phenyl)prop-2-ynyl]-

10 piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(4-(trifluoromethyl)phenyl)prop-2-ynyl]-
piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
15 propyl]-1-[3-(2-methoxyphenyl)prop-2-ynyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-methoxyphenyl)prop-2-ynyl]piperidine-
3-carboxylic acid

20 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(4-methoxyphenyl)prop-2-ynyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3,4-difluorophenyl)prop-2-ynyl]-

25 piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2,4-difluorophenyl)prop-2-ynyl]-
piperidine-3-carboxylic acid

- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3,4-dichlorophenyl)prop-2-ynyl]-piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(2,3-dichlorophenyl)prop-2-ynyl]-piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(2,4-dichlorophenyl)prop-2-ynyl]-piperidine-3-carboxylic acid
- 10 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(2,4,6-trichlorophenyl)prop-2-ynyl]-piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3,5-dichlorophenyl)prop-2-ynyl]-piperidine-3-carboxylic acid
- 15 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(4-chloro-3-fluorophenyl)prop-2-ynyl]-piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-chloro-4-fluorophenyl)prop-2-ynyl]-piperidine-3-carboxylic acid
- 20 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(2-chloro-4-fluorophenyl)prop-2-ynyl]-piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-chloro-5-fluorophenyl)prop-2-ynyl]-piperidine-3-carboxylic acid
- 25 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-

- propyl]-1-[3-(4-chloro-2-fluorophenyl)prop-2-ynyl]-
piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-fluoro-4-methylphenyl)prop-2-ynyl]-
5 piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(4-chloro-3-(trifluoromethyl)phenyl)prop-
2-ynyl]piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
10 propyl]-1-[3-(2-chloro-4-(trifluoromethyl)phenyl)prop-
2-ynyl]piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2-chloro-5-(trifluoromethyl)phenyl)prop-
2-ynyl]piperidine-3-carboxylic acid
15 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(5-chloro-2-methoxyphenyl)prop-2-ynyl]-
piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3,5-bis(trifluoromethyl)phenyl)prop-
20 2-ynyl]piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3,5-dimethylphenyl)prop-2-ynyl]-
piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
25 propyl]-1-[3-(2,4-dichloro-6-methylphenyl)prop-2-ynyl]-
piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(5-chlorothien-2-yl)prop-2-ynyl]-

piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-chlorothien-2-yl)prop-2-ynyl]-

piperidine-3-carboxylic acid

5 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(5-methylthien-2-yl)prop-2-ynyl]-

piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-methylthien-2-yl)prop-2-ynyl]-

10 piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(thien-3-yl)prop-2-ynyl]piperidine-

3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-

15 propyl]-1-[3-(1-methylpyrrol-2-yl)prop-2-ynyl]-

piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(1-methylpyrrol-3-yl)prop-2-ynyl]-

piperidine-3-carboxylic acid

20 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(1,3-thiazol-2-yl)prop-2-ynyl]piperidine-
3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(1,3-thiazol-4-yl)prop-2-ynyl]piperidine-

25 3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(1,3-thiazol-5-yl)prop-2-ynyl]piperidine-
3-carboxylic acid

- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(1-methylimidazol-2-yl)prop-2-ynyl]-piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-methylimidazol-4-yl)prop-2-ynyl]-piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-methylpyrazol-4-yl)prop-2-ynyl]-piperidine-3-carboxylic acid
- 10 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(oxazol-2-yl)prop-2-ynyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(oxazol-4-yl)prop-2-ynyl]piperidine-3-carboxylic acid
- 15 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(oxazol-5-yl)prop-2-ynyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyridin-2-yl)prop-2-ynyl]piperidine-3-carboxylic acid
- 20 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyridin-3-yl)prop-2-ynyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyridin-4-yl)prop-2-ynyl]piperidine-3-carboxylic acid
- 25 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyridin-4-yl)prop-2-ynyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-

- propyl]-1-[3-(pyrimidin-2-yl)prop-2-ynyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyrimidin-4-yl)prop-2-ynyl]piperidine-
- 5 3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyrimidin-5-yl)prop-2-ynyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
- 10 propyl]-1-[3-(pyrazin-2-yl)prop-2-ynyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyridazin-3-yl)prop-2-ynyl]piperidine-3-carboxylic acid
- 15 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyridazin-4-yl)prop-2-ynyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-phenylpropen-2-yl]piperidine-3-carboxylic
- 20 acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-phenylbuten-3-yl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 25 1-[4-phenylbutyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(2-fluorophenyl)propyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

- 1-[4-(2-fluorophenyl)butyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 1-[3-(3-fluorophenyl)propyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 5 1-[4-(3-fluorophenyl)butyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 1-[3-(4-fluorophenyl)propyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 1-[4-(4-fluorophenyl)butyl]piperidine-3-acetic acid
- 10 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 1-[3-(2,3-difluorophenyl)propyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 1-[4-(2,3-difluorophenyl)butyl]piperidine-3-acetic acid
- 15 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 1-[3-(2,6-difluorophenyl)propyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 1-[4-(2,6-difluorophenyl)butyl]piperidine-3-acetic acid
- 20 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 1-[3-(2-chlorophenyl)propyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 1-[4-(2-chlorophenyl)butyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 25 1-[3-(3-chlorophenyl)propyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 1-[4-(3-chlorophenyl)butyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

- 1-[3-(4-chlorophenyl)propyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(4-chlorophenyl)butyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 5 1-[3-(2,3-dichlorophenyl)propyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(2,3-dichlorophenyl)butyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 10 1-[3-(2,6-dichlorophenyl)propyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(2,6-dichlorophenyl)butyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 15 1-[3-(2-methylphenyl)propyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(2-methylphenyl)butyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[5-(2-methylphenyl)pentyl]piperidine-3-acetic acid
- 20 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3-methylphenyl)propyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(3-methylphenyl)butyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 25 1-[3-(4-methylphenyl)propyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(4-methylphenyl)butyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

- 1-[3-(2-methoxyphenyl)propyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 1-[4-(2-methoxyphenyl)butyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 5 1-[3-(3-methoxyphenyl)propyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 1-[4-(3-methoxyphenyl)butyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 1-[3-(4-methoxyphenyl)propyl]piperidine-3-acetic acid
 10 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 1-[4-(4-methoxyphenyl)butyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 1-[3-(2-trifluoromethylphenyl)propyl]piperidine-
 3-acetic acid
- 15 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 1-[4-(2-trifluoromethylphenyl)butyl]piperidine-3-acetic
 acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 1-[3-(3-trifluoromethylphenyl)propyl]piperidine-
 20 3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 1-[4-(3-trifluoromethylphenyl)butyl]piperidine-3-acetic
 acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 25 1-[3-(4-trifluoromethylphenyl)propyl]piperidine-
 3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 1-[4-(4-trifluoromethylphenyl)butyl]piperidine-3-acetic

acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[2-phenylthioethyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

5 1-[3-phenylthiopropyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[2-(2-fluorophenylthio)ethyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[3-(2-fluorophenylthio)propyl]piperidine-3-acetic

10 acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(3-

fluorophenylthio)ethyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[3-(3-fluorophenylthio)propyl]piperidine-3-acetic

15 acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[2-(4-fluorophenylthio)ethyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[3-(4-fluorophenylthio)propyl]piperidine-3-acetic

20 acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[2-(2,3-difluorophenylthio)ethyl]piperidine-3-acetic

acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

25 1-[3-(2,3-difluorophenylthio)propyl]piperidine-3-acetic

acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[2-(2,6-difluorophenylthio)ethyl]piperidine-3-acetic

acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(2,6-difluorophenylthio)propyl]piperidine-3-acetic
acid

5 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(2-chlorophenylthio)ethyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(2-chlorophenylthio)propyl]piperidine-3-acetic
acid

10 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(3-chlorophenylthio)ethyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3-chlorophenylthio)propyl]piperidine-3-acetic
acid

15 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(4-chlorophenylthio)ethyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(4-chlorophenylthio)propyl]piperidine-3-acetic
acid

20 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(2,3-dichlorophenylthio)ethyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(2,3-dichlorophenylthio)propyl]piperidine-3-acetic

25 acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(2,6-dichlorophenylthio)ethyl]piperidine-3-acetic
acid

- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(2,6-dichlorophenylthio)propyl]piperidine-3-acetic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
5 1-[2-(2-methylphenylthio)ethyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(2-methylphenylthio)propyl]piperidine-3-acetic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
10 1-[2-(3-methylphenylthio)ethyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3-methylphenylthio)propyl]piperidine-3-acetic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
15 1-[2-(4-methylphenylthio)ethyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(4-methylphenylthio)propyl]piperidine-3-acetic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
20 1-[2-(2-trifluoromethylphenylthio)ethyl]piperidine-
3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(2-trifluoromethylphenylthio)propyl]piperidine-
3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
25 1-[2-(3-trifluoromethylphenylthio)ethyl]piperidine-
3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

- 1-[3-(3-trifluoromethylphenylthio)propyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[2-(4-trifluoromethylphenylthio)ethyl]piperidine-3-acetic acid
 5 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[3-(4-trifluoromethylphenylthio)propyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 10 1-[2-(2-methoxyphenylthio)ethyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[3-(2-methoxyphenylthio)propyl]piperidine-3-acetic acid
 15 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[2-(3-methoxyphenylthio)ethyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[3-(3-methoxyphenylthio)propyl]piperidine-3-acetic acid
 20 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[2-(4-methoxyphenylthio)ethyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 25 1-[3-(4-methoxyphenylthio)propyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[cyclopropylmethyl]piperidine-3-acetic acid

- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[2-(cyclopropyl)ethyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[cyclobutylmethyl]piperidine-3-acetic acid
 5 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[2-(cyclobutyl)ethyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[cyclopentylmethyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 10 1-[2-(cyclopentyl)ethyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[cyclohexylmethyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[2-(cyclohexyl)ethyl]piperidine-3-acetic acid
 15 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[2-(cyclopropylthio)ethyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[3-(cyclopropylthio)propyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 20 1-[2-(cyclobutylthio)ethyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[3-(cyclobutylthiopropyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[2-(cyclopentylthio)ethyl]piperidine-3-acetic acid
 25 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[3-(cyclopentylthio)propyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-
 (cyclohexylthio)ethyl]piperidine-3-acetic acid

- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(cyclohexylthio)propyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-methylthioethyl]piperidine-3-acetic acid
- 5 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-methylthiopropyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-ethylthioethyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
10 1-[3-ethylthiopropyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(n-propylthio)ethyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(n-propylthio)propyl]piperidine-3-acetic acid
- 15 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(n-butylthio)ethyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(n-butylthio)propyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
20 1-[3-(thien-2-yl)propyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(thien-2-yl)butyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-
(thien-2-yl)thioethyl]piperidine-3-acetic acid
- 25 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(thien-2-yl)thiopropyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(5-chlorothien-2-yl)propyl]piperidine-3-acetic

acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[4-(5-chlorothien-2-yl)butyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

5 1-[2-(5-chlorothien-2-yl)thioethyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[3-(5-chlorothien-2-yl)thiopropyl]piperidine-3-acetic
acid

10 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[3-(3-chlorothien-2-yl)propyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[4-(3-chlorothien-2-yl)butyl]piperidine-3-acetic acid

15 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[2-(3-chlorothien-2-yl)thioethyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[3-(3-chlorothien-2-yl)thiopropyl]piperidine-3-acetic

20 acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[3-(5-methylthien-2-yl)propyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

25 1-[4-(5-methylthien-2-yl)butyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[2-(5-methylthien-2-yl)thioethyl]piperidine-3-acetic
acid

- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(5-methylthien-2-yl)thiopropyl]piperidine-3-acetic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
5 1-[3-(3-methylthien-2-yl)propyl]piperidine-3-acetic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(3-methylthien-2-yl)butyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
10 1-[2-(3-methylthien-2-yl)thioethyl]piperidine-3-acetic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3-methylthien-2-yl)thiopropyl]piperidine-3-acetic
acid
- 15 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(thien-3-yl)propyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(thien-3-yl)butyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
20 1-[2-(thien-3-yl)thioethyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(thien-3-yl)thiopropyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(fur-2-yl)propyl]piperidine-3-acetic acid
- 25 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(fur-2-yl)butyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(fur-2-yl)thioethyl]piperidine-3-acetic acid

- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(fur-2-yl)thiopropyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(fur-3-yl)propyl]piperidine-3-acetic acid
- 5 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(fur-3-yl)butyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(fur-3-yl)thioethyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
10 1-[3-(fur-3-yl)thiopropyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(1-methylpyrrol-2-yl)propyl]piperidine-3-acetic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
15 1-[4-(1-methylpyrrol-2-yl)butyl]piperidine-3-acetic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(1-methylpyrrol-2-yl)thioethyl]piperidine-3-acetic
acid
- 20 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(1-methylpyrrol-2-yl)thiopropyl]piperidine-
3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(1-methylpyrrol-2-yl)propyl]piperidine-3-acetic
25 acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(1-methylpyrrol-3-yl)butyl]piperidine-3-acetic
acid

- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(1-methylpyrrol-3-yl)thioethyl]piperidine-3-acetic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
5 1-[3-(1-methylpyrrol-3-yl)thiopropyl]piperidine-
3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(thiazol-2-yl)propyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
10 1-[4-(thiazol-2-yl)butyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(thiazol-2-yl)thioethyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(thiazol-2-yl)thiopropyl]piperidine-3-acetic acid
- 15 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(1-methylimidazol-2-yl)propyl]piperidine-3-acetic
acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(1-methylimidazol-2-yl)butyl]piperidine-3-acetic
20 acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(1-methylimidazol-2-yl)thioethyl]piperidine-
3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
25 1-[3-(1-methylimidazol-2-yl)thiopropyl]piperidine-
3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3-methylimidazol-4-yl)propyl]piperidine-3-acetic

acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(3-methylimidazol-4-yl)butyl]piperidine-3-acetic
acid

5 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(3-methylimidazol-4-yl)thioethyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3-methylimidazol-4-yl)thiopropyl]piperidine-

10 3-acetic acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3-methylpyrazol-4-yl)propyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

15 1-[4-(3-methylpyrazol-4-yl)butyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(3-methylpyrazol-4-yl)thioethyl]piperidine-
3-acetic acid

20 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3-methylpyrazol-4-yl)thiopropyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(oxazol-2-yl)propyl]piperidine-3-acetic acid

25 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(oxazol-2-yl)butyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(oxazol-2-yl)thioethyl]piperidine-3-acetic acid

- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(oxazol-2-yl)thiopropyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(pyridin-2-yl)propyl]piperidine-3-acetic acid
5 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(pyridin-2-yl)butyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(pyridin-2-yl)thioethyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
10 1-[3-(pyridin-2-yl)thiopropyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(pyridin-3-yl)propyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(pyridin-3-yl)butyl]piperidine-3-acetic acid
15 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(pyridin-3-yl)thioethyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(pyridin-3-yl)thiopropyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
20 1-[3-(pyridin-4-yl)propyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(pyridin-4-yl)butyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[5-(pyridin-4-yl)pentyl]piperidine-3-acetic acid
25 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(pyridin-4-yl)thioethyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(pyridin-4-yl)thiopropyl]piperidine-3-acetic acid

- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(pyrimidin-2-yl)propyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(pyrimidin-2-yl)butyl]piperidine-3-acetic acid
5 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(pyrimidin-2-yl)thioethyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(pyrimidin-2-yl)thiopropyl]piperidine-3-acetic
acid
10 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(pyrimidin-4-yl)propyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(pyrimidin-4-yl)butyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
15 1-[2-(pyrimidin-4-yl)thioethyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(pyrimidin-4-yl)thiopropyl]piperidine-3-acetic
acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
20 1-[3-(pyrimidin-5-yl)propyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(pyrimidin-5-yl)butyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(pyrimidin-5-yl)thioethyl]piperidine-3-acetic acid
25 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(pyrimidin-5-yl)thiopropyl]piperidine-3-acetic
acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

- 1-[3-(pyrazin-2-yl)propyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 1-[4-(pyrazin-2-yl)butyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 5 1-[2-(pyrazin-2-yl)thioethyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 1-[3-(pyrazin-2-yl)thiopropyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 1-[3-(pyridazin-3-yl)propyl]piperidine-3-acetic acid
 10 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 1-[4-(pyridazin-3-yl)butyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 1-[2-(pyridazin-3-yl)thioethyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 15 1-[3-(pyridazin-3-yl)thiopropyl]piperidine-3-acetic
 acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 1-[3-(pyridazin-4-yl)propyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 20 1-[4-(pyridazin-4-yl)butyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 1-[2-(pyridazin-4-yl)thioethyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 1-[3-(pyridazin-4-yl)thiopropyl]piperidine-3-acetic
 25 acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
- 1-[3-phenylprop-2-ynyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[3-(2-fluorophenyl)prop-2-ynyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[3-(3-fluorophenyl)prop-2-ynyl]piperidine-3-acetic
5 acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[3-(4-fluorophenyl)prop-2-ynyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

10 1-[3-(2-chlorophenyl)prop-2-ynyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[3-(3-chlorophenyl)prop-2-ynyl]piperidine-3-acetic
acid

15 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[3-(4-chlorophenyl)prop-2-ynyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[3-(2-methylphenyl)prop-2-ynyl]piperidine-3-acetic
20 acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[3-(3-methylphenyl)prop-2-ynyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

25 1-[3-(4-methylphenyl)prop-2-ynyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[3-(2-(trifluoromethyl)phenyl)prop-2-ynyl]piperidine-

3-acetic acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[3-(3-(trifluoromethyl)phenyl)prop-2-ynyl]piperidine-
3-acetic acid

5 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[3-(4-(trifluoromethyl)phenyl)prop-2-ynyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[3-(2-methoxyphenyl)prop-2-ynyl]piperidine-3-acetic
10 acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[3-(3-methoxyphenyl)prop-2-ynyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

15 1-[3-(4-methoxyphenyl)prop-2-ynyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[3-(3,4-difluorophenyl)prop-2-ynyl]piperidine-
3-acetic acid

20 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[3-(2,4-difluorophenyl)prop-2-ynyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[3-(3,4-dichlorophenyl)prop-2-ynyl]piperidine-

25 3-acetic acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[3-(2,3-dichlorophenyl)prop-2-ynyl]piperidine-
3-acetic acid

- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(2,4-dichlorophenyl)prop-2-ynyl]piperidine-
3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
5 1-[3-(2,4,6-trichlorophenyl)prop-2-ynyl]piperidine-
3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3,5-dichlorophenyl)prop-2-ynyl]piperidine-
3-acetic acid
- 10 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(4-chloro-3-fluorophenyl)prop-2-ynyl]piperidine-
3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3-chloro-4-fluorophenyl)prop-2-ynyl]piperidine-
15 3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(2-chloro-4-fluorophenyl)prop-2-ynyl]piperidine-
3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
20 1-[3-(3-chloro-5-fluorophenyl)prop-2-ynyl]piperidine-
3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(4-chloro-2-fluorophenyl)prop-2-ynyl]piperidine-
3-acetic acid
- 25 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3-fluoro-4-methylphenyl)prop-2-ynyl]piperidine-
3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

- 1-[3-(4-chloro-3-(trifluoromethyl)phenyl)prop-2-ynyl]-
piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(2-chloro-4-(trifluoromethyl)phenyl)prop-2-ynyl]-
5 piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(2-chloro-5-(trifluoromethyl)phenyl)prop-2-ynyl]-
piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
10 1-[3-(5-chloro-2-methoxyphenyl)prop-2-ynyl]piperidine-
3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3,5-bis(trifluoromethyl)phenyl)prop-2-ynyl]-
piperidine-3-acetic acid
- 15 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3,5-dimethylphenyl)prop-2-ynyl]piperidine-
3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(2,4-dichloro-6-methylphenyl)prop-2-ynyl]-
20 piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-
(thien-2-yl)prop-2-ynyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(5-chlorothien-2-yl)prop-2-ynyl]piperidine-
25 3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3-chlorothien-2-yl)prop-2-ynyl]piperidine-
3-acetic acid

- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(5-methylthien-2-yl)prop-2-ynyl]piperidine-
3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
5 1-[3-(3-methylthien-2-yl)prop-2-ynyl]piperidine-
3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(thien-3-yl)prop-2-ynyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
10 1-[3-(1-methylpyrrol-2-yl)prop-2-ynyl]piperidine-
3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(1-methylpyrrol-3-yl)prop-2-ynyl]piperidine-
3-acetic acid
- 15 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(thiazol-2-yl)prop-2-ynyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(thiazol-4-yl)prop-2-ynyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
20 1-[3-(thiazol-5-yl)prop-2-ynyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(1-methylimidazol-2-yl)prop-2-ynyl]piperidine-
3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
25 1-[3-(3-methylimidazol-4-yl)prop-2-ynyl]piperidine-
3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3-methylpyrazol-4-yl)prop-2-ynyl]piperidine-

- 3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[3-(oxazol-2-yl)prop-2-ynyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 5 1-[3-(oxazol-4-yl)prop-2-ynyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[3-(oxazol-5-yl)prop-2-ynyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[3-(pyridin-2-yl)prop-2-ynyl]piperidine-3-acetic acid
 10 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[3-(pyridin-3-yl)prop-2-ynyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[3-(pyridin-4-yl)prop-2-ynyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 15 1-[3-(pyrimidin-2-yl)prop-2-ynyl]piperidine-3-acetic
 acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[3-(pyrimidin-4-yl)prop-2-ynyl]piperidine-3-acetic
 acid
 20 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[3-(pyrimidin-5-yl)prop-2-ynyl]piperidine-3-acetic
 acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[3-(pyrazin-2-yl)prop-2-ynyl]piperidine-3-acetic acid
 25 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[3-(pyridazin-3-yl)prop-2-ynyl]piperidine-3-acetic
 acid
 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-

- 1-[3-(pyridazin-4-yl)prop-2-ynyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-phenylpropen-2-yl]piperidine-3-acetic acid
- 5 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[4-phenylbuten-3-yl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-phenylpropyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-phenylbutyl]piperidine-3-acetic acid
- 10 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(2-fluorophenyl)propyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(2-fluorophenyl)butyl]piperidine-3-acetic acid
- 15 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-fluorophenyl)propyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(3-fluorophenyl)butyl]piperidine-3-acetic acid
- 20 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(4-fluorophenyl)propyl]piperidine-3-acetic acid
- 25 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(4-fluorophenyl)butyl]piperidine-3-acetic acid

- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(2,3-difluorophenyl)propyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(2,3-difluorophenyl)butyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(2,6-difluorophenyl)propyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(2,6-difluorophenyl)butyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(2-chlorophenyl)propyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(2-chlorophenyl)butyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-chlorophenyl)propyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(3-chlorophenyl)butyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(4-chlorophenyl)propyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-

propyl]-1-[4-(4-chlorophenyl)butyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2,3-dichlorophenyl)propyl]piperidine-

5 3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(2,3-dichlorophenyl)butyl]piperidine-

3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-

10 propyl]-1-[3-(2,6-dichlorophenyl)propyl]piperidine-

3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(2,6-dichlorophenyl)butyl]piperidine-

3-acetic acid

15 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2-methylphenyl)propyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(2-methylphenyl)butyl]piperidine-3-acetic

20 acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[5-(2-methylphenyl)pentyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-

25 propyl]-1-[3-(3-methylphenyl)propyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(3-methylphenyl)butyl]piperidine-3-acetic

acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(4-methylphenyl)propyl]piperidine-3-acetic acid

- 5 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(4-methylphenyl)butyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(2-methoxyphenyl)propyl]piperidine-

- 10 3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(2-methoxyphenyl)butyl]piperidine-3-acetic acid

- 15 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-methoxyphenyl)propyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(3-methoxyphenyl)butyl]piperidine-3-acetic acid

- 20 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(4-methoxyphenyl)propyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(4-methoxyphenyl)butyl]piperidine-3-acetic

- 25 acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(2-trifluoromethylphenyl)propyl]-piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(2-trifluoromethylphenyl)butyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-trifluoromethylphenyl)propyl]-piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(3-trifluoromethylphenyl)butyl]piperidine-3-acetic acid

10 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(4-trifluoromethylphenyl)propyl]-piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(4-trifluoromethylphenyl)butyl]piperidine-

15 3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-phenylthioethyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-phenylthiopropyl]piperidine-3-acetic acid

20 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(2-fluorophenylthio)ethyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(2-fluorophenylthio)propyl]piperidine-

25 3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(3-fluorophenylthio)ethyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-fluorophenylthio)propyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
5 propyl]-1-[2-(4-fluorophenylthio)ethyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(4-fluorophenylthio)propyl]piperidine-
3-acetic acid

10 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(2,3-difluorophenylthio)ethyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2,3-difluorophenylthio)propyl]piperidine-

15 3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(2,6-difluorophenylthio)ethyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
20 propyl]-1-[3-(2,6-difluorophenylthio)propyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(2-chlorophenylthio)ethyl]piperidine-
3-acetic acid

25 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2-chlorophenylthio)propyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-

- propyl]-1-[2-(3-chlorophenylthio)ethyl]piperidine-
3-acetic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-chlorophenylthio)propyl]piperidine-
5 3-acetic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(4-chlorophenylthio)ethyl]piperidine-
3-acetic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
10 propyl]-1-[3-(4-chlorophenylthio)propyl]piperidine-
3-acetic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(2,3-dichlorophenylthio)ethyl]piperidine-
3-acetic acid
- 15 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2,3-dichlorophenylthio)propyl]piperidine-
3-acetic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(2,6-dichlorophenylthio)ethyl]piperidine-
20 3-acetic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2,6-dichlorophenylthio)propyl]piperidine-
3-acetic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
25 propyl]-1-[2-(2-methylphenylthio)ethyl]piperidine-
3-acetic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2-methylphenylthio)propyl]piperidine-

3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(3-methylphenylthio)ethyl]piperidine-
3-acetic acid

5 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-methylphenylthio)propyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(4-methylphenylthio)ethyl]piperidine-

10 3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(4-methylphenylthio)propyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-

15 propyl]-1-[2-(2-trifluoromethylphenylthio)ethyl]-
piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2-trifluoromethylphenylthio)propyl]-
piperidine-3-acetic acid

20 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(3-trifluoromethylphenylthio)ethyl]-
piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-trifluoromethylphenylthio)propyl]-

25 piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(4-trifluoromethylphenylthio)ethyl]-
piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(4-trifluoromethylphenylthio)propyl]-
piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
5 propyl]-1-[2-(2-methoxyphenylthio)ethyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2-methoxyphenylthio)propyl]piperidine-
3-acetic acid

10 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(3-methoxyphenylthio)ethyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-methoxyphenylthio)propyl]piperidine-
15 3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(4-methoxyphenylthio)ethyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
20 propyl]-1-[3-(4-methoxyphenylthio)propyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[cyclopropylmethyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
25 propyl]-1-[2-(cyclopropyl)ethyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[cyclobutylmethyl]piperidine-3-acetic acid

- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(cyclobutyl)ethyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[cyclopentylmethyl]piperidine-3-acetic acid
- 5 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(cyclopentyl)ethyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[cyclohexylmethyl]piperidine-3-acetic acid
- 10 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(cyclohexyl)ethyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(cyclopropylthio)ethyl]piperidine-3-acetic acid
- 15 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(cyclopropylthio)propyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(cyclobutylthio)ethyl]piperidine-3-acetic acid
- 20 acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(cyclobutylthiopropyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(cyclopentylthio)ethyl]piperidine-3-acetic acid
- 25 acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(cyclopentylthio)propyl]piperidine-

3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2(cyclohexylthio)ethyl]piperidine-3-acetic acid

5 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(cyclohexylthio)propyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-methylthioethyl]piperidine-3-acetic acid

10 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-methylthiopropyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-ethylthioethyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-ethylthiopropyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(n-propylthio)ethyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(n-propylthio)propyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(n-butylthio)ethyl]piperidine-3-acetic acid

25 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(n-butylthio)propyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-

propyl]-1-[3-(thien-2-yl)propyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(thien-2-yl)butyl]piperidine-3-acetic acid

5 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(thien-2-yl)thioethyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(thien-2-yl)thiopropyl]piperidine-3-acetic
10 acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(5-chlorothien-2-yl)propyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
15 propyl]-1-[4-(5-chlorothien-2-yl)butyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(5-chlorothien-2-yl)thioethyl]piperidine-
3-acetic acid

20 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(5-chlorothien-2-yl)thiopropyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-chlorothien-2-yl)propyl]piperidine-
25 3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(3-chlorothien-2-yl)butyl]piperidine-
3-acetic acid

- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(3-chlorothien-2-yl)thioethyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-chlorothien-2-yl)thiopropyl]piperidine-3-acetic acid
- 5 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(5-methylthien-2-yl)propyl]piperidine-3-acetic acid
- 10 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(5-methylthien-2-yl)butyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(5-methylthien-2-yl)thioethyl]piperidine-3-acetic acid
- 15 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(5-methylthien-2-yl)thiopropyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-methylthien-2-yl)propyl]piperidine-3-acetic acid
- 20 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(3-methylthien-2-yl)butyl]piperidine-3-acetic acid
- 25 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(3-methylthien-2-yl)thioethyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-

propyl]-1-[3-(3-methylthien-2-yl)thiopropyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(thien-3-yl)propyl]piperidine-3-acetic

5 acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(thien-3-yl)butyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(thien-3-yl)thioethyl]piperidine-3-acetic

10 acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(thien-3-yl)thiopropyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-

15 propyl]-1-[3-(fur-2-yl)propyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(fur-2-yl)butyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(fur-2-yl)thioethyl]piperidine-3-acetic

20 acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(fur-2-yl)thiopropyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-

25 propyl]-1-[3-(fur-3-yl)propyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(fur-3-yl)butyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-

propyl]-1-[2-(fur-3-yl)thioethyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(fur-3-yl)thiopropyl]piperidine-3-acetic

5 acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(1-methylpyrrol-2-yl)propyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
10 propyl]-1-[4-(1-methylpyrrol-2-yl)butyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(1-methylpyrrol-2-yl)thioethyl]piperidine-
3-acetic acid

15 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(1-methylpyrrol-2-yl)thiopropyl]-
piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(1-methylpyrrol-2-yl)propyl]piperidine-

20 3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(1-methylpyrrol-3-yl)butyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
25 propyl]-1-[2-(1-methylpyrrol-3-yl)thioethyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(1-methylpyrrol-3-yl)thiopropyl]-

piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(thiazol-2-yl)propyl]piperidine-3-acetic acid

- 5 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(thiazol-2-yl)butyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(thiazol-2-yl)thioethyl]piperidine-

- 10 3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(thiazol-2-yl)thiopropyl]piperidine-3-acetic acid

- 15 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(1-methylimidazol-2-yl)propyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(1-methylimidazol-2-yl)butyl]piperidine-3-acetic acid

- 20 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(1-methylimidazol-2-yl)thioethyl]-piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(1-methylimidazol-2-yl)thiopropyl]-

- 25 piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-methylimidazol-4-yl)propyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(3-methylimidazol-4-yl)butyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(3-methylimidazol-4-yl)thioethyl]-piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-methylimidazol-4-yl)thiopropyl]-piperidine-3-acetic acid

10 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-methylpyrazol-4-yl)propyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(3-methylpyrazol-4-yl)butyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(3-methylpyrazol-4-yl)thioethyl]-piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-methylpyrazol-4-yl)thiopropyl]-piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(oxazol-2-yl)propyl]piperidine-3-acetic acid

25 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(oxazol-2-yl)butyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-

propyl]-1-[2-(oxazol-2-yl)thioethyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(oxazol-2-yl)thiopropyl]piperidine-

5 3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyridin-2-yl)propyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
10 propyl]-1-[4-(pyridin-2-yl)butyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(pyridin-2-yl)thioethyl]piperidine-
3-acetic acid

15 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyridin-2-yl)thiopropyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyridin-3-yl)propyl]piperidine-3-acetic

20 acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(pyridin-3-yl)butyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
25 propyl]-1-[2-(pyridin-3-yl)thioethyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyridin-3-yl)thiopropyl]piperidine-

3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyridin-4-yl)propyl]piperidine-3-acetic acid

5 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(pyridin-4-yl)butyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[5-(pyridin-4-yl)pentyl]piperidine-3-acetic

10 acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(pyridin-4-yl)thioethyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyridin-4-yl)thiopropyl]piperidine-3-acetic acid

15 3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyrimidin-2-yl)propyl]piperidine-3-acetic acid

20 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(pyrimidin-2-yl)butyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(pyrimidin-2-yl)thioethyl]piperidine-

25 3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyrimidin-2-yl)thiopropyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyrimidin-4-yl)propyl]piperidine-3-acetic acid

5 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(pyrimidin-4-yl)butyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(pyrimidin-4-yl)thioethyl]piperidine-3-acetic acid

10 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyrimidin-4-yl)thiopropyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyrimidin-5-yl)propyl]piperidine-3-acetic acid

15

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(pyrimidin-5-yl)butyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(pyrimidin-5-yl)thioethyl]piperidine-3-acetic acid

20

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyrimidin-5-yl)thiopropyl]piperidine-3-acetic acid

25 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyrazin-2-yl)propyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-

propyl]-1-[4-(pyrazin-2-yl)butyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(pyrazin-2-yl)thioethyl]piperidine-

5 3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyrazin-2-yl)thiopropyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
10 propyl]-1-[3-(pyridazin-3-yl)propyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(pyridazin-3-yl)butyl]piperidine-3-acetic
acid

15 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(pyridazin-3-yl)thioethyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyridazin-3-yl)thiopropyl]piperidine-

20 3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyridazin-4-yl)propyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
25 propyl]-1-[4-(pyridazin-4-yl)butyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(pyridazin-4-yl)thioethyl]piperidine-

3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyridazin-4-yl)thiopropyl]piperidine-
3-acetic acid

- 5 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-phenylprop-2-ynyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2-fluorophenyl)prop-2-ynyl]piperidine-
3-acetic acid

- 10 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-fluorophenyl)prop-2-ynyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(4-fluorophenyl)prop-2-ynyl]piperidine-

- 15 3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2-chlorophenyl)prop-2-ynyl]piperidine-
3-acetic acid

- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
20 propyl]-1-[3-(3-chlorophenyl)prop-2-ynyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(4-chlorophenyl)prop-2-ynyl]piperidine-
3-acetic acid

- 25 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2-methylphenyl)prop-2-ynyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-

- propyl]-1-[3-(3-methylphenyl)prop-2-ynyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(4-methylphenyl)prop-2-ynyl]piperidine-3-acetic acid
- 5 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(2-(trifluoromethyl)phenyl)prop-2-ynyl]-piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-(trifluoromethyl)phenyl)prop-2-ynyl]-piperidine-3-acetic acid
- 10 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(4-(trifluoromethyl)phenyl)prop-2-ynyl]-piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(2-methoxyphenyl)prop-2-ynyl]piperidine-3-acetic acid
- 15 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-methoxyphenyl)prop-2-ynyl]piperidine-3-acetic acid
- 20 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(4-methoxyphenyl)prop-2-ynyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3,4-difluorophenyl)prop-2-ynyl]-piperidine-3-acetic acid
- 25 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(2,4-difluorophenyl)prop-2-ynyl]-

- piperidine-3-acetic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(3,4-dichlorophenyl)prop-2-ynyl]-
 piperidine-3-acetic acid
- 5 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(2,3-dichlorophenyl)prop-2-ynyl]-
 piperidine-3-acetic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(2,4-dichlorophenyl)prop-2-ynyl]-
- 10 piperidine-3-acetic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(2,4,6-trichlorophenyl)prop-2-ynyl]-
 piperidine-3-acetic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
- 15 propyl]-1-[3-(3,5-dichlorophenyl)prop-2-ynyl]-
 piperidine-3-acetic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(4-chloro-3-fluorophenyl)prop-2-ynyl]-
 piperidine-3-acetic acid
- 20 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(3-chloro-4-fluorophenyl)prop-2-ynyl]-
 piperidine-3-acetic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(2-chloro-4-fluorophenyl)prop-2-ynyl]-
- 25 piperidine-3-acetic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(3-chloro-5-fluorophenyl)prop-2-ynyl]-
 piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(4-chloro-2-fluorophenyl)prop-2-ynyl]-
piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
5 propyl]-1-[3-(3-fluoro-4-methylphenyl)prop-2-ynyl]-
piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(4-chloro-3-(trifluoromethyl)phenyl)prop-
2-ynyl]piperidine-3-acetic acid

10 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2-chloro-4-(trifluoromethyl)phenyl)prop-
2-ynyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2-chloro-5-(trifluoromethyl)phenyl)prop-
15 2-ynyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(5-chloro-2-methoxyphenyl)prop-2-ynyl]-
piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
20 propyl]-1-[3-(3,5-bis(trifluoromethyl)phenyl)prop-
2-ynyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3,5-dimethylphenyl)prop-2-ynyl]-
piperidine-3-acetic acid

25 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2,4-dichloro-6-methylphenyl)prop-2-ynyl]-
piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-

- propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(5-chlorothien-2-yl)prop-2-ynyl]-
- 5 piperidine-3-acetic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-chlorothien-2-yl)prop-2-ynyl]-piperidine-3-acetic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
- 10 propyl]-1-[3-(5-methylthien-2-yl)prop-2-ynyl]-piperidine-3-acetic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-methylthien-2-yl)prop-2-ynyl]-piperidine-3-acetic acid
- 15 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(thien-3-yl)prop-2-ynyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(1-methylpyrrol-2-yl)prop-2-ynyl]-
- 20 piperidine-3-acetic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(1-methylpyrrol-3-yl)prop-2-ynyl]-piperidine-3-acetic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
- 25 propyl]-1-[3-(thiazol-2-yl)prop-2-ynyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(thiazol-4-yl)prop-2-ynyl]piperidine-

3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(thiazol-5-yl)prop-2-ynyl]piperidine-
3-acetic acid

5 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(1-methylimidazol-2-yl)prop-2-ynyl]-
piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-methylimidazol-4-yl)prop-2-ynyl]-

10 piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-methylpyrazol-4-yl)prop-2-ynyl]-
piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-

15 propyl]-1-[3-(oxazol-2-yl)prop-2-ynyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(oxazol-4-yl)prop-2-ynyl]piperidine-
3-acetic acid

20 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(oxazol-5-yl)prop-2-ynyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyridin-2-yl)prop-2-ynyl]piperidine-

25 3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyridin-3-yl)prop-2-ynyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyridin-4-yl)prop-2-ynyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
5 propyl]-1-[3-(pyrimidin-2-yl)prop-2-ynyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyrimidin-4-yl)prop-2-ynyl]piperidine-
3-acetic acid

10 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyrimidin-5-yl)prop-2-ynyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyrazin-2-yl)prop-2-ynyl]piperidine-

15 3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyridazin-3-yl)prop-2-ynyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
20 propyl]-1-[3-(pyridazin-4-yl)prop-2-ynyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-phenylpropen-2-yl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
25 propyl]-1-[4-phenylbuten-3-yl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-phenylpropyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-

- propyl]-1-[4-phenylbutyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(2-fluorophenyl)propyl]piperidine-3-acetic
 acid
- 5 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[4-(2-fluorophenyl)butyl]piperidine-3-acetic
 acid
 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(3-fluorophenyl)propyl]piperidine-3-acetic
 10 acid
 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[4-(3-fluorophenyl)butyl]piperidine-3-acetic
 acid
 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
 15 propyl]-1-[3-(4-fluorophenyl)propyl]piperidine-3-acetic
 acid
 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[4-(4-fluorophenyl)butyl]piperidine-3-acetic
 acid
- 20 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(2,3-difluorophenyl)propyl]piperidine-
 3-acetic acid
 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[4-(2,3-difluorophenyl)butyl]piperidine-
 25 3-acetic acid
 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(2,6-difluorophenyl)propyl]piperidine-
 3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(2,6-difluorophenyl)butyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
5 propyl]-1-[3-(2-chlorophenyl)propyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(2-chlorophenyl)butyl]piperidine-3-acetic
acid

10 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-chlorophenyl)propyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(3-chlorophenyl)butyl]piperidine-3-acetic
15 acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(4-chlorophenyl)propyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
20 propyl]-1-[4-(4-chlorophenyl)butyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2,3-dichlorophenyl)propyl]piperidine-
3-acetic acid

25 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(2,3-dichlorophenyl)butyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-

- propyl]-1-[3-(2,6-dichlorophenyl)propyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(2,6-dichlorophenyl)butyl]piperidine-3-acetic acid
- 5 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(2-methylphenyl)propyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(2-methylphenyl)butyl]piperidine-3-acetic acid
- 10 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[5-(2-methylphenyl)pentyl]piperidine-3-acetic acid
- 15 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-methylphenyl)propyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(3-methylphenyl)butyl]piperidine-3-acetic acid
- 20 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(4-methylphenyl)propyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(4-methylphenyl)butyl]piperidine-3-acetic acid
- 25 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(2-methoxyphenyl)propyl]piperidine-

3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(2-methoxyphenyl)butyl]piperidine-3-acetic acid

- 5 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-methoxyphenyl)propyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(3-methoxyphenyl)butyl]piperidine-3-acetic

10 acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(4-methoxyphenyl)propyl]piperidine-3-acetic acid

- 15 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(4-methoxyphenyl)butyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(2-trifluoromethylphenyl)propyl]-piperidine-3-acetic acid

- 20 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(2-trifluoromethylphenyl)butyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-trifluoromethylphenyl)propyl]-

- 25 piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(3-trifluoromethylphenyl)butyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(4-trifluoromethylphenyl)propyl]-
piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
5 propyl]-1-[4-(4-trifluoromethylphenyl)butyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-phenylthioethyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
10 propyl]-1-[3-phenylthiopropyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(2-fluorophenylthio)ethyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
15 propyl]-1-[3-(2-fluorophenylthio)propyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(3-fluorophenylthio)ethyl]piperidine-
3-acetic acid

20 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-fluorophenylthio)propyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(4-fluorophenylthio)ethyl]piperidine-
25 3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(4-fluorophenylthio)propyl]piperidine-
3-acetic acid

- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(2,3-difluorophenylthio)ethyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(2,3-difluorophenylthio)propyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(2,6-difluorophenylthio)ethyl]piperidine-3-acetic acid
- 10 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(2,6-difluorophenylthio)propyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(2-chlorophenylthio)ethyl]piperidine-3-acetic acid
- 15 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(2-chlorophenylthio)propyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(3-chlorophenylthio)ethyl]piperidine-3-acetic acid
- 20 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-chlorophenylthio)propyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(4-chlorophenylthio)ethyl]piperidine-3-acetic acid
- 25 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(4-chlorophenylthio)ethyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-

- propyl]-1-[3-(4-chlorophenylthio)propyl]piperidine-
3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(2,3-dichlorophenylthio)ethyl]piperidine-
5 3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2,3-dichlorophenylthio)propyl]piperidine-
3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
10 propyl]-1-[2-(2,6-dichlorophenylthio)ethyl]piperidine-
3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2,6-dichlorophenylthio)propyl]piperidine-
3-acetic acid
- 15 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(2-methylphenylthio)ethyl]piperidine-
3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2-methylphenylthio)propyl]piperidine-
20 3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(3-methylphenylthio)ethyl]piperidine-
3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
25 propyl]-1-[3-(3-methylphenylthio)propyl]piperidine-
3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(4-methylphenylthio)ethyl]piperidine-

3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(4-methylphenylthio)propyl]piperidine-
3-acetic acid

5 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(2-trifluoromethylphenylthio)ethyl]-
piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2-trifluoromethylphenylthio)propyl]-

10 piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(3-trifluoromethylphenylthio)ethyl]-
piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
15 propyl]-1-[3-(3-trifluoromethylphenylthio)propyl]-
piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(4-trifluoromethylphenylthio)ethyl]-
piperidine-3-acetic acid

20 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(4-trifluoromethylphenylthio)propyl]-
piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(2-methoxyphenylthio)ethyl]piperidine-

25 3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2-methoxyphenylthio)propyl]piperidine-
3-acetic acid

- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(3-methoxyphenylthio)ethyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-methoxyphenylthio)propyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(4-methoxyphenylthio)ethyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(4-methoxyphenylthio)propyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[cyclopropylmethyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(cyclopropyl)ethyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[cyclobutylmethyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(cyclobutyl)ethyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[cyclopentylmethyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(cyclopentyl)ethyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[cyclohexylmethyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(cyclohexyl)ethyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(cyclopropylthio)ethyl]piperidine-3-acetic

5 acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(cyclopropylthio)propyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
10 propyl]-1-[2-(cyclobutylthio)ethyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(cyclobutylthiopropyl]piperidine-3-acetic
acid

15 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(cyclopentylthio)ethyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(cyclopentylthio)propyl]piperidine-

20 3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(cyclohexylthio)ethyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
25 propyl]-1-[3-(cyclohexylthio)propyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-methylthioethyl]piperidine-3-acetic acid

- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-methylthiopropyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
5 propyl]-1-[2-ethylthioethyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-ethylthiopropyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(n-propylthio)ethyl]piperidine-3-acetic
10 acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(n-propylthio)propyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
15 propyl]-1-[2-(n-butylthio)ethyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(n-butylthio)propyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
20 propyl]-1-[3-(thien-2-yl)propyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(thien-2-yl)butyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
25 propyl]-1-[2-(thien-2-yl)thioethyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-

propyl]-1-[3-(thien-2-yl)thiopropyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(5-chlorothien-2-yl)propyl]piperidine-

5 3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(5-chlorothien-2-yl)butyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(5-chlorothien-2-yl)thioethyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(5-chlorothien-2-yl)thiopropyl]piperidine-3-acetic acid

15 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-chlorothien-2-yl)propyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(3-chlorothien-2-yl)butyl]piperidine-

20 3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(3-chlorothien-2-yl)thioethyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-chlorothien-2-yl)thiopropyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(5-methylthien-2-yl)propyl]piperidine-

3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(5-methylthien-2-yl)butyl]piperidine-
3-acetic acid

5 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(5-methylthien-2-yl)thioethyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(5-methylthien-2-yl)thiopropyl]piperidine-

10 3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-methylthien-2-yl)propyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
15 propyl]-1-[4-(3-methylthien-2-yl)butyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(3-methylthien-2-yl)thioethyl]piperidine-
3-acetic acid

20 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-methylthien-2-yl)thiopropyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(thien-3-yl)propyl]piperidine-3-acetic

25 acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(thien-3-yl)butyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-

propyl]-1-[2-(thien-3-yl)thioethyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(thien-3-yl)thiopropyl]piperidine-3-acetic

5 acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(fur-2-yl)propyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(fur-2-yl)butyl]piperidine-3-acetic acid

10 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(fur-2-yl)thioethyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(fur-2-yl)thiopropyl]piperidine-3-acetic

15 acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(fur-3-yl)propyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(fur-3-yl)butyl]piperidine-3-acetic acid

20 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(fur-3-yl)thioethyl]piperidine-3-acetic
acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(fur-3-yl)thiopropyl]piperidine-3-acetic

25 acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(1-methylpyrrol-2-yl)propyl]piperidine-
3-acetic acid

- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(1-methylpyrrol-2-yl)butyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(1-methylpyrrol-2-yl)thioethyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(1-methylpyrrol-2-yl)thiopropyl]-piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(1-methylpyrrol-2-yl)propyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(1-methylpyrrol-3-yl)butyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(1-methylpyrrol-3-yl)thioethyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(1-methylpyrrol-3-yl)thiopropyl]-piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(thiazol-2-yl)propyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(thiazol-2-yl)butyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-

- propyl]-1-[2-(thiazol-2-yl)thioethyl]piperidine-
3-acetic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(thiazol-2-yl)thiopropyl]piperidine-
5 3-acetic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(1-methylimidazol-2-yl)propyl]piperidine-
3-acetic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
10 propyl]-1-[4-(1-methylimidazol-2-yl)butyl]piperidine-
3-acetic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(1-methylimidazol-2-yl)thioethyl]-
piperidine-3-acetic acid
15 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(1-methylimidazol-2-yl)thiopropyl]-
piperidine-3-acetic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-methylimidazol-4-yl)propyl]piperidine-
20 3-acetic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-(3-methylimidazol-4-yl)butyl]piperidine-
3-acetic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
25 propyl]-1-[2-(3-methylimidazol-4-yl)thioethyl]-
piperidine-3-acetic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-methylimidazol-4-yl)thiopropyl]-

piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-methylpyrazol-4-yl)propyl]piperidine-3-acetic acid

- 5 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(3-methylpyrazol-4-yl)butyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(3-methylpyrazol-4-yl)thioethyl]-

- 10 piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-methylpyrazol-4-yl)thiopropyl]-

piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-

- 15 propyl]-1-[3-(oxazol-2-yl)propyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(oxazol-2-yl)butyl]piperidine-3-acetic acid

- 20 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(oxazol-2-yl)thioethyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(oxazol-2-yl)thiopropyl]piperidine-

- 25 3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyridin-2-yl)propyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(pyridin-2-yl)butyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(pyridin-2-yl)thioethyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyridin-2-yl)thiopropyl]piperidine-3-acetic acid

10 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyridin-3-yl)propyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(pyridin-3-yl)butyl]piperidine-3-acetic acid

15 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(pyridin-3-yl)thioethyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyridin-3-yl)thiopropyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyridin-4-yl)propyl]piperidine-3-acetic acid

25 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(pyridin-4-yl)butyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-

- propyl]-1-[5-(pyridin-4-yl)pentyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(pyridin-4-yl)thioethyl]piperidine-
- 5 3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyridin-4-yl)thiopropyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
- 10 propyl]-1-[3-(pyrimidin-2-yl)propyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(pyrimidin-2-yl)butyl]piperidine-3-acetic acid
- 15 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(pyrimidin-2-yl)thioethyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyrimidin-2-yl)thiopropyl]piperidine-
- 20 3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyrimidin-4-yl)propyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
- 25 propyl]-1-[4-(pyrimidin-4-yl)butyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(pyrimidin-4-yl)thioethyl]piperidine-

- 3-acetic acid
 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(pyrimidin-4-yl)thiopropyl]piperidine-
 3-acetic acid
- 5 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(pyrimidin-5-yl)propyl]piperidine-3-acetic
 acid
 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[4-(pyrimidin-5-yl)butyl]piperidine-3-acetic
 10 acid
 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[2-(pyrimidin-5-yl)thioethyl]piperidine-
 3-acetic acid
 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
 15 propyl]-1-[3-(pyrimidin-5-yl)thiopropyl]piperidine-
 3-acetic acid
 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(pyrazin-2-yl)propyl]piperidine-3-acetic
 acid
 20 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[4-(pyrazin-2-yl)butyl]piperidine-3-acetic
 acid
 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[2-(pyrazin-2-yl)thioethyl]piperidine-
 25 3-acetic acid
 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(pyrazin-2-yl)thiopropyl]piperidine-
 3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyridazin-3-yl)propyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(pyridazin-3-yl)butyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(pyridazin-3-yl)thioethyl]piperidine-3-acetic acid

10 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyridazin-3-yl)thiopropyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyridazin-4-yl)propyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[4-(pyridazin-4-yl)butyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(pyridazin-4-yl)thioethyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(pyridazin-4-yl)thiopropyl]piperidine-3-acetic acid

25 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-phenylprop-2-ynyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(2-fluorophenyl)prop-2-ynyl]piperidine-

3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-fluorophenyl)prop-2-ynyl]piperidine-
3-acetic acid

5 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(4-fluorophenyl)prop-2-ynyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2-chlorophenyl)prop-2-ynyl]piperidine-

10 3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-chlorophenyl)prop-2-ynyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
15 propyl]-1-[3-(4-chlorophenyl)prop-2-ynyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2-methylphenyl)prop-2-ynyl]piperidine-
3-acetic acid

20 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-methylphenyl)prop-2-ynyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(4-methylphenyl)prop-2-ynyl]piperidine-

25 3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2-(trifluoromethyl)phenyl)prop-2-ynyl]-
piperidine-3-acetic acid

- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-(trifluoromethyl)phenyl)prop-2-ynyl]-piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(4-(trifluoromethyl)phenyl)prop-2-ynyl]-piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(2-methoxyphenyl)prop-2-ynyl]piperidine-3-acetic acid
- 10 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-methoxyphenyl)prop-2-ynyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(4-methoxyphenyl)prop-2-ynyl]piperidine-3-acetic acid
- 15 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3,4-difluorophenyl)prop-2-ynyl]-piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(2,4-difluorophenyl)prop-2-ynyl]-piperidine-3-acetic acid
- 20 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3,4-dichlorophenyl)prop-2-ynyl]-piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(2,3-dichlorophenyl)prop-2-ynyl]-piperidine-3-acetic acid
- 25 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(2,3-dichlorophenyl)prop-2-ynyl]-piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-

- propyl]-1-[3-(2,4-dichlorophenyl)prop-2-ynyl]-
piperidine-3-acetic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2,4,6-trichlorophenyl)prop-2-ynyl]-
5 piperidine-3-acetic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3,5-dichlorophenyl)prop-2-ynyl]-
piperidine-3-acetic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
10 propyl]-1-[3-(4-chloro-3-fluorophenyl)prop-2-ynyl]-
piperidine-3-acetic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-chloro-4-fluorophenyl)prop-2-ynyl]-
piperidine-3-acetic acid
15 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2-chloro-4-fluorophenyl)prop-2-ynyl]-
piperidine-3-acetic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-chloro-5-fluorophenyl)prop-2-ynyl]-
20 piperidine-3-acetic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(4-chloro-2-fluorophenyl)prop-2-ynyl]-
piperidine-3-acetic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
25 propyl]-1-[3-(3-fluoro-4-methylphenyl)prop-2-ynyl]-
piperidine-3-acetic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(4-chloro-3-(trifluoromethyl)phenyl)prop-

- 2-ynyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(2-chloro-4-(trifluoromethyl)phenyl)prop-
 2-ynyl]piperidine-3-acetic acid
- 5 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(2-chloro-5-(trifluoromethyl)phenyl)prop-
 2-ynyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(5-chloro-2-methoxyphenyl)prop-2-ynyl]-
- 10 piperidine-3-acetic acid
 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(3,5-bis(trifluoromethyl)phenyl)prop-
 2-ynyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
- 15 propyl]-1-[3-(3,5-dimethylphenyl)prop-2-ynyl]-
 piperidine-3-acetic acid
 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(2,4-dichloro-6-methylphenyl)prop-2-ynyl]-
 piperidine-3-acetic acid
- 20 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-
 3-acetic acid
 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(5-chlorothien-2-yl)prop-2-ynyl]-
- 25 piperidine-3-acetic acid
 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(3-chlorothien-2-yl)prop-2-ynyl]-
 piperidine-3-acetic acid

- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(5-methylthien-2-yl)prop-2-ynyl]-piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-methylthien-2-yl)prop-2-ynyl]-piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(thien-3-yl)prop-2-ynyl]piperidine-3-acetic acid
- 10 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(1-methylpyrrol-2-yl)prop-2-ynyl]-piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(1-methylpyrrol-3-yl)prop-2-ynyl]-piperidine-3-acetic acid
- 15 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(thiazol-2-yl)prop-2-ynyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(thiazol-4-yl)prop-2-ynyl]piperidine-3-acetic acid
- 20 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(thiazol-5-yl)prop-2-ynyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(1-methylimidazol-2-yl)prop-2-ynyl]-piperidine-3-acetic acid
- 25 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(1-methylimidazol-2-yl)prop-2-ynyl]-piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-

- propyl]-1-[3-(3-methylimidazol-4-yl)prop-2-ynyl]-
piperidine-3-acetic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-methylpyrazol-4-yl)prop-2-ynyl]-
5 piperidine-3-acetic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(oxazol-2-yl)prop-2-ynyl]piperidine-
3-acetic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
10 propyl]-1-[3-(oxazol-4-yl)prop-2-ynyl]piperidine-
3-acetic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(oxazol-5-yl)prop-2-ynyl]piperidine-
3-acetic acid
15 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyridin-2-yl)prop-2-ynyl]piperidine-
3-acetic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyridin-3-yl)prop-2-ynyl]piperidine-
20 3-acetic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyridin-4-yl)prop-2-ynyl]piperidine-
3-acetic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
25 propyl]-1-[3-(pyrimidin-2-yl)prop-2-ynyl]piperidine-
3-acetic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyrimidin-4-yl)prop-2-ynyl]piperidine-

3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyrimidin-5-yl)prop-2-ynyl]piperidine-
3-acetic acid

5 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyrazin-2-yl)prop-2-ynyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyridazin-3-yl)prop-2-ynyl]piperidine-
10 3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(pyridazin-4-yl)prop-2-ynyl]piperidine-
3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
15 propyl]-1-[3-phenylpropen-2-yl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)-
propyl]-1-[4-phenylbuten-3-yl]piperidine-3-acetic acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-phenylpropyl]piperidin-3-yl}propan-1-oic acid

20 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-phenylbutyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(2-fluorophenyl)propyl]piperidin-3-yl}propan-1-oic
acid

25 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(2-fluorophenyl)butyl]piperidin-3-yl}propan-1-oic
acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-

- 1-[3-(3-fluorophenyl)propyl]piperidin-3-yl}propan-1-oic
acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[4-(3-fluorophenyl)butyl]piperidin-3-yl}propan-1-oic
5 acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(4-fluorophenyl)propyl]piperidin-3-yl}propan-1-oic
acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
10 1-[4-(4-fluorophenyl)butyl]piperidin-3-yl}propan-1-oic
acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(2,3-difluorophenyl)propyl]piperidin-3-yl}propan-
1-oic acid
- 15 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[4-(2,3-difluorophenyl)butyl]piperidin-3-yl}propan-
1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(2,6-difluorophenyl)propyl]piperidin-3-yl}propan-
20 1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[4-(2,6-difluorophenyl)butyl]piperidin-3-yl}propan-
1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
25 1-[3-(2-chlorophenyl)propyl]piperidin-3-yl}propan-1-oic
acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[4-(2-chlorophenyl)butyl]piperidin-3-yl}propan-1-oic

acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3-chlorophenyl)propyl]piperidin-3-yl}propan-1-oic
acid

5 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(3-chlorophenyl)butyl]piperidin-3-yl}propan-1-oic
acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(4-chlorophenyl)propyl]piperidin-3-yl}propan-1-oic

10 acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(4-chlorophenyl)butyl]piperidin-3-yl}propan-1-oic
acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-

15 1-[3-(2,3-dichlorophenyl)propyl]piperidin-3-yl}propan-
1-oic acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(2,3-dichlorophenyl)butyl]piperidin-3-yl}propan-
1-oic acid

20 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(2,6-dichlorophenyl)propyl]piperidin-3-yl}propan-
1-oic acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(2,6-dichlorophenyl)butyl]piperidin-3-yl}propan-

25 1-oic acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(2-methylphenyl)propyl]piperidin-3-yl}propan-1-oic
acid

- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[4-(2-methylphenyl)butyl]piperidin-3-yl}propan-1-oic
acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
5 1-[5-(2-methylphenyl)pentyl]piperidin-3-yl}propan-1-oic
acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(3-methylphenyl)propyl]piperidin-3-yl}propan-1-oic
acid
- 10 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[4-(3-methylphenyl)butyl]piperidin-3-yl}propan-1-oic
acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(4-methylphenyl)propyl]piperidin-3-yl}propan-1-oic
15 acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[4-(4-methylphenyl)butyl]piperidin-3-yl}propan-1-oic
acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
20 1-[3-(2-methoxyphenyl)propyl]piperidin-3-yl}propan-
1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[4-(2-methoxyphenyl)butyl]piperidin-3-yl}propan-1-oic
acid
- 25 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(3-methoxyphenyl)propyl]piperidin-3-yl}propan-
1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-

- 1-[4-(3-methoxyphenyl)butyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 1-[3-(4-methoxyphenyl)propyl]piperidin-3-yl}propan-
 5 1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 1-[4-(4-methoxyphenyl)butyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 10 1-[3-(2-trifluoromethylphenyl)propyl]piperidin-3-yl}-
 propan-1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 1-[4-(2-trifluoromethylphenyl)butyl]piperidin-3-yl}-
 propan-1-oic acid
 15 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 1-[3-(3-trifluoromethylphenyl)propyl]piperidin-3-yl}-
 propan-1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 1-[4-(3-trifluoromethylphenyl)butyl]piperidin-3-yl}-
 20 propan-1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 1-[3-(4-trifluoromethylphenyl)propyl]piperidin-3-yl}-
 propan-1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 25 1-[4-(4-trifluoromethylphenyl)butyl]piperidin-3-yl}-
 propan-1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 1-[2-phenylthioethyl]piperidin-3-yl}propan-1-oic acid

- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-phenylthiopropyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[2-(2-fluorophenylthio)ethyl]piperidin-3-yl}propan-
5 1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(2-fluorophenylthio)propyl]piperidin-3-yl}propan-
1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
10 1-[2-(3-fluorophenylthio)ethyl]piperidin-3-yl}propan-
1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(3-fluorophenylthio)propyl]piperidin-3-yl}propan-
1-oic acid
- 15 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[2-(4-fluorophenylthio)ethyl]piperidin-3-yl}propan-
1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(4-fluorophenylthio)propyl]piperidin-3-yl}propan-
20 1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[2-(2,3-difluorophenylthio)ethyl]piperidin-3-yl}-
propan-1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
25 1-[3-(2,3-difluorophenylthio)propyl]piperidin-3-yl}-
propan-1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[2-(2,6-difluorophenylthio)ethyl]piperidin-3-yl}-

propan-1-oic acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(2,6-difluorophenylthio)propyl]piperidin-3-yl}-
propan-1-oic acid

5 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[2-(2-chlorophenylthio)ethyl]piperidin-3-yl}propan-
1-oic acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(2-chlorophenylthio)propyl]piperidin-3-yl}propan-

10 1-oic acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[2-(3-chlorophenylthio)ethyl]piperidin-3-yl}propan-
1-oic acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-

15 1-[3-(3-chlorophenylthio)propyl]piperidin-3-yl}propan-
1-oic acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[2-(4-chlorophenylthio)ethyl]piperidin-3-yl}propan-
1-oic acid

20 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(4-chlorophenylthio)propyl]piperidin-3-yl}propan-
1-oic acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[2-(2,3-dichlorophenylthio)ethyl]piperidin-3-yl}-

25 propan-1-oic acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(2,3-dichlorophenylthio)propyl]piperidin-3-yl}-
propan-1-oic acid

- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[2-(2,6-dichlorophenylthio)ethyl]piperidin-3-yl}-
propan-1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
5 1-[3-(2,6-dichlorophenylthio)propyl]piperidin-3-yl}-
propan-1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[2-(2-methylphenylthio)ethyl]piperidin-3-yl}propan-
1-oic acid
- 10 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(2-methylphenylthio)propyl]piperidin-3-yl}propan-
1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[2-(3-methylphenylthio)ethyl]piperidin-3-yl}propan-
15 1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(3-methylphenylthio)propyl]piperidin-3-yl}propan-
1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
20 1-[2-(4-methylphenylthio)ethyl]piperidin-3-yl}propan-
1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(4-methylphenylthio)propyl]piperidin-3-yl}propan-
1-oic acid
- 25 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[2-(2-trifluoromethylphenylthio)ethyl]piperidin-
3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-

- 1-[3-(2-trifluoromethylphenylthio)propyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-1-[2-(3-trifluoromethylphenylthio)ethyl]piperidin-3-yl}propan-1-oic acid
- 5 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-1-[3-(3-trifluoromethylphenylthio)propyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-1-[2-(4-trifluoromethylphenylthio)ethyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-1-[3-(4-trifluoromethylphenylthio)propyl]piperidin-3-yl}propan-1-oic acid
- 10 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-1-[2-(2-methoxyphenylthio)ethyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-1-[3-(2-methoxyphenylthio)propyl]piperidin-3-yl}propan-1-oic acid
- 15 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-1-[2-(3-methoxyphenylthio)ethyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-1-[3-(3-methoxyphenylthio)propyl]piperidin-3-yl}propan-1-oic acid
- 20 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-1-[2-(4-methoxyphenylthio)ethyl]piperidin-3-yl}propan-
- 25 1-[3-(3-methoxyphenylthio)propyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-1-[2-(4-methoxyphenylthio)ethyl]piperidin-3-yl}propan-

- 1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 1-[3-(4-methoxyphenylthio)propyl]piperidin-3-yl}propan-
 1-oic acid
- 5 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 1-[cyclopropylmethyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 1-[2-(cyclopropyl)ethyl]piperidin-3-yl}propan-1-oic
 acid
- 10 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 1-[cyclobutylmethyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 1-[2-(cyclobutyl)ethyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
- 15 1-[cyclopentylmethyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 1-[2-(cyclopentyl)ethyl]piperidin-3-yl}propan-1-oic
 acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
- 20 1-[cyclohexylmethyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 1-[2-(cyclohexyl)ethyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 1-[2-(cyclopropylthio)ethyl]piperidin-3-yl}propan-1-oic
- 25 acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 1-[3-(cyclopropylthio)propyl]piperidin-3-yl}propan-
 1-oic acid

- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[2-(cyclobutylthio)ethyl]piperidin-3-yl}propan-1-oic
acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
5 1-[3-(cyclobutylthiopropyl)piperidin-3-yl}propan-1-oic
acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[2-(cyclopentylthio)ethyl]piperidin-3-yl}propan-1-oic
acid
- 10 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(cyclopentylthio)propyl]piperidin-3-yl}propan-
1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[2-(cyclohexylthio)ethyl]piperidin-3-yl}propan-1-oic
15 acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(cyclohexylthio)propyl]piperidin-3-yl}propan-1-oic
acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
20 1-[2-methylthioethyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-methylthiopropyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[2-ethylthioethyl]piperidin-3-yl}propan-1-oic acid
- 25 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-ethylthiopropyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[2-(n-propylthio)ethyl]piperidin-3-yl}propan-1-oic

acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(n-propylthio)propyl]piperidin-3-yl}propan-1-oic
acid

- 5 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(n-butylthio)ethyl]piperidin-3-yl}propan-1-oic
acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(n-butylthio)propyl]piperidin-3-yl}propan-1-oic

- 10 acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(thien-2-yl)propyl]piperidin-3-yl}propan-1-oic
acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-

- 15 1-[4-(thien-2-yl)butyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(thien-2-yl)thioethyl]piperidin-3-yl}propan-1-oic
acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-

- 20 1-[3-(thien-2-yl)thiopropyl]piperidin-3-yl}propan-1-oic
acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-

1-[3-(5-chlorothien-2-yl)propyl]piperidin-3-yl}propan-
1-oic acid

- 25 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(5-chlorothien-2-yl)butyl]piperidin-3-yl}propan-
1-oic acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-

- 1-[2-(5-chlorothien-2-yl)thioethyl]piperidin-3-yl}-
propan-1-oic acid
(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(5-chlorothien-2-yl)thiopropyl]piperidin-3-yl}-
5 propan-1-oic acid
(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(3-chlorothien-2-yl)propyl]piperidin-3-yl}propan-
1-oic acid
(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
10 1-[4-(3-chlorothien-2-yl)butyl]piperidin-3-yl}propan-
1-oic acid
(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[2-(3-chlorothien-2-yl)thioethyl]piperidin-3-yl}-
propan-1-oic acid
15 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(3-chlorothien-2-yl)thiopropyl]piperidin-3-yl}-
propan-1-oic acid
(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(5-methylthien-2-yl)propyl]piperidin-3-yl}propan-
20 1-oic acid
(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[4-(5-methylthien-2-yl)butyl]piperidin-3-yl}propan-
1-oic acid
(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
25 1-[2-(5-methylthien-2-yl)thioethyl]piperidin-3-yl}-
propan-1-oic acid
(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(5-methylthien-2-yl)thiopropyl]piperidin-3-yl}-

propan-1-oic acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-

1-[3-(3-methylthien-2-yl)propyl]piperidin-3-yl}propan-1-oic acid

5 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-

1-[4-(3-methylthien-2-yl)butyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-

1-[2-(3-methylthien-2-yl)thioethyl]piperidin-3-yl}-

10 propan-1-oic acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-

1-[3-(3-methylthien-2-yl)thiopropyl]piperidin-3-yl}-propan-1-oic acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-

15 1-[3-(thien-3-yl)propyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-

1-[4-(thien-3-yl)butyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-

20 1-[2-(thien-3-yl)thioethyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-

1-[3-(thien-3-yl)thiopropyl]piperidin-3-yl}propan-1-oic acid

25 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-

1-[3-(fur-2-yl)propyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-

1-[4-(fur-2-yl)butyl]piperidin-3-yl}propan-1-oic acid

- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[2-(fur-2-yl)thioethyl]piperidin-3-yl}propan-1-oic
acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
5 1-[3-(fur-2-yl)thiopropyl]piperidin-3-yl}propan-1-oic
acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(fur-3-yl)propyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
10 1-[4-(fur-3-yl)butyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[2-(fur-3-yl)thioethyl]piperidin-3-yl}propan-1-oic
acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
15 1-[3-(fur-3-yl)thiopropyl]piperidin-3-yl}propan-1-oic
acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(1-methylpyrrol-2-yl)propyl]piperidin-3-yl}propan-
1-oic acid
- 20 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[4-(1-methylpyrrol-2-yl)butyl]piperidin-3-yl}propan-
1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[2-(1-methylpyrrol-2-yl)thioethyl]piperidin-3-yl}-
25 propan-1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(1-methylpyrrol-2-yl)thiopropyl]piperidin-3-yl}-
propan-1-oic acid

- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 1-[3-(1-methylpyrrol-2-yl)propyl]piperidin-3-yl}propan-
 1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 5 1-[4-(1-methylpyrrol-3-yl)butyl]piperidin-3-yl}propan-
 1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 1-[2-(1-methylpyrrol-3-yl)thioethyl]piperidin-3-yl}-
 propan-1-oic acid
- 10 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 1-[3-(1-methylpyrrol-3-yl)thiopropyl]piperidin-3-yl}-
 propan-1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 1-[3-(thiazol-2-yl)propyl]piperidin-3-yl}propan-1-oic
 15 acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 1-[4-(thiazol-2-yl)butyl]piperidin-3-yl}propan-1-oic
 acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 20 1-[2-(thiazol-2-yl)thioethyl]piperidin-3-yl}propan-
 1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 1-[3-(thiazol-2-yl)thiopropyl]piperidin-3-yl}propan-
 1-oic acid
- 25 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 1-[3-(1-methylimidazol-2-yl)propyl]piperidin-3-yl}-
 propan-1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-

- 1-[4-(1-methylimidazol-2-yl)butyl]piperidin-3-yl}-
propan-1-oic acid
(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[2-(1-methylimidazol-2-yl)thioethyl]piperidin-3-yl}-
5 propan-1-oic acid
(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(1-methylimidazol-2-yl)thiopropyl]piperidin-3-yl}-
propan-1-oic acid
(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
10 1-[3-(3-methylimidazol-4-yl)propyl]piperidin-3-yl}-
propan-1-oic acid
(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[4-(3-methylimidazol-4-yl)butyl]piperidin-3-yl}-
propan-1-oic acid
15 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[2-(3-methylimidazol-4-yl)thioethyl]piperidin-3-yl}-
propan-1-oic acid
(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(3-methylimidazol-4-yl)thiopropyl]piperidin-3-yl}-
20 propan-1-oic acid
(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(3-methylpyrazol-4-yl)propyl]piperidin-3-yl}-
propan-1-oic acid
(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
25 1-[4-(3-methylpyrazol-4-yl)butyl]piperidin-3-yl}propan-
1-oic acid
(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[2-(3-methylpyrazol-4-yl)thioethyl]piperidin-3-yl}-

propan-1-oic acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(3-methylpyrazol-4-yl)thiopropyl]piperidin-3-yl}-
propan-1-oic acid

5 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(oxazol-2-yl)propyl]piperidin-3-yl}propan-1-oic
acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[4-(oxazol-2-yl)butyl]piperidin-3-yl}propan-1-oic

10 acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[2-(oxazol-2-yl)thioethyl]piperidin-3-yl}propan-1-oic
acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-

15 1-[3-(oxazol-2-yl)thiopropyl]piperidin-3-yl}propan-
1-oic acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(pyridin-2-yl)propyl]piperidin-3-yl}propan-1-oic
acid

20 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[4-(pyridin-2-yl)butyl]piperidin-3-yl}propan-1-oic
acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[2-(pyridin-2-yl)thioethyl]piperidin-3-yl}propan-

25 1-oic acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(pyridin-2-yl)thiopropyl]piperidin-3-yl}propan-
1-oic acid

- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(pyridin-3-yl)propyl]piperidin-3-yl}propan-1-oic
acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
5 1-[4-(pyridin-3-yl)butyl]piperidin-3-yl}propan-1-oic
acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[2-(pyridin-3-yl)thioethyl]piperidin-3-yl}propan-
1-oic acid
- 10 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(pyridin-3-yl)thiopropyl]piperidin-3-yl}propan-
1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(pyridin-4-yl)propyl]piperidin-3-yl}propan-1-oic
15 acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[4-(pyridin-4-yl)butyl]piperidin-3-yl}propan-1-oic
acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
20 1-[5-(pyridin-4-yl)pentyl]piperidin-3-yl}propan-1-oic
acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[2-(pyridin-4-yl)thioethyl]piperidin-3-yl}propan-
1-oic acid
- 25 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(pyridin-4-yl)thiopropyl]piperidin-3-yl}propan-
1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-

- 1-[3-(pyrimidin-2-yl)propyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-1-[4-(pyrimidin-2-yl)butyl]piperidin-3-yl}propan-1-oic acid
- 5 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-1-[2-(pyrimidin-2-yl)thioethyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-10 1-[3-(pyrimidin-2-yl)thiopropyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-1-[3-(pyrimidin-4-yl)propyl]piperidin-3-yl}propan-1-oic acid
- 15 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-1-[4-(pyrimidin-4-yl)butyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-1-[2-(pyrimidin-4-yl)thioethyl]piperidin-3-yl}propan-1-oic acid
- 20 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-1-[3-(pyrimidin-4-yl)thiopropyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-25 1-[3-(pyrimidin-5-yl)propyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-1-[4-(pyrimidin-5-yl)butyl]piperidin-3-yl}propan-1-oic

acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(pyrimidin-5-yl)thioethyl]piperidin-3-yl}propan-
1-oic acid

5 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(pyrimidin-5-yl)thiopropyl]piperidin-3-yl}propan-
1-oic acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(pyrazin-2-yl)propyl]piperidin-3-yl}propan-1-oic

10 acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(pyrazin-2-yl)butyl]piperidin-3-yl}propan-1-oic
acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-

15 1-[2-(pyrazin-2-yl)thioethyl]piperidin-3-yl}propan-
1-oic acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(pyrazin-2-yl)thiopropyl]piperidin-3-yl}propan-
1-oic acid

20 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(pyridazin-3-yl)propyl]piperidin-3-yl}propan-1-oic
acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[4-(pyridazin-3-yl)butyl]piperidin-3-yl}propan-1-oic

25 acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(pyridazin-3-yl)thioethyl]piperidin-3-yl}propan-
1-oic acid

- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(pyridazin-3-yl)thiopropyl]piperidin-3-yl}propan-
1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
5 1-[3-(pyridazin-4-yl)propyl]piperidin-3-yl}propan-1-oic
acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[4-(pyridazin-4-yl)butyl]piperidin-3-yl}propan-1-oic
acid
- 10 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[2-(pyridazin-4-yl)thioethyl]piperidin-3-yl}propan-
1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(pyridazin-4-yl)thiopropyl]piperidin-3-yl}propan-
15 1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-phenylprop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(2-fluorophenyl)prop-2-ynyl]piperidin-3-yl}propan-
20 1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(3-fluorophenyl)prop-2-ynyl]piperidin-3-yl}propan-
1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
25 1-[3-(4-fluorophenyl)prop-2-ynyl]piperidin-3-yl}propan-
1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(2-chlorophenyl)prop-2-ynyl]piperidin-3-yl}propan-

- 1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 1-[3-(3-chlorophenyl)prop-2-ynyl]piperidin-3-yl}propan-
 1-oic acid
- 5 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 1-[3-(4-chlorophenyl)prop-2-ynyl]piperidin-3-yl}propan-
 1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 1-[3-(2-methylphenyl)prop-2-ynyl]piperidin-3-yl}propan-
 10 1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 1-[3-(3-methylphenyl)prop-2-ynyl]piperidin-3-yl}propan-
 1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 15 1-[3-(4-methylphenyl)prop-2-ynyl]piperidin-3-yl}propan-
 1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 1-[3-(2-(trifluoromethyl)phenyl)prop-2-ynyl]piperidin-
 3-yl}propan-1-oic acid
- 20 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 1-[3-(3-(trifluoromethyl)phenyl)prop-2-ynyl]piperidin-
 3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 1-[3-(4-(trifluoromethyl)phenyl)prop-2-ynyl]piperidin-
 25 3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
 1-[3-(2-methoxyphenyl)prop-2-ynyl]piperidin-3-yl}-
 propan-1-oic acid

- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(3-methoxyphenyl)prop-2-ynyl]piperidin-3-yl}-
propan-1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
5 1-[3-(4-methoxyphenyl)prop-2-ynyl]piperidin-3-yl}-
propan-1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(3,4-difluorophenyl)prop-2-ynyl]piperidin-3-yl}-
propan-1-oic acid
- 10 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(2,4-difluorophenyl)prop-2-ynyl]piperidin-3-yl}-
propan-1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(3,4-dichlorophenyl)prop-2-ynyl]piperidin-3-yl}-
15 propan-1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(2,3-dichlorophenyl)prop-2-ynyl]piperidin-3-yl}-
propan-1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
20 1-[3-(2,4-dichlorophenyl)prop-2-ynyl]piperidin-3-yl}-
propan-1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(2,4,6-trichlorophenyl)prop-2-ynyl]piperidin-
3-yl}propan-1-oic acid
- 25 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(3,5-dichlorophenyl)prop-2-ynyl]piperidin-3-yl}-
propan-1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-

- 1-[3-(4-chloro-3-fluorophenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-1-[3-(3-chloro-4-fluorophenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
 5 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-1-[3-(2-chloro-4-fluorophenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-10 1-[3-(3-chloro-5-fluorophenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-1-[3-(4-chloro-2-fluorophenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
 15 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-1-[3-(3-fluoro-4-methylphenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-1-[3-(4-chloro-3-(trifluoromethyl)phenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
 20 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-1-[3-(2-chloro-4-(trifluoromethyl)phenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-25 1-[3-(2-chloro-5-(trifluoromethyl)phenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-1-[3-(5-chloro-2-methoxyphenyl)prop-2-ynyl]piperidin-

3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3,5-bis(trifluoromethyl)phenyl)prop-2-ynyl]-
piperidin-3-yl}propan-1-oic acid

5 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3,5-dimethylphenyl)prop-2-ynyl]piperidin-3-yl}-
propan-1-oic acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(2,4-dichloro-6-methylphenyl)prop-2-ynyl]-
10 piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(thien-2-yl)prop-2-ynyl]piperidin-3-yl}propan-
1-oic acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
15 1-[3-(5-chlorothien-2-yl)prop-2-ynyl]piperidin-3-yl}-
propan-1-oic acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3-chlorothien-2-yl)prop-2-ynyl]piperidin-3-yl}-
propan-1-oic acid

20 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(5-methylthien-2-yl)prop-2-ynyl]piperidin-3-yl}-
propan-1-oic acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3-methylthien-2-yl)prop-2-ynyl]piperidin-3-yl}-

25 propan-1-oic acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(thien-3-yl)prop-2-ynyl]piperidin-3-yl}propan-
1-oic acid

- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(1-methylpyrrol-2-yl)prop-2-ynyl]piperidin-3-yl}-
propan-1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
5 1-[3-(1-methylpyrrol-3-yl)prop-2-ynyl]piperidin-3-yl}-
propan-1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(thiazol-2-yl)prop-2-ynyl]piperidin-3-yl}propan-
1-oic acid
- 10 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(thiazol-4-yl)prop-2-ynyl]piperidin-3-yl}propan-
1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(thiazol-5-yl)prop-2-ynyl]piperidin-3-yl}propan-
15 1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(1-methylimidazol-2-yl)prop-2-ynyl]piperidin-
3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
20 1-[3-(3-methylimidazol-4-yl)prop-2-ynyl]piperidin-
3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(3-methylpyrazol-4-yl)prop-2-ynyl]piperidin-3-yl}-
propan-1-oic acid
- 25 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-
1-[3-(oxazol-2-yl)prop-2-ynyl]piperidin-3-yl}propan-
1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-

- 1-[3-(oxazol-4-yl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-1-[3-(oxazol-5-yl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- 5 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-1-[3-(pyridin-2-yl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-10 1-[3-(pyridin-3-yl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-1-[3-(pyridin-4-yl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- 15 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-1-[3-(pyrimidin-2-yl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-1-[3-(pyrimidin-4-yl)prop-2-ynyl]piperidin-3-yl}propan-20 1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-1-[3-(pyrimidin-5-yl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-25 1-[3-(pyrazin-2-yl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]}-1-[3-(pyridazin-3-yl)prop-2-ynyl]piperidin-3-yl}propan-

1-oic acid

(3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(pyridazin-4-yl)prop-2-ynyl]piperidin-3-yl}propan-
1-oic acid

5 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-phenylpropyl]piperidin-3-yl}propan-
1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[4-phenylbutyl]piperidin-3-yl}propan-

10 1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(2-fluorophenyl)propyl]piperidin-
3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
15 4-yl)propyl]-1-[4-(2-fluorophenyl)butyl]piperidin-
3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(3-fluorophenyl)propyl]piperidin-
3-yl}propan-1-oic acid

20 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[4-(3-fluorophenyl)butyl]piperidin-
3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(4-fluorophenyl)propyl]piperidin-

25 3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[4-(4-fluorophenyl)butyl]piperidin-
3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3-difluorophenyl)propyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(2,3-difluorophenyl)butyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,6-difluorophenyl)propyl]piperidin-3-yl}propan-1-oic acid

10 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(2,6-difluorophenyl)butyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-chlorophenyl)propyl]piperidin-

15 3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(2-chlorophenyl)butyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-chlorophenyl)propyl]piperidin-

20 3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(3-chlorophenyl)butyl]piperidin-3-yl}propan-1-oic acid

25 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-chlorophenyl)propyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-

- 4-yl)propyl]-1-[4-(4-chlorophenyl)butyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3-dichlorophenyl)propyl]piperidin-3-yl}propan-1-oic acid
- 5 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(2,3-dichlorophenyl)butyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,6-dichlorophenyl)propyl]piperidin-3-yl}propan-1-oic acid
- 10 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(2,6-dichlorophenyl)butyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-methylphenyl)propyl]piperidin-3-yl}propan-1-oic acid
- 15 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(2-methylphenyl)butyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[5-(2-methylphenyl)pentyl]piperidin-3-yl}propan-1-oic acid
- 20 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-methylphenyl)propyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(3-methylphenyl)butyl]piperidin-
- 25

- 3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-methylphenyl)propyl]piperidin-3-yl}propan-1-oic acid
- 5 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(4-methylphenyl)butyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-methoxyphenyl)propyl]piperidin-3-yl}propan-1-oic acid
- 10 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(2-methoxyphenyl)butyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-methoxyphenyl)propyl]piperidin-3-yl}propan-1-oic acid
- 15 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(3-methoxyphenyl)butyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-methoxyphenyl)propyl]piperidin-3-yl}propan-1-oic acid
- 20 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(4-methoxyphenyl)butyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-trifluoromethylphenyl)propyl]piperidin-3-yl}propan-1-oic acid
- 25 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-trifluoromethylphenyl)propyl]piperidin-3-yl}propan-1-oic acid

- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(2-trifluoromethylphenyl)butyl]-piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-trifluoromethylphenyl)propyl]-piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(3-trifluoromethylphenyl)butyl]-piperidin-3-yl}propan-1-oic acid
- 10 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-trifluoromethylphenyl)propyl]-piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(4-trifluoromethylphenyl)butyl]-piperidin-3-yl}propan-1-oic acid
- 15 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-phenylthioethyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-phenylthiopropyl]piperidin-3-yl}propan-1-oic acid
- 20 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-fluorophenylthio)ethyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-fluorophenylthio)propyl]piperidin-3-yl}propan-1-oic acid
- 25 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-fluorophenylthio)propyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-

- 4-yl)propyl]-1-[2-(3-fluorophenylthio)ethyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-fluorophenylthio)propyl]piperidin-3-yl}propan-1-oic acid
 5 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(4-fluorophenylthio)ethyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-fluorophenylthio)propyl]piperidin-3-yl}propan-1-oic acid
 10 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2,3-difluorophenylthio)ethyl]-piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3-difluorophenylthio)propyl]-piperidin-3-yl}propan-1-oic acid
 15 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2,6-difluorophenylthio)ethyl]-piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,6-difluorophenylthio)propyl]-piperidin-3-yl}propan-1-oic acid
 20 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-chlorophenylthio)ethyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-chlorophenylthio)propyl]piperidin-

- 3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-chlorophenylthio)ethyl]piperidin-3-yl}propan-1-oic acid
- 5 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-chlorophenylthio)propyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(4-chlorophenylthio)ethyl]piperidin-3-yl}propan-1-oic acid
- 10 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-chlorophenylthio)propyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2,3-dichlorophenylthio)ethyl]-piperidin-3-yl}propan-1-oic acid
- 15 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3-dichlorophenylthio)propyl]-piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2,6-dichlorophenylthio)ethyl]-piperidin-3-yl}propan-1-oic acid
- 20 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2,6-dichlorophenylthio)ethyl]-piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,6-dichlorophenylthio)propyl]-piperidin-3-yl}propan-1-oic acid
- 25 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-methylphenylthio)ethyl]piperidin-3-yl}propan-1-oic acid

- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-methylphenylthio)propyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-methylphenylthio)ethyl]piperidin-3-yl}propan-1-oic acid
- 5 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-methylphenylthio)propyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(4-methylphenylthio)ethyl]piperidin-3-yl}propan-1-oic acid
- 10 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-methylphenylthio)propyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-trifluoromethylphenylthio)ethyl]piperidin-3-yl}propan-1-oic acid
- 15 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-trifluoromethylphenylthio)propyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-trifluoromethylphenylthio)ethyl]piperidin-3-yl}propan-1-oic acid
- 20 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-trifluoromethylphenylthio)propyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-trifluoromethylphenylthio)propyl]piperidin-3-yl}propan-1-oic acid
- 25 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-trifluoromethylphenylthio)propyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-

4-yl)propyl]-1-[2-(4-trifluoromethylphenylthio)ethyl]-
piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(4-trifluoromethylphenylthio)propyl]-
5 piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[2-(2-methoxyphenylthio)ethyl]piperidin-
3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
10 4-yl)propyl]-1-[3-(2-methoxyphenylthio)propyl]-
piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[2-(3-methoxyphenylthio)ethyl]piperidin-
3-yl}propan-1-oic acid

15 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(3-methoxyphenylthio)propyl]-
piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[2-(4-methoxyphenylthio)ethyl]piperidin-

20 3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(4-methoxyphenylthio)propyl]-
piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
25 4-yl)propyl]-1-[cyclopropylmethyl]piperidin-3-yl}-
propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[2-(cyclopropyl)ethyl]piperidin-3-yl}-

propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[cyclobutylmethyl]piperidin-3-yl}propan-1-oic acid

- 5 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclobutyl)ethyl]piperidin-3-yl}-propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[cyclopentylmethyl]piperidin-3-yl}-

- 10 propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclopentyl)ethyl]piperidin-3-yl}-propan-1-oic acid

- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[cyclohexylmethyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclohexyl)ethyl]piperidin-3-yl}-propan-1-oic acid

- 20 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclopropylthio)ethyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(cyclopropylthio)propyl]piperidin-

- 25 3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclobutylthio)ethyl]piperidin-3-yl}propan-1-oic acid

- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(cyclobutylthiopropyl)piperidin-3-yl]propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclopentylthio)ethyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(cyclopentylthio)propyl]piperidin-3-yl}propan-1-oic acid
- 10 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclohexylthio)ethyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(cyclohexylthio)propyl]piperidin-3-yl}propan-1-oic acid
- 15 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-methylthioethyl]piperidin-3-yl}-propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-methylthiopropyl]piperidin-3-yl}-propan-1-oic acid
- 20 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-ethylthioethyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-ethylthiopropyl]piperidin-3-yl}-propan-1-oic acid
- 25 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-ethylthiopropyl]piperidin-3-yl}-propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-

4-yl)propyl]-1-[2-(n-propylthio)ethyl]piperidin-3-yl}-
propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(n-propylthio)propyl]piperidin-3-yl}-

5 propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[2-(n-butylthio)ethyl]piperidin-3-yl}-
propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
10 4-yl)propyl]-1-[3-(n-butylthio)propyl]piperidin-3-yl}-
propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(thien-2-yl)propyl]piperidin-3-yl}-
propan-1-oic acid

15 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[4-(thien-2-yl)butyl]piperidin-3-yl}-
propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[2-(thien-2-yl)thioethyl]piperidin-

20 3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(thien-2-yl)thiopropyl]piperidin-
3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
25 4-yl)propyl]-1-[3-(5-chlorothien-2-yl)propyl]piperidin-
3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[4-(5-chlorothien-2-yl)butyl]piperidin-

- 3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(5-chlorothien-2-yl)thioethyl]-piperidin-3-yl}propan-1-oic acid
- 5 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(5-chlorothien-2-yl)thiopropyl]-piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-chlorothien-2-yl)propyl]piperidin-3-yl}propan-1-oic acid
- 10 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(3-chlorothien-2-yl)butyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-chlorothien-2-yl)thioethyl]-piperidin-3-yl}propan-1-oic acid
- 15 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-chlorothien-2-yl)thiopropyl]-piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(5-methylthien-2-yl)propyl]piperidin-3-yl}propan-1-oic acid
- 20 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(5-methylthien-2-yl)butyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(5-methylthien-2-yl)thioethyl]-piperidin-3-yl}propan-1-oic acid
- 25 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(5-methylthien-2-yl)thioethyl]-piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(5-methylthien-2-yl)thiopropyl]-piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-methylthien-2-yl)propyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(3-methylthien-2-yl)butyl]piperidin-3-yl}propan-1-oic acid

10 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-methylthien-2-yl)thioethyl]-piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-methylthien-2-yl)thiopropyl]-

15 piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-3-yl)propyl]piperidin-3-yl}-propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(thien-3-yl)butyl]piperidin-3-yl}-propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(thien-3-yl)thioethyl]piperidin-3-yl}propan-1-oic acid

25 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-3-yl)thiopropyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-

4-yl)propyl]-1-[3-(fur-2-yl)propyl]piperidin-3-yl}-
propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[4-(fur-2-yl)butyl]piperidin-3-yl}-

5 propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[2-(fur-2-yl)thioethyl]piperidin-3-yl}-
propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
10 4-yl)propyl]-1-[3-(fur-2-yl)thiopropyl]piperidin-3-yl}-
propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(fur-3-yl)propyl]piperidin-3-yl}-
propan-1-oic acid

15 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[4-(fur-3-yl)butyl]piperidin-3-yl}-
propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[2-(fur-3-yl)thioethyl]piperidin-3-yl}-

20 propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(fur-3-yl)thiopropyl]piperidin-3-yl}-
propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
25 4-yl)propyl]-1-[3-(1-methylpyrrol-2-yl)propyl]-
piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[4-(1-methylpyrrol-2-yl)butyl]piperidin-

3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(1-methylpyrrol-2-yl)thioethyl]-piperidin-3-yl}propan-1-oic acid

5 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(1-methylpyrrol-2-yl)thiopropyl]-piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(1-methylpyrrol-2-yl)propyl]-

10 piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(1-methylpyrrol-3-yl)butyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-

15 4-yl)propyl]-1-[2-(1-methylpyrrol-3-yl)thioethyl]-piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(1-methylpyrrol-3-yl)thiopropyl]-piperidin-3-yl}propan-1-oic acid

20 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thiazol-2-yl)propyl]piperidin-3-yl}-propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(thiazol-2-yl)butyl]piperidin-3-yl}-

25 propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(thiazol-2-yl)thioethyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thiazol-2-yl)thiopropyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(1-methylimidazol-2-yl)propyl]-piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(1-methylimidazol-2-yl)butyl]-piperidin-3-yl}propan-1-oic acid

10 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(1-methylimidazol-2-yl)thioethyl]-piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(1-methylimidazol-2-yl)thiopropyl]-piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-methylimidazol-4-yl)propyl]-piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(3-methylimidazol-4-yl)butyl]-piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-methylimidazol-4-yl)thioethyl]-piperidin-3-yl}propan-1-oic acid

25 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-methylimidazol-4-yl)thiopropyl]-piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-

- 4-yl)propyl]-1-[3-(3-methylpyrazol-4-yl)propyl]-
piperidin-3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[4-(3-methylpyrazol-4-yl)butyl]-
5 piperidin-3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[2-(3-methylpyrazol-4-yl)thioethyl]-
piperidin-3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
10 4-yl)propyl]-1-[3-(3-methylpyrazol-4-yl)thiopropyl]-
piperidin-3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(oxazol-2-yl)propyl]piperidin-3-yl}-
propan-1-oic acid
15 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[4-(oxazol-2-yl)butyl]piperidin-3-yl}-
propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[2-(oxazol-2-yl)thioethyl]piperidin-
20 3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(oxazol-2-yl)thiopropyl]piperidin-
3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
25 4-yl)propyl]-1-[3-(pyridin-2-yl)propyl]piperidin-3-yl}-
propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[4-(pyridin-2-yl)butyl]piperidin-3-yl}-

propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(pyridin-2-yl)thioethyl]piperidin-3-yl}propan-1-oic acid

- 5 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridin-2-yl)thiopropyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridin-3-yl)propyl]piperidin-3-yl}-

- 10 propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(pyridin-3-yl)butyl]piperidin-3-yl}-propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-

- 15 4-yl)propyl]-1-[2-(pyridin-3-yl)thioethyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridin-3-yl)thiopropyl]piperidin-3-yl}propan-1-oic acid

- 20 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridin-4-yl)propyl]piperidin-3-yl}-propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(pyridin-4-yl)butyl]piperidin-3-yl}-

- 25 propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[5-(pyridin-4-yl)pentyl]piperidin-3-yl}-propan-1-oic acid

- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(pyridin-4-yl)thioethyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridin-4-yl)thiopropyl]piperidin-3-yl}propan-1-oic acid
- 5 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyrimidin-2-yl)propyl]piperidin-3-yl}propan-1-oic acid
- 10 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(pyrimidin-2-yl)butyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(pyrimidin-2-yl)thioethyl]piperidin-3-yl}propan-1-oic acid
- 15 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyrimidin-2-yl)thiopropyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyrimidin-4-yl)propyl]piperidin-3-yl}propan-1-oic acid
- 20 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(pyrimidin-4-yl)butyl]piperidin-3-yl}propan-1-oic acid
- 25 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(pyrimidin-4-yl)thioethyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-

- 4-yl)propyl]-1-[3-(pyrimidin-4-yl)thiopropyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyrimidin-5-yl)propyl]piperidin-3-yl}propan-1-oic acid
- 5 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(pyrimidin-5-yl)butyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(pyrimidin-5-yl)thioethyl]piperidin-3-yl}propan-1-oic acid
- 10 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyrimidin-5-yl)thiopropyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyrazin-2-yl)propyl]piperidin-3-yl}-propan-1-oic acid
- 15 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(pyrazin-2-yl)butyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(pyrazin-2-yl)thioethyl]piperidin-3-yl}propan-1-oic acid
- 20 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyrazin-2-yl)thiopropyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridazin-3-yl)propyl]piperidin-

- 3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(pyridazin-3-yl)butyl]piperidin-3-yl}propan-1-oic acid
- 5 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(pyridazin-3-yl)thioethyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridazin-3-yl)thiopropyl]piperidin-3-yl}propan-1-oic acid
- 10 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridazin-4-yl)propyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(pyridazin-4-yl)butyl]piperidin-3-yl}propan-1-oic acid
- 15 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(pyridazin-4-yl)thioethyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridazin-4-yl)thiopropyl]piperidin-3-yl}propan-1-oic acid
- 20 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-phenylprop-2-ynyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-fluorophenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- 25 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-fluorophenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid

- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-fluorophenyl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-fluorophenyl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-chlorophenyl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-chlorophenyl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-chlorophenyl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-methylphenyl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-methylphenyl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-methylphenyl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-(trifluoromethyl)phenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-

- 4-yl)propyl]-1-[3-(3-(trifluoromethyl)phenyl)prop-
2-ynyl]piperidin-3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(4-(trifluoromethyl)phenyl)prop-
5 2-ynyl]piperidin-3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(2-methoxyphenyl)prop-2-ynyl]-
piperidin-3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
10 4-yl)propyl]-1-[3-(3-methoxyphenyl)prop-2-ynyl]-
piperidin-3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(4-methoxyphenyl)prop-2-ynyl]-
piperidin-3-yl}propan-1-oic acid
15 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(3,4-difluorophenyl)prop-2-ynyl]-
piperidin-3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(2,4-difluorophenyl)prop-2-ynyl]-
20 piperidin-3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(3,4-dichlorophenyl)prop-2-ynyl]-
piperidin-3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
25 4-yl)propyl]-1-[3-(2,3-dichlorophenyl)prop-2-ynyl]-
piperidin-3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(2,4-dichlorophenyl)prop-2-ynyl]-

- piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,4,6-trichlorophenyl)prop-2-ynyl]}-piperidin-3-yl}propan-1-oic acid
- 5 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3,5-dichlorophenyl)prop-2-ynyl]}-piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-chloro-3-fluorophenyl)prop-2-ynyl]}piperidin-3-yl}propan-1-oic acid
- 10 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-chloro-4-fluorophenyl)prop-2-ynyl]}piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-chloro-4-fluorophenyl)prop-2-ynyl]}piperidin-3-yl}propan-1-oic acid
- 15 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-chloro-5-fluorophenyl)prop-2-ynyl]}piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-chloro-2-fluorophenyl)prop-2-ynyl]}piperidin-3-yl}propan-1-oic acid
- 20 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-fluoro-4-methylphenyl)prop-2-ynyl]}piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-chloro-3-(trifluoromethyl)phenyl)prop-2-ynyl]}piperidin-3-yl}propan-1-oic acid
- 25 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-chloro-3-(trifluoromethyl)phenyl)prop-2-ynyl]}piperidin-3-yl}propan-1-oic acid

- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-chloro-4-(trifluoromethyl)-phenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-chloro-5-(trifluoromethyl)-phenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(5-chloro-2-methoxyphenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- 10 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3,5-bis(trifluoromethyl)phenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3,5-dimethylphenyl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid
- 15 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,4-dichloro-6-methylphenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- 20 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(5-chlorothien-2-yl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-chlorothien-2-yl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid
- 25 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-chlorothien-2-yl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-

4-yl)propyl]-1-[3-(5-methylthien-2-yl)prop-2-ynyl]-
piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(3-methylthien-2-yl)prop-2-ynyl]-

5 piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(thien-3-yl)prop-2-ynyl]piperidin-
3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
10 4-yl)propyl]-1-[3-(1-methylpyrrol-2-yl)prop-2-ynyl]-
piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(1-methylpyrrol-3-yl)prop-2-ynyl]-
piperidin-3-yl}propan-1-oic acid

15 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(thiazol-2-yl)prop-2-ynyl]piperidin-
3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(thiazol-4-yl)prop-2-ynyl]piperidin-

20 3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(thiazol-5-yl)prop-2-ynyl]piperidin-
3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
25 4-yl)propyl]-1-[3-(1-methylimidazol-2-yl)prop-2-ynyl]-
piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(3-methylimidazol-4-yl)prop-2-ynyl]-

- piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-methylpyrazol-4-yl)prop-2-ynyl]}-piperidin-3-yl}propan-1-oic acid
- 5 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(oxazol-2-yl)prop-2-ynyl]}piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(oxazol-4-yl)prop-2-ynyl]}piperidin-3-yl}propan-1-oic acid
- 10 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(oxazol-5-yl)prop-2-ynyl]}piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridin-2-yl)prop-2-ynyl]}piperidin-3-yl}propan-1-oic acid
- 15 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridin-3-yl)prop-2-ynyl]}piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridin-4-yl)prop-2-ynyl]}piperidin-3-yl}propan-1-oic acid
- 20 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyrimidin-2-yl)prop-2-ynyl]}-piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyrimidin-4-yl)prop-2-ynyl]}-piperidin-3-yl}propan-1-oic acid
- 25 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyrimidin-4-yl)prop-2-ynyl]}-piperidin-3-yl}propan-1-oic acid

- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyrimidin-5-yl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyrazin-2-yl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridazin-3-yl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridazin-4-yl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-phenylpropyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-phenylbutyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-fluorophenyl)propyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(2-fluorophenyl)butyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-fluorophenyl)propyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-

- 4-yl}propyl]-1-[4-(3-fluorophenyl)butyl]piperidin-
3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(4-fluorophenyl)propyl]piperidin-
5 3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[4-(4-fluorophenyl)butyl]piperidin-
3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
10 4-yl)propyl]-1-[3-(2,3-difluorophenyl)propyl]piperidin-
3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[4-(2,3-difluorophenyl)butyl]piperidin-
3-yl}propan-1-oic acid
15 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(2,6-difluorophenyl)propyl]piperidin-
3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[4-(2,6-difluorophenyl)butyl]piperidin-
20 3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(2-chlorophenyl)propyl]piperidin-
3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
25 4-yl)propyl]-1-[4-(2-chlorophenyl)butyl]piperidin-
3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(3-chlorophenyl)propyl]piperidin-

- 3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(3-chlorophenyl)butyl]piperidin-3-yl}propan-1-oic acid
- 5 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-chlorophenyl)propyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(4-chlorophenyl)butyl]piperidin-3-yl}propan-1-oic acid
- 10 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3-dichlorophenyl)propyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(2,3-dichlorophenyl)butyl]piperidin-3-yl}propan-1-oic acid
- 15 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,6-dichlorophenyl)propyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(2,6-dichlorophenyl)butyl]piperidin-3-yl}propan-1-oic acid
- 20 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-methylphenyl)propyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(2-methylphenyl)butyl]piperidin-3-yl}propan-1-oic acid
- 25 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(2-methylphenyl)butyl]piperidin-3-yl}propan-1-oic acid

- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[5-(2-methylphenyl)pentyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-methylphenyl)propyl]piperidin-3-yl}propan-1-oic acid
- 5 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(3-methylphenyl)butyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-methylphenyl)propyl]piperidin-3-yl}propan-1-oic acid
- 10 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(4-methylphenyl)butyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-methoxyphenyl)propyl]piperidin-3-yl}propan-1-oic acid
- 15 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(2-methoxyphenyl)butyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-methoxyphenyl)propyl]piperidin-3-yl}propan-1-oic acid
- 20 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(3-methoxyphenyl)butyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(3-methoxyphenyl)butyl]piperidin-3-yl}propan-1-oic acid
- 25 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(3-methoxyphenyl)butyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-

- 4-yl)propyl]-1-[3-(4-methoxyphenyl)propyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(4-methoxyphenyl)butyl]piperidin-3-yl}propan-1-oic acid
- 5 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-trifluoromethylphenyl)propyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(2-trifluoromethylphenyl)butyl]piperidin-3-yl}propan-1-oic acid
- 10 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-trifluoromethylphenyl)propyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(3-trifluoromethylphenyl)butyl]piperidin-3-yl}propan-1-oic acid
- 15 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-trifluoromethylphenyl)propyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(4-trifluoromethylphenyl)butyl]piperidin-3-yl}propan-1-oic acid
- 20 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-phenylthioethyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-phenylthiopropyl]piperidin-3-yl}
- 25

propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-fluorophenylthio)ethyl]piperidin-3-yl}propan-1-oic acid

5 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-fluorophenylthio)propyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-fluorophenylthio)ethyl]piperidin-

10 3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-fluorophenylthio)propyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-

15 4-yl)propyl]-1-[2-(4-fluorophenylthio)ethyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-fluorophenylthio)propyl]piperidin-3-yl}propan-1-oic acid

20 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2,3-difluorophenylthio)ethyl]-piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3-difluorophenylthio)propyl]-

25 piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2,6-difluorophenylthio)ethyl]-piperidin-3-yl}propan-1-oic acid

- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,6-difluorophenylthio)propyl]-piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-chlorophenylthio)ethyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-chlorophenylthio)propyl]piperidin-3-yl}propan-1-oic acid
- 10 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-chlorophenylthio)ethyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-chlorophenylthio)propyl]piperidin-3-yl}propan-1-oic acid
- 15 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(4-chlorophenylthio)ethyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-chlorophenylthio)propyl]piperidin-3-yl}propan-1-oic acid
- 20 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2,3-dichlorophenylthio)ethyl]-piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3-dichlorophenylthio)propyl]-piperidin-3-yl}propan-1-oic acid
- 25 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3-dichlorophenylthio)propyl]-piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-

- 4-yl)propyl]-1-[2-(2,6-dichlorophenylthio)ethyl]-
piperidin-3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(2,6-dichlorophenylthio)propyl]-
5 piperidin-3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[2-(2-methylphenylthio)ethyl]piperidin-
3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
10 4-yl)propyl]-1-[3-(2-methylphenylthio)propyl]piperidin-
3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[2-(3-methylphenylthio)ethyl]piperidin-
3-yl}propan-1-oic acid
15 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(3-methylphenylthio)propyl]piperidin-
3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[2-(4-methylphenylthio)ethyl]piperidin-
20 3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(4-methylphenylthio)propyl]piperidin-
3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
25 4-yl)propyl]-1-[2-(2-trifluoromethylphenylthio)ethyl]-
piperidin-3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(2-trifluoromethylphenylthio)propyl]-

piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-trifluoromethylphenylthio)ethyl]-piperidin-3-yl}propan-1-oic acid

5 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-trifluoromethylphenylthio)-propyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(4-trifluoromethylphenylthio)ethyl]-piperidin-3-yl}propan-1-oic acid

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(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-trifluoromethylphenylthio)propyl]-piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-

15 4-yl)propyl]-1-[2-(2-methoxyphenylthio)ethyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-methoxyphenylthio)propyl]-piperidin-3-yl}propan-1-oic acid

20 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-methoxyphenylthio)ethyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-methoxyphenylthio)propyl]-

25 piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(4-methoxyphenylthio)ethyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-methoxyphenylthio)propyl]-piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[cyclopropylmethyl]piperidin-3-yl}-propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclopropyl)ethyl]piperidin-3-yl}-propan-1-oic acid

10 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[cyclobutylmethyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclobutyl)ethyl]piperidin-3-yl}-propan-1-oic acid

15 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[cyclopentylmethyl]piperidin-3-yl}-propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclopentyl)ethyl]piperidin-3-yl}-propan-1-oic acid

20 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[cyclohexylmethyl]piperidin-3-yl}propan-1-oic acid

25 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclohexyl)ethyl]piperidin-3-yl}-propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-

- 4-yl)propyl]-1-[2-(cyclopropylthio)ethyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(cyclopropylthio)propyl]piperidin-3-yl}propan-1-oic acid
- 5 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclobutylthio)ethyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(cyclobutylthiopropyl]piperidin-3-yl}propan-1-oic acid
- 10 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclopentylthio)ethyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(cyclopentylthio)propyl]piperidin-3-yl}propan-1-oic acid
- 15 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclohexylthio)ethyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(cyclohexylthio)propyl]piperidin-3-yl}propan-1-oic acid
- 20 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-methylthioethyl]piperidin-3-yl}-propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-methylthiopropyl]piperidin-3-yl}-

propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-ethylthioethyl]piperidin-3-yl}propan-1-oic acid

- 5 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-ethylthiopropyl]piperidin-3-yl}-propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(n-propylthio)ethyl]piperidin-3-yl}-

- 10 propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(n-propylthio)propyl]piperidin-3-yl}-propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-

- 15 4-yl)propyl]-1-[2-(n-butylthio)ethyl]piperidin-3-yl}-propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(n-butylthio)propyl]piperidin-3-yl}-propan-1-oic acid

- 20 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)propyl]piperidin-3-yl}-propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(thien-2-yl)butyl]piperidin-3-yl}-

- 25 propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(thien-2-yl)thioethyl]piperidin-3-yl}propan-1-oic acid

- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)thiopropyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(5-chlorothien-2-yl)propyl]piperidin-3-yl}propan-1-oic acid
- 5 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(5-chlorothien-2-yl)butyl]piperidin-3-yl}propan-1-oic acid
- 10 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(5-chlorothien-2-yl)thioethyl]-piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(5-chlorothien-2-yl)thiopropyl]-piperidin-3-yl}propan-1-oic acid
- 15 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-chlorothien-2-yl)propyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(3-chlorothien-2-yl)butyl]piperidin-3-yl}propan-1-oic acid
- 20 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-chlorothien-2-yl)thioethyl]-piperidin-3-yl}propan-1-oic acid
- 25 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-chlorothien-2-yl)thiopropyl]-piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-

- 4-yl)propyl]-1-[3-(5-methylthien-2-yl)propyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(5-methylthien-2-yl)butyl]piperidin-3-yl}propan-1-oic acid
 5 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(5-methylthien-2-yl)thioethyl]-piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(5-methylthien-2-yl)thiopropyl]-piperidin-3-yl}propan-1-oic acid
 10 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-methylthien-2-yl)propyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(3-methylthien-2-yl)butyl]piperidin-3-yl}propan-1-oic acid
 15 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-methylthien-2-yl)thioethyl]-piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-methylthien-2-yl)thiopropyl]-piperidin-3-yl}propan-1-oic acid
 20 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-3-yl)propyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(thien-3-yl)butyl]piperidin-3-yl}-

propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(thien-3-yl)thioethyl]piperidin-3-yl}propan-1-oic acid

- 5 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-3-yl)thiopropyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(fur-2-yl)propyl]piperidin-3-yl}-

- 10 propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(fur-2-yl)butyl]piperidin-3-yl}-propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-

- 15 4-yl)propyl]-1-[2-(fur-2-yl)thioethyl]piperidin-3-yl}-propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(fur-2-yl)thiopropyl]piperidin-3-yl}-propan-1-oic acid

- 20 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(fur-3-yl)propyl]piperidin-3-yl}-propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(fur-3-yl)butyl]piperidin-3-yl}-

- 25 propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(fur-3-yl)thioethyl]piperidin-3-yl}-propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(fur-3-yl)thiopropyl]piperidin-3-yl}-propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(1-methylpyrrol-2-yl)propyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(1-methylpyrrol-2-yl)butyl]piperidin-3-yl}propan-1-oic acid

10 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(1-methylpyrrol-2-yl)thioethyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(1-methylpyrrol-2-yl)thiopropyl]piperidin-3-yl}propan-1-oic acid

15 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(1-methylpyrrol-2-yl)propyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(1-methylpyrrol-3-yl)butyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(1-methylpyrrol-3-yl)thioethyl]piperidin-3-yl}propan-1-oic acid

25 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(1-methylpyrrol-3-yl)thiopropyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-

- 4-yl)propyl]-1-[3-(thiazol-2-yl)propyl]piperidin-3-yl}-
propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[4-(thiazol-2-yl)butyl]piperidin-3-yl}-
5 propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[2-(thiazol-2-yl)thioethyl]piperidin-
3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
10 4-yl)propyl]-1-[3-(thiazol-2-yl)thiopropyl]piperidin-
3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(1-methylimidazol-2-yl)propyl]-
piperidin-3-yl}propan-1-oic acid
- 15 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[4-(1-methylimidazol-2-yl)butyl]-
piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[2-(1-methylimidazol-2-yl)thioethyl]-
20 piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(1-methylimidazol-2-yl)thiopropyl]-
piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
25 4-yl)propyl]-1-[3-(3-methylimidazol-4-yl)propyl]-
piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[4-(3-methylimidazol-4-yl)butyl]-

- piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-methylimidazol-4-yl)thioethyl]}-piperidin-3-yl}propan-1-oic acid
- 5 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-methylimidazol-4-yl)thiopropyl]}-piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-methylpyrazol-4-yl)propyl]}-piperidin-3-yl}propan-1-oic acid
- 10 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(3-methylpyrazol-4-yl)butyl]}-piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-methylpyrazol-4-yl)thioethyl]}-piperidin-3-yl}propan-1-oic acid
- 15 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-methylpyrazol-4-yl)thiopropyl]}-piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(oxazol-2-yl)propyl]}piperidin-3-yl}propan-1-oic acid
- 20 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(oxazol-2-yl)butyl]}piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(oxazol-2-yl)thioethyl]}piperidin-3-yl}propan-1-oic acid
- 25 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(oxazol-2-yl)thioethyl]}piperidin-3-yl}propan-1-oic acid

- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(oxazol-2-yl)thiopropyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridin-2-yl)propyl]piperidin-3-yl}-propan-1-oic acid
- 5 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(pyridin-2-yl)butyl]piperidin-3-yl}-propan-1-oic acid
- 10 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(pyridin-2-yl)thioethyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridin-2-yl)thiopropyl]piperidin-3-yl}propan-1-oic acid
- 15 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridin-3-yl)propyl]piperidin-3-yl}-propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(pyridin-3-yl)butyl]piperidin-3-yl}-propan-1-oic acid
- 20 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(pyridin-3-yl)thioethyl]piperidin-3-yl}propan-1-oic acid
- 25 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridin-3-yl)thiopropyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-

- 4-yl)propyl]-1-[3-(pyridin-4-yl)propyl]piperidin-3-yl}-
propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[4-(pyridin-4-yl)butyl]piperidin-3-yl}-
5 propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[5-(pyridin-4-yl)pentyl]piperidin-3-yl}-
propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
10 4-yl)propyl]-1-[2-(pyridin-4-yl)thioethyl]piperidin-
3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(pyridin-4-yl)thiopropyl]piperidin-
3-yl}propan-1-oic acid
15 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(pyrimidin-2-yl)propyl]piperidin-
3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[4-(pyrimidin-2-yl)butyl]piperidin-
20 3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[2-(pyrimidin-2-yl)thioethyl]piperidin-
3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
25 4-yl)propyl]-1-[3-(pyrimidin-2-yl)thiopropyl]piperidin-
3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(pyrimidin-4-yl)propyl]piperidin-

- 3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(pyrimidin-4-yl)butyl]piperidin-3-yl}propan-1-oic acid
- 5 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(pyrimidin-4-yl)thioethyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyrimidin-4-yl)thiopropyl]piperidin-3-yl}propan-1-oic acid
- 10 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyrimidin-5-yl)propyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(pyrimidin-5-yl)butyl]piperidin-3-yl}propan-1-oic acid
- 15 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(pyrimidin-5-yl)thioethyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyrimidin-5-yl)thiopropyl]piperidin-3-yl}propan-1-oic acid
- 20 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyrazin-2-yl)propyl]piperidin-3-yl}-propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(pyrazin-2-yl)butyl]piperidin-3-yl}-propan-1-oic acid
- 25 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(pyrazin-2-yl)butyl]piperidin-3-yl}-propan-1-oic acid

- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(pyrazin-2-yl)thioethyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyrazin-2-yl)thiopropyl]piperidin-3-yl}propan-1-oic acid
- 5 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridazin-3-yl)propyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(pyridazin-3-yl)butyl]piperidin-3-yl}propan-1-oic acid
- 10 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(pyridazin-3-yl)thioethyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridazin-3-yl)thiopropyl]piperidin-3-yl}propan-1-oic acid
- 15 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridazin-4-yl)propyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(pyridazin-4-yl)butyl]piperidin-3-yl}propan-1-oic acid
- 20 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(pyridazin-4-yl)thioethyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-

- 4-yl}propyl]-1-[3-(pyridazin-4-yl)thiopropyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-phenylprop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- 5 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-fluorophenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-fluorophenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- 10 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-fluorophenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-chlorophenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- 15 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-chlorophenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-chlorophenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- 20 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-methylphenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-methylphenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- 25 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-methylphenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-methylphenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid

piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-methylphenyl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid

5 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-(trifluoromethyl)phenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-(trifluoromethyl)phenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid

10 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-(trifluoromethyl)phenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-

15 4-yl)propyl]-1-[3-(2-methoxyphenyl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-methoxyphenyl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid

20 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-methoxyphenyl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3,4-difluorophenyl)prop-2-ynyl]-

25 piperidin-3-yl}propan-1-oic acid

(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,4-difluorophenyl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid

- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3,4-dichlorophenyl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3-dichlorophenyl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,4-dichlorophenyl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid
- 10 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,4,6-trichlorophenyl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3,5-dichlorophenyl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid
- 15 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-chloro-3-fluorophenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-chloro-4-fluorophenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- 20 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-chloro-4-fluorophenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-chloro-5-fluorophenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- 25 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-chloro-5-fluorophenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-

- 4-yl)propyl]-1-[3-(4-chloro-2-fluorophenyl)prop-
2-ynyl]piperidin-3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(3-fluoro-4-methylphenyl)prop-
5 2-ynyl]piperidin-3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(4-chloro-3-(trifluoromethyl)phenyl)-
prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
10 4-yl)propyl]-1-[3-(2-chloro-4-(trifluoromethyl)-
phenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(2-chloro-5-(trifluoromethyl)-
phenyl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
15 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(5-chloro-2-methoxyphenyl)prop-
2-ynyl]piperidin-3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(3,5-bis(trifluoromethyl)phenyl)prop-
20 2-ynyl]piperidin-3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(3,5-dimethylphenyl)prop-2-ynyl]-
piperidin-3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
25 4-yl)propyl]-1-[3-(2,4-dichloro-6-methylphenyl)prop-
2-ynyl]piperidin-3-yl}propan-1-oic acid
(3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidin-

- 3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(5-chlorothien-2-yl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid
- 5 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-chlorothien-2-yl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(5-methylthien-2-yl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid
- 10 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-methylthien-2-yl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-3-yl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- 15 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(1-methylpyrrol-2-yl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(1-methylpyrrol-3-yl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid
- 20 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thiazol-2-yl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thiazol-4-yl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- 25 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thiazol-4-yl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid

- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thiazol-5-yl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(1-methylimidazol-2-yl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-methylimidazol-4-yl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- 10 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-methylpyrazol-4-yl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(oxazol-2-yl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- 15 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(oxazol-4-yl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(oxazol-5-yl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- 20 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridin-2-yl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridin-3-yl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- 25 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridin-3-yl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-

- 4-yl)propyl]-1-[3-(pyridin-4-yl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyrimidin-2-yl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid
- 5 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyrimidin-4-yl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyrimidin-5-yl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid
- 10 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyrazin-2-yl)prop-2-ynyl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridazin-3-yl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid
- 15 (3R,4R)-3-{4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridazin-4-yl)prop-2-ynyl]-piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-phenylpropen-2-yl]piperidin-3-yl}propan-1-oic acid
- (3R,4R)-3-{4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[4-phenylbuten-3-yl]piperidin-3-yl}propan-1-oic acid
- 20 (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-phenylpropen-2-yl]piperidin-3-yl}-propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-

- 4-yl)propyl]-1-[4-phenylbuten-3-yl]piperidin-3-yl}-
propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-phenylpropen-2-yl]piperidin-3-yl}-
5 propan-1-oic acid
- (3R,4R)-3-{4-[3-(R,S)-fluoro-3-(6-methoxyquinolin-
4-yl)propyl]-1-[4-phenylbuten-3-yl]piperidin-3-yl}-
propan-1-oic acid
- (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
10 propyl]-1-[2-phenylthioethyl]piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-phenylthiopropyl]piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(2-fluorophenylthio)ethyl]piperidine
- 15 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2-fluorophenylthio)propyl]piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(3-fluorophenylthio)ethyl]piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
20 propyl]-1-[3-(3-fluorophenylthio)propyl]piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(4-fluorophenylthio)ethyl]piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(4-fluorophenylthio)propyl]piperidine
- 25 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(2-chlorophenylthio)ethyl]piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(2-chlorophenylthio)propyl]piperidine

- (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(3-chlorophenylthio)ethyl]piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-chlorophenylthio)propyl]piperidine
- 5 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(4-chlorophenylthio)ethyl]piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(4-chlorophenylthio)propyl]piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(2-methylphenylthio)ethyl]piperidine
- 10 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(2-methylphenylthio)propyl]piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(3-methylphenylthio)ethyl]piperidine
- 15 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-methylphenylthio)propyl]piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(4-methylphenylthio)ethyl]piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(4-methylphenylthio)propyl]piperidine
- 20 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(2-trifluoromethylphenylthio)ethyl]-piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(2-trifluoromethylphenylthio)propyl]-piperidine
- 25 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(3-trifluoromethylphenylthio)ethyl]-

piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-trifluoromethylphenylthio)propyl]-
piperidine

5 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(4-trifluoromethylphenylthio)ethyl]-
piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(4-trifluoromethylphenylthio)propyl]-

10 piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(2-methoxyphenylthio)ethyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(2-methoxyphenylthio)propyl]-

15 piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(3-methoxyphenylthio)ethyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(3-methoxyphenylthio)propyl]piperidine

20 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
propyl]-1-[2-(4-methoxyphenylthio)ethyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(4-methoxyphenylthio)propyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-
4-yl)propyl]-1-[2-(thien-3-yl)thioethyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
propyl]-1-[3-(thien-3-yl)thiopropyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-

- propyl]-1-[2-(fur-2-yl)thioethyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(fur-2-yl)thiopropyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 5 propyl]-1-[2-(fur-3-yl)thioethyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(fur-3-yl)thiopropyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[2-(thiazol-2-yl)thioethyl]piperidine
 10 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(thiazol-2-yl)thiopropyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[2-(oxazol-2-yl)thioethyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 15 propyl]-1-[3-(oxazol-2-yl)thiopropyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[2-(pyridin-2-yl)thioethyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(pyridin-2-yl)thiopropyl]piperidine
 20 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[2-(pyridin-3-yl)thioethyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(pyridin-3-yl)thiopropyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 25 propyl]-1-[2-(pyridin-4-yl)thioethyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(pyridin-4-yl)thiopropyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-

- propyl]-1-[2-(pyrimidin-2-yl)thioethyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(pyrimidin-2-yl)thiopropyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 5 propyl]-1-[2-(pyrazin-2-yl)thioethyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(pyrazin-2-yl)thiopropyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[2-(pyridazin-3-yl)thioethyl]piperidine
 10 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(pyridazin-3-yl)thiopropyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[2-(pyridazin-4-yl)thioethyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 15 propyl]-1-[3-(pyridazin-4-yl)thiopropyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-phenylprop-2-ynyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(2-fluorophenyl)prop-2-ynyl]piperidine
 20 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(3-fluorophenyl)prop-2-ynyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(4-fluorophenyl)prop-2-ynyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-
 25 4-yl)propyl]-1-[3-(2-chlorophenyl)prop-2-ynyl]-
 piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(3-chlorophenyl)prop-2-ynyl]piperidine

- (3R, 4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(4-chlorophenyl)prop-2-ynyl]piperidine
- (3R, 4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(2-methylphenyl)prop-2-ynyl]piperidine
- 5 (3R, 4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-methylphenyl)prop-2-ynyl]piperidine
- (3R, 4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(4-methylphenyl)prop-2-ynyl]piperidine
- (3R, 4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(2-(trifluoromethyl)phenyl)prop-2-ynyl]-piperidine
- 10 (3R, 4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-(trifluoromethyl)phenyl)prop-2-ynyl]-piperidine
- (3R, 4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(4-(trifluoromethyl)phenyl)prop-2-ynyl]-piperidine
- 15 (3R, 4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(2-methoxyphenyl)prop-2-ynyl]-piperidine
- (3R, 4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-methoxyphenyl)prop-2-ynyl]-piperidine
- 20 (3R, 4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-methoxyphenyl)prop-2-ynyl]piperidine
- (3R, 4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-methoxyphenyl)prop-2-ynyl]-piperidine
- 25 (3R, 4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine
- (3R, 4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-

- propyl]-1-[3-(thien-3-yl)prop-2-ynyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(thiazol-2-yl)prop-2-ynyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 5 propyl]-1-[3-(thiazol-4-yl)prop-2-ynyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(thiazol-5-yl)prop-2-ynyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(oxazol-2-yl)prop-2-ynyl]piperidine
 10 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(oxazol-4-yl)prop-2-ynyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(oxazol-5-yl)prop-2-ynyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 15 propyl]-1-[3-(pyridin-2-yl)prop-2-ynyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(pyridin-3-yl)prop-2-ynyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(pyridin-4-yl)prop-2-ynyl]piperidine
 20 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(pyrimidin-2-yl)prop-2-ynyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(pyrazin-2-yl)prop-2-ynyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 25 propyl]-1-[3-(pyridazin-3-yl)prop-2-ynyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)-
 propyl]-1-[3-(pyridazin-4-yl)prop-2-ynyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-

- 3-(6-methoxyquinolin-4-yl)propyl]-1-[2-phenylthio-ethyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-phenylthio-propyl]piperidine
- 5 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-fluorophenylthio)ethyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-fluorophenylthio)propyl]piperidine
- 10 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-fluorophenylthio)ethyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-fluorophenylthio)propyl]piperidine
- 15 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(4-fluorophenylthio)ethyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-fluorophenylthio)propyl]piperidine
- 20 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-chlorophenylthio)ethyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-chlorophenylthio)propyl]piperidine
- 25 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-chlorophenylthio)ethyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-chlorophenylthio)propyl]piperidine

thio)propyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-chlorophenyl-
thio)ethyl]piperidine

5 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-chlorophenyl-
thio)propyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(4-chlorophenyl-
10 thio)ethyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-Hydroxy-
3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-chlorophenyl-
thio)propyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
15 3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-methylphenyl-
thio)ethyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-methylphenyl-
thio)propyl]piperidine

20 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-methylphenyl-
thio)ethyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-methyl-
25 phenylthio)propyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(4-methylphenyl-
thio)ethyl]piperidine

- (3R, 4R)-3-Hydroxymethyl-4-[3-(R, S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-methylphenylthio)propyl]piperidine
- (3R, 4R)-3-Hydroxymethyl-4-[3-(R, S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-trifluoromethylphenylthio)ethyl]piperidine
- 5 (3R, 4R)-3-Hydroxymethyl-4-[3-(R, S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-trifluoromethylphenylthio)propyl]piperidine
- 10 (3R, 4R)-3-Hydroxymethyl-4-[3-(R, S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-trifluoromethylphenylthio)ethyl]piperidine
- (3R, 4R)-3-Hydroxymethyl-4-[3-(R, S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-trifluoromethylphenylthio)propyl]piperidine
- 15 (3R, 4R)-3-Hydroxymethyl-4-[3-(R, S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(4-trifluoromethylphenylthio)ethyl]piperidine
- (3R, 4R)-3-Hydroxymethyl-4-[3-(R, S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-trifluoromethylphenylthio)propyl]piperidine
- 20 (3R, 4R)-3-Hydroxymethyl-4-[3-(R, S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-methoxyphenylthio)ethyl]piperidine
- 25 (3R, 4R)-3-Hydroxymethyl-4-[3-(R, S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-methoxyphenylthio)propyl]piperidine
- (3R, 4R)-3-Hydroxymethyl-4-[3-(R, S)-hydroxy-

- 3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-methoxy-phenylthio)ethyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-methoxy-phenylthio)propyl]piperidine
 5 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(4-methoxy-phenylthio)ethyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-methoxy-phenylthio)propyl]piperidine
 10 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(thien-3-yl)-thioethyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-3-yl)-thiopropyl]piperidine
 15 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(fur-2-yl)-thioethyl]piperidine
 20 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(fur-2-yl)-thiopropyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(fur-3-yl)-thioethyl]piperidine
 25 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(fur-3-yl)-

- thiopropyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
 3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(thiazol-2-yl)-
 thioethyl]piperidine
- 5 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
 3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thiazol-2-yl)-
 thiopropyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
 3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(oxazol-2-yl)-
 10 thioethyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
 3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(oxazol-2-yl)-
 thiopropyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
 15 3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(pyridin-2-yl)-
 thioethyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
 3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridin-2-yl)-
 thiopropyl]piperidine
- 20 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
 3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(pyridin-3-yl)-
 thioethyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
 3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridin-3-yl)-
 25 thiopropyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
 3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(pyridin-4-yl)-
 thioethyl]piperidine

- (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridin-4-yl)-thiopropyl]piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(pyrimidin-2-yl)thioethyl]piperidine
- 5 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyrimidin-2-yl)thiopropyl]piperidine
- 10 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(pyrazin-2-yl)-thioethyl]piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyrazin-2-yl)-thiopropyl]piperidine
- 15 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(pyridazin-3-yl)thioethyl]piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridazin-3-yl)thiopropyl]piperidine
- 20 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(pyridazin-4-yl)thioethyl]piperidine
- 25 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridazin-4-yl)thiopropyl]piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-

3-(6-methoxyquinolin-4-yl)propyl]-1-[3-phenylprop-2-ynyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-

3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-fluoro-

5 phenyl)prop-2-ynyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-

3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-fluorophenyl)prop-2-ynyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-

10 3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-fluorophenyl)prop-2-ynyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-

3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-chlorophenyl)prop-2-ynyl]piperidine

15 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-

3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-chlorophenyl)prop-2-ynyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-

3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-chlorophenyl)prop-2-ynyl]piperidine

20 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-

3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-methylphenyl)prop-2-ynyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-

25 3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-methylphenyl)prop-2-ynyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-

3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-methyl-

- phenyl)prop-2-ynyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
 3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-(trifluoro-
 methyl)phenyl)prop-2-ynyl]piperidine
- 5 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
 3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-(trifluoro-
 methyl)phenyl)prop-2-ynyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
 3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-(trifluoro-
 10 methyl)phenyl)prop-2-ynyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
 3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-methoxy-
 phenyl)prop-2-ynyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
 15 3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-methoxy-
 phenyl)prop-2-ynyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
 3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(4-methoxy-
 phenyl)prop-2-ynyl]piperidine
- 20 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
 3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)-
 prop-2-ynyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
 3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-3-yl)-
 25 prop-2-ynyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
 3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thiazol-2-yl)-
 prop-2-ynyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thiazol-4-yl)-
prop-2-ynyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
5 3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thiazol-5-yl)-
prop-2-ynyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(oxazol-2-
yl)prop-2-ynyl]piperidine

10 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(oxazol-4-
yl)prop-2-ynyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(oxazol-5-
15 yl)prop-2-ynyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridin-2-
yl)prop-2-ynyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
20 3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridin-3-
yl)prop-2-ynyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridin-4-
yl)prop-2-ynyl]piperidine

25 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyrimidin-2-
yl)prop-2-ynyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-

- 3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyrazin-2-yl)prop-2-ynyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridazin-3-yl)prop-2-ynyl]piperidine
 5 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridazin-4-yl)prop-2-ynyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-phenylthioethyl]piperidine
 10 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-phenylthiopropyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-fluorophenylthio)ethyl]-
 15 piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-fluorophenylthio)propyl]-piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-fluorophenylthio)ethyl]-
 20 piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-fluorophenylthio)propyl]-piperidine
 25 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(4-fluorophenylthio)ethyl]-piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-

quinolin-4-yl)propyl]-1-[3-(4-fluorophenylthio)propyl]-
piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
quinolin-4-yl)propyl]-1-[2-(2-chlorophenylthio)ethyl]-

5 piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
quinolin-4-yl)propyl]-1-[3-(2-chlorophenylthio)propyl]-
piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
10 quinolin-4-yl)propyl]-1-[2-(3-chlorophenylthio)ethyl]-
piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
quinolin-4-yl)propyl]-1-[3-(3-chlorophenylthio)propyl]-
piperidine

15 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
quinolin-4-yl)propyl]-1-[2-(4-chlorophenylthio)ethyl]-
piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
quinolin-4-yl)propyl]-1-[3-(4-chlorophenylthio)propyl]-

20 piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
quinolin-4-yl)propyl]-1-[2-(2-methylphenylthio)ethyl]-
piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
25 quinolin-4-yl)propyl]-1-[3-(2-methylphenylthio)propyl]-
piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
quinolin-4-yl)propyl]-1-[2-(3-methylphenylthio)ethyl]-

piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-(3-methylphenylthio)propyl]-piperidine

- 5 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[2-(4-methylphenylthio)ethyl]-piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-(4-methylphenylthio)propyl]-

- 10 piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[2-(2-trifluoromethylphenylthio)ethyl]piperidine

- 15 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-(2-trifluoromethylphenylthio)propyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[2-(3-trifluoromethylphenylthio)ethyl]piperidine

- 20 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-(3-trifluoromethylphenylthio)propyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[2-(4-trifluoromethylphenyl-

- 25 thio)ethyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-(4-trifluoromethylphenylthio)propyl]piperidine

(3R, 4R)-3-Hydroxymethyl-4-[3-(R, S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[2-(2-methoxyphenylthio)ethyl]-piperidine

(3R, 4R)-3-Hydroxymethyl-4-[3-(R, S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-(2-methoxyphenylthio)-propyl]piperidine

(3R, 4R)-3-Hydroxymethyl-4-[3-(R, S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[2-(3-methoxyphenylthio)ethyl]-piperidine

10 (3R, 4R)-3-Hydroxymethyl-4-[3-(R, S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-(3-methoxyphenylthio)-propyl]piperidine

(3R, 4R)-3-Hydroxymethyl-4-[3-(R, S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[2-(4-methoxyphenylthio)ethyl]-piperidine

(3R, 4R)-3-Hydroxymethyl-4-[3-(R, S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-(4-methoxyphenylthio)-propyl]piperidine

20 (3R, 4R)-3-Hydroxymethyl-4-[3-(R, S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[2-(thien-3-yl)thioethyl]-piperidine

(3R, 4R)-3-Hydroxymethyl-4-[3-(R, S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-(thien-3-yl)thiopropyl]-piperidine

25 (3R, 4R)-3-Hydroxymethyl-4-[3-(R, S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[2-(fur-2-yl)thioethyl]-piperidine

(3R, 4R)-3-Hydroxymethyl-4-[3-(R, S)-fluoro-3-(6-methoxy-

- quinolin-4-yl)propyl]-1-[3-(fur-2-yl)thiopropyl]-
piperidine
(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
quinolin-4-yl)propyl]-1-[2-(fur-3-yl)thioethyl]-
5 piperidine
(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
quinolin-4-yl)propyl]-1-[3-(fur-3-yl)thiopropyl]-
piperidine
(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
10 quinolin-4-yl)propyl]-1-[2-(thiazol-2-yl)thioethyl]-
piperidine
(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
quinolin-4-yl)propyl]-1-[3-(thiazol-2-yl)thiopropyl]-
piperidine
15 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
quinolin-4-yl)propyl]-1-[2-(oxazol-2-yl)thioethyl]-
piperidine
(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
quinolin-4-yl)propyl]-1-[3-(oxazol-2-yl)thiopropyl]-
20 piperidine
(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
quinolin-4-yl)propyl]-1-[2-(pyridin-2-yl)thioethyl]-
piperidine
(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
25 quinolin-4-yl)propyl]-1-[3-(pyridin-2-yl)thiopropyl]-
piperidine
(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
quinolin-4-yl)propyl]-1-[2-(pyridin-3-yl)thioethyl]-

piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-(pyridin-3-yl)thiopropyl]-piperidine

- 5 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[2-(pyridin-4-yl)thioethyl]-piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-(pyridin-4-yl)thiopropyl]-

- 10 piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[2-(pyrimidin-2-yl)thioethyl]-piperidine

- 15 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-(pyrimidin-2-yl)thiopropyl]-piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[2-(pyrazin-2-yl)thioethyl]-piperidine

- 20 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-(pyrazin-2-yl)thiopropyl]-piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[2-(pyridazin-3-yl)thioethyl]-

- 25 piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-(pyridazin-3-yl)thiopropyl]-piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[2-(pyridazin-4-yl)thioethyl]-piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-(pyridazin-4-yl)thiopropyl]-piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-phenylprop-2-ynyl]-piperidine

10 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-(2-fluorophenyl)prop-2-ynyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-(3-fluorophenyl)prop-

15 2-ynyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-(4-fluorophenyl)prop-2-ynyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-(2-chlorophenyl)prop-2-ynyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-(3-chlorophenyl)prop-2-ynyl]piperidine

25 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-(4-chlorophenyl)prop-2-ynyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-

quinolin-4-yl)propyl]-1-[3-(2-methylphenyl)prop-
2-ynyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
quinolin-4-yl)propyl]-1-[3-(3-methylphenyl)prop-

5 2-ynyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
quinolin-4-yl)propyl]-1-[3-(4-methylphenyl)prop-
2-ynyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
10 quinolin-4-yl)propyl]-1-[3-(2-(trifluoromethyl)phenyl)-
prop-2-ynyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
quinolin-4-yl)propyl]-1-[3-(3-(trifluoromethyl)phenyl)-
prop-2-ynyl]piperidine

15 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
quinolin-4-yl)propyl]-1-[3-(4-(trifluoromethyl)phenyl)-
prop-2-ynyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
quinolin-4-yl)propyl]-1-[3-(2-methoxyphenyl)prop-

20 2-ynyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
quinolin-4-yl)propyl]-1-[3-(3-methoxyphenyl)prop-
2-ynyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
25 quinolin-4-yl)propyl]-1-[3-(4-methoxy-phenyl)prop-
2-ynyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
quinolin-4-yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]-

piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-(thien-3-yl)prop-2-ynyl]-

piperidine

- 5 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-(thiazol-2-yl)prop-2-ynyl]-piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-(thiazol-4-yl)prop-2-ynyl]-

- 10 piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-(thiazol-5-yl)prop-2-ynyl]-

piperidine

- 15 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-(oxazol-2-yl)prop-2-ynyl]-piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-(oxazol-4-yl)prop-2-ynyl]-

piperidine

- 20 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-(oxazol-5-yl)prop-2-ynyl]-piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-(pyridin-2-yl)prop-2-ynyl]-

- 25 piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-(pyridin-3-yl)prop-2-ynyl]-

piperidine

- (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridin-4-yl)prop-2-ynyl]-piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyrimidin-2-yl)prop-2-ynyl]piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyrazin-2-yl)prop-2-ynyl]-piperidine
- 10 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridazin-3-yl)prop-2-ynyl]piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridazin-4-yl)prop-2-ynyl]piperidine
- 15 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[4-fluoro-4-phenylbutyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(3,5-difluorophenylthio)ethyl]piperidine-3-carboxylic acid
- 20 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(3,5-difluorophenylthio)propyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(2,5-difluorophenylthio)ethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(2,5-difluorophenylthio)propyl]piperidine-3-carboxylic acid
- 25 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(2,3,4,6-tetrafluorophenylthio)ethyl]piperidine-3-carboxylic acid

- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(2,3,4,6-tetrafluorophenylthio)propyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(3-fluoro-5-chlorophenylthio)ethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(3-fluoro-5-chlorophenylthio)propyl]piperidine-3-carboxylic acid
- 10 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(3-trifluoromethoxyphenylthio)ethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(3-trifluoromethoxyphenylthio)propyl]piperidine-3-carboxylic acid
- 15 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(3-cyanophenylthio)ethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(3-cyanophenylthio)propyl]piperidine-3-carboxylic acid
- 20 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(pyridin-2-yl)thioethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(pyridin-2-yl)thiopropyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(3-fluoropyridin-2-yl)thioethyl]piperidine-3-carboxylic acid
- 25 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(3-fluoropyridin-2-yl)thiopropyl]piperidine-3-carboxylic acid

acid

- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(cycloheptylthio)ethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(cycloheptylthio)propyl]piperidine-3-carboxylic acid
- 5 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(tert-butylthio)ethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(tert-butylthio)propyl]piperidine-3-carboxylic acid
- 10 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(2,3-difluorophenyl)prop-2-ynyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(2,5-difluorophenyl)prop-2-ynyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(3,5-difluorophenyl)prop-2-ynyl]piperidine-3-carboxylic acid
- 15 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(2,6-difluorophenyl)prop-2-ynyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(2,3,5-trifluorophenyl)prop-2-ynyl]piperidine-3-
- 20 carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(2,3,6-trifluorophenyl)prop-2-ynyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(2-
- 25 cyano-3-fluorophenyl)prop-2-ynyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-cyano-6-fluorophenyl)prop-2-ynyl]piperidine-3-

carboxylic acid

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-acetamido-5-fluorophenyl]prop-2-ynyl]piperidine-3-carboxylic acid

- 5 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-trifluoromethoxyphenyl]prop-2-ynyl]piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-fluoro-3-phenylpropyl]piperidine-3-

- 10 carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-fluoro-4-phenylbutyl]piperidine-3-carboxylic acid

- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3,5-difluorophenylthio)propyl]-piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2,5-difluorophenylthio)ethyl]-piperidine-3-carboxylic acid

- 20 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,5-difluorophenylthio)propyl]-piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2,3,4,6-tetrafluorophenylthio)ethyl]-

- 25 piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3,4,6-tetrafluorophenylthio)propyl]-piperidine-3-carboxylic acid

- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-fluoro-5-chlorophenylthio)-ethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-fluoro-5-chlorophenylthio)-propyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-trifluoromethoxyphenylthio)ethyl]-piperidine-3-carboxylic acid
- 10 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-trifluoromethoxyphenylthio)-propyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-cyanophenylthio)ethyl]piperidine-3-
- 15 carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-cyanophenylthio)propyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridin-2-yl)thiopropyl]piperidine-3-
- 20 carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-fluoropyridin-2-yl)thioethyl]-piperidine-3-carboxylic acid
- 25 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-fluoropyridin-2-yl)thiopropyl]-piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-

- yl)propyl]-1-[3-(cycloheptylthio)propyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(tert-butylthio)propyl]piperidine-3-
- 5 carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3,5-trifluorophenyl)prop-2-ynyl]-piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-
- 10 yl)propyl]-1-[3-(2,3,6-trifluorophenyl)prop-2-ynyl]-piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-cyano-3-fluorophenyl)prop-2-ynyl]-piperidine-3-carboxylic acid
- 15 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-cyano-6-fluorophenyl)prop-2-ynyl]-piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-acetamido-5-fluorophenyl)prop-2-ynyl]-
- 20 piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-trifluoromethoxyphenyl)prop-2-ynyl]-piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-
- 25 yl)propyl]-1-[3-fluoro-3-phenylpropyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-fluoro-4-phenylbutyl]piperidine-3-

carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3,5-difluorophenylthio)ethyl]-piperidine-3-carboxylic acid

- 5 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3,5-difluorophenylthio)propyl]-piperidine-3-carboxylic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2,5-difluorophenylthio)ethyl]-piperidine-3-carboxylic acid

- 10 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,5-difluorophenylthio)propyl]-piperidine-3-carboxylic acid

- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2,3,4,6-tetrafluorophenylthio)ethyl]piperidine-3-carboxylic acid

- 15 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3,4,6-tetrafluorophenylthio)propyl]piperidine-3-carboxylic acid

- 20 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-fluoro-5-chlorophenylthio)ethyl]-piperidine-3-carboxylic acid

- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-fluoro-5-chlorophenylthio)propyl]piperidine-3-carboxylic acid

- 25 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-trifluoromethoxyphenylthio)ethyl]piperidine-3-carboxylic acid

- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-trifluoromethoxyphenylthio)-propyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-cyanophenylthio)ethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-cyanophenylthio)propyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(pyridin-2-yl)thioethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(pyridin-2-yl)thiopropyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-fluoropyridin-2-yl)thioethyl]-piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-fluoropyridin-2-yl)thiopropyl]-piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cycloheptylthio)ethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(cycloheptylthio)propyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-

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- 15 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-cyano-6-fluorophenyl]prop-2-ynyl]-piperidine-3-carboxylic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-trifluoromethoxyphenyl]prop-2-ynyl]-
20 piperidine-3-carboxylic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-fluoro-3-phenylpropyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[4-fluoro-4-phenylbutyl]piperidine-3-acetic acid
25 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(3,5-difluorophenylthio)ethyl]piperidine-3-acetic acid
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(3,5-difluorophenylthio)propyl]piperidine-3-acetic acid

- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(2,5-difluorophenylthio)ethyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(2,5-difluorophenylthio)propyl]piperidine-3-acetic acid
- 5 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(2,3,4,6-tetrafluorophenylthio)ethyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(2,3,4,6-tetrafluorophenylthio)propyl]piperidine-3-
- 10 acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(3-fluoro-5-chlorophenylthio)ethyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(3-
- 15 fluoro-5-chlorophenylthio)propyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(3-trifluoromethoxyphenylthio)ethyl]piperidine-3-acetic acid
- 20 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(3-trifluoromethoxyphenylthio)propyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(3-cyanophenylthio)ethyl]piperidine-3-acetic acid
- 25 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(3-cyanophenylthio)propyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(pyridin-2-yl)thioethyl]piperidine-3-acetic acid

- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(pyridin-2-yl)thiopropyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(3-fluoropyridin-2-yl)thioethyl]piperidine-3-acetic acid
- 5 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(3-fluoropyridin-2-yl)thiopropyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(cycloheptylthio)ethyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(cycloheptylthio)propyl]piperidine-3-acetic acid
- 10 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(tert-butylthio)ethyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(tert-butylthio)propyl]piperidine-3-acetic acid
- 15 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(2,3-difluorophenyl)prop-2-ynyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(2,5-difluorophenyl)prop-2-ynyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(2,6-difluorophenyl)prop-2-ynyl]piperidine-3-acetic acid
- 20 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(2,3,5-trifluorophenyl)prop-2-ynyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(2,3,6-trifluorophenyl)prop-2-ynyl]piperidine-3-acetic acid
- 25 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(2-cyano-3-fluorophenyl)prop-2-ynyl]piperidine-3-acetic acid

acid

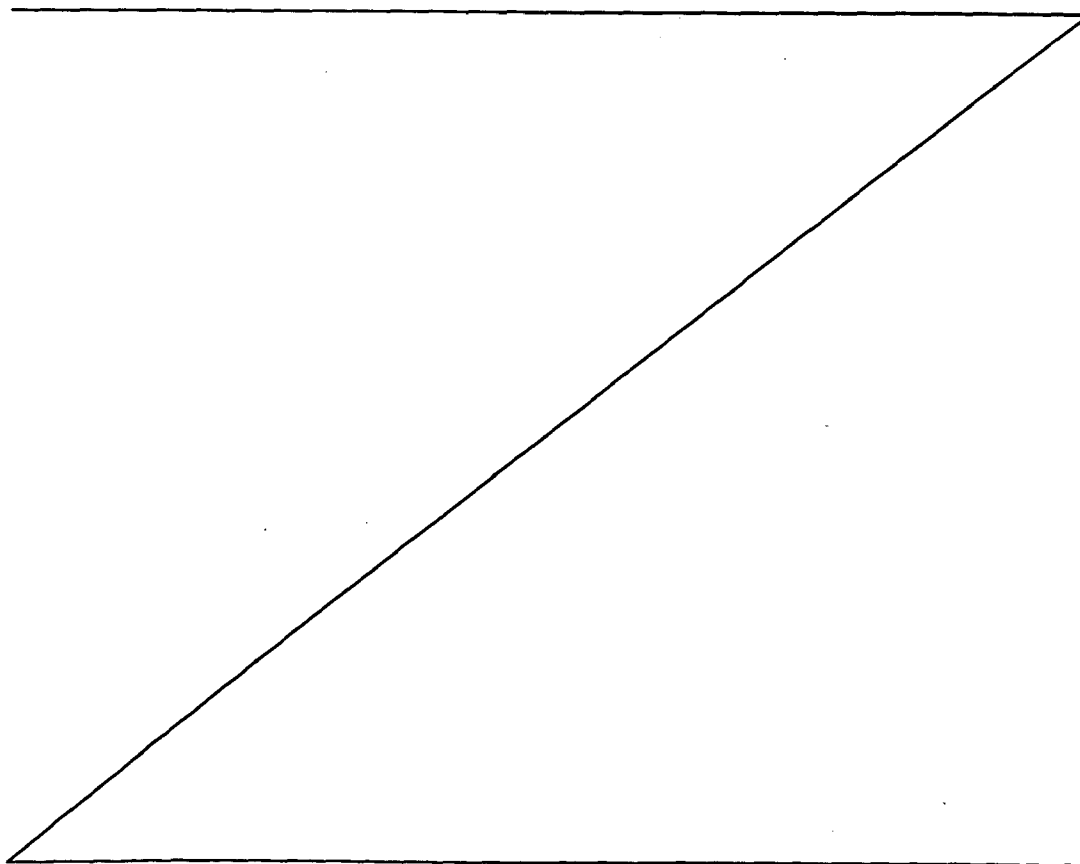
(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-cyano-6-fluorophenyl]prop-2-ynyl]piperidine-3-acetic acid

- 5 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-trifluoromethoxyphenyl]prop-2-ynyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-fluoro-3-phenylpropyl]piperidine-3-

- 10 acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-fluoro-4-phenylbutyl]piperidine-3-acetic acid



(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-fluoro-4-phenylbutyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3,5-difluorophenylthio)ethyl]-piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3,5-difluorophenylthio)propyl]-piperidine-3-acetic acid

10 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2,5-difluorophenylthio)ethyl]-piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,5-difluorophenylthio)propyl]-

15 piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2,3,4,6-tetrafluorophenylthio)ethyl]-piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3,4,6-tetrafluorophenylthio)propyl]-piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-fluoro-5-chlorophenylthio)ethyl]-piperidine-3-acetic acid

25 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-fluoro-5-chlorophenylthio)propyl]-piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-

- yl)propyl]-1-[2-(3-trifluoromethoxyphenylthio)ethyl]-
piperidine-3-acetic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-
yl)propyl]-1-[3-(3-trifluoromethoxyphenylthio)propyl]-
5 piperidine-3-acetic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-
yl)propyl]-1-[2-(3-cyanophenylthio)ethyl]piperidine-3-
acetic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-
10 yl)propyl]-1-[3-(3-cyanophenylthio)propyl]piperidine-3-
acetic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-
yl)propyl]-1-[2-(pyridin-2-yl)thioethyl]piperidine-3-
acetic acid
15 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-
yl)propyl]-1-[3-(pyridin-2-yl)thiopropyl]piperidine-3-
acetic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-
yl)propyl]-1-[2-(3-fluoropyridin-2-yl)thioethyl]-
20 piperidine-3-acetic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-
yl)propyl]-1-[3-(3-fluoropyridin-2-yl)thiopropyl]-
piperidine-3-acetic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-
25 yl)propyl]-1-[2-(cycloheptylthio)ethyl]piperidine-3-
acetic acid
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-
yl)propyl]-1-[3-(cycloheptylthio)propyl]piperidine-3-

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(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(tert-butylthio)ethyl]piperidine-3-

acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(tert-butylthio)propyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3-difluorophenyl)prop-2-ynyl]-piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,5-difluorophenyl)prop-2-ynyl]-piperidine-3-acetic acid

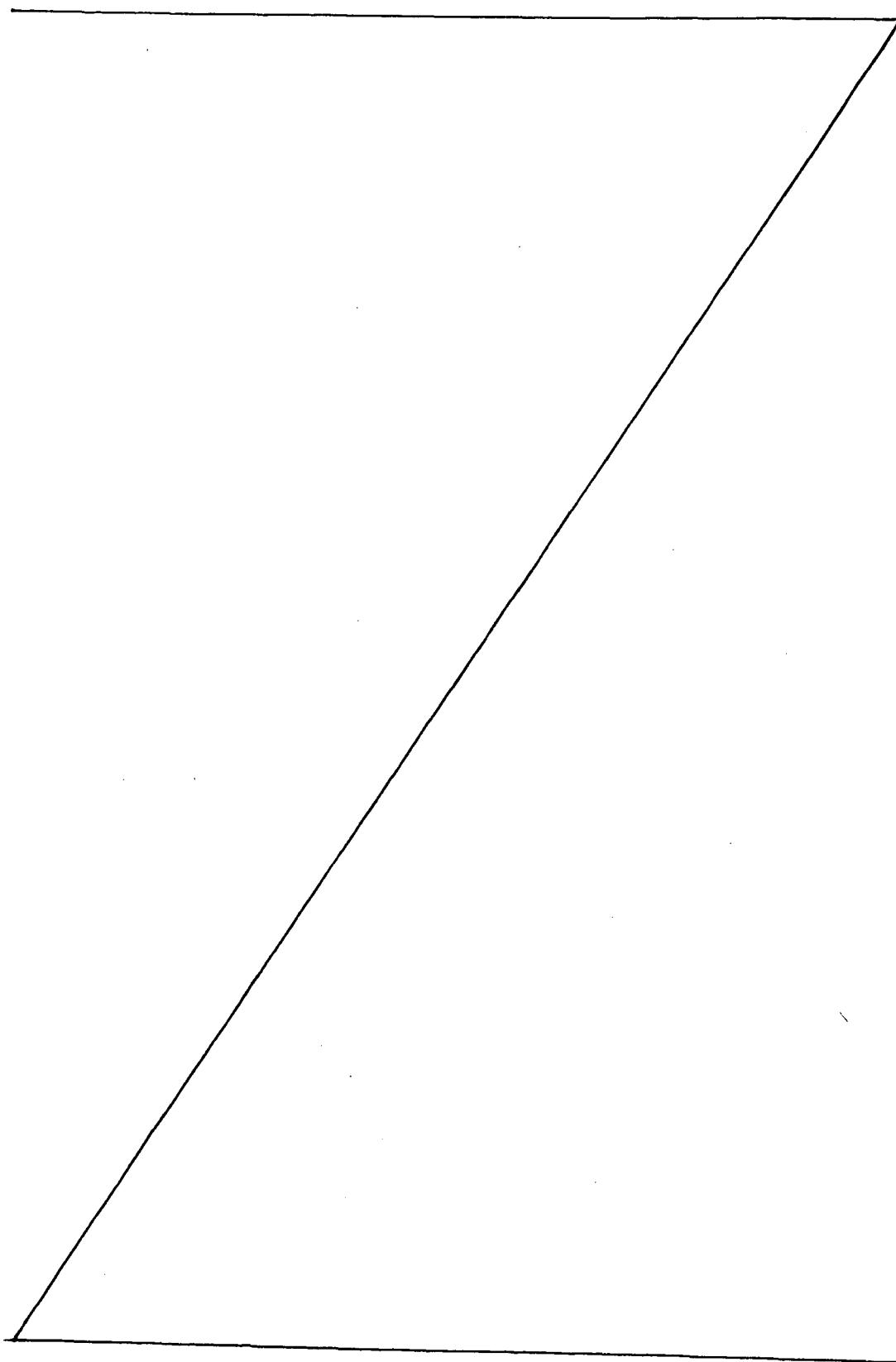
(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3,5-difluorophenyl)prop-2-ynyl]-piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,6-difluorophenyl)prop-2-ynyl]-piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3,5-trifluorophenyl)prop-2-ynyl]piperidine-3-acetic acid

- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3,6-trifluorophenyl)prop-2-ynyl]-piperidine-3-acetic acid
- 5 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-cyano-3-fluorophenyl)prop-2-ynyl]-piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-cyano-6-fluorophenyl)prop-2-ynyl]-piperidine-3-acetic acid
- 10 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-trifluoromethoxyphenyl)prop-2-ynyl]-piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-fluoro-3-phenylpropyl]piperidine-3-
- 15 acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[4-fluoro-4-phenylbutyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-
- 20 yl)propyl]-1-[2-(3,5-difluorophenylthio)ethyl]-piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3,5-difluorophenylthio)propyl]-piperidine-3-acetic acid
- 25 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2,5-difluorophenylthio)ethyl]-piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-

yl)propyl]-1-[3-(2,5-difluorophenylthio)propyl]-
piperidine-3-acetic acid



AMENDED SHEET

acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-fluoropyridin-2-yl)thioethyl]-piperidine-3-acetic acid

- 5 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-fluoropyridin-2-yl)thiopropyl]-piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cycloheptylthio)ethyl]piperidine-3-

- 10 acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(cycloheptylthio)propyl]piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-

- 15 yl)propyl]-1-[2-(tert-butylthio)ethyl]piperidine-3-acetic acid

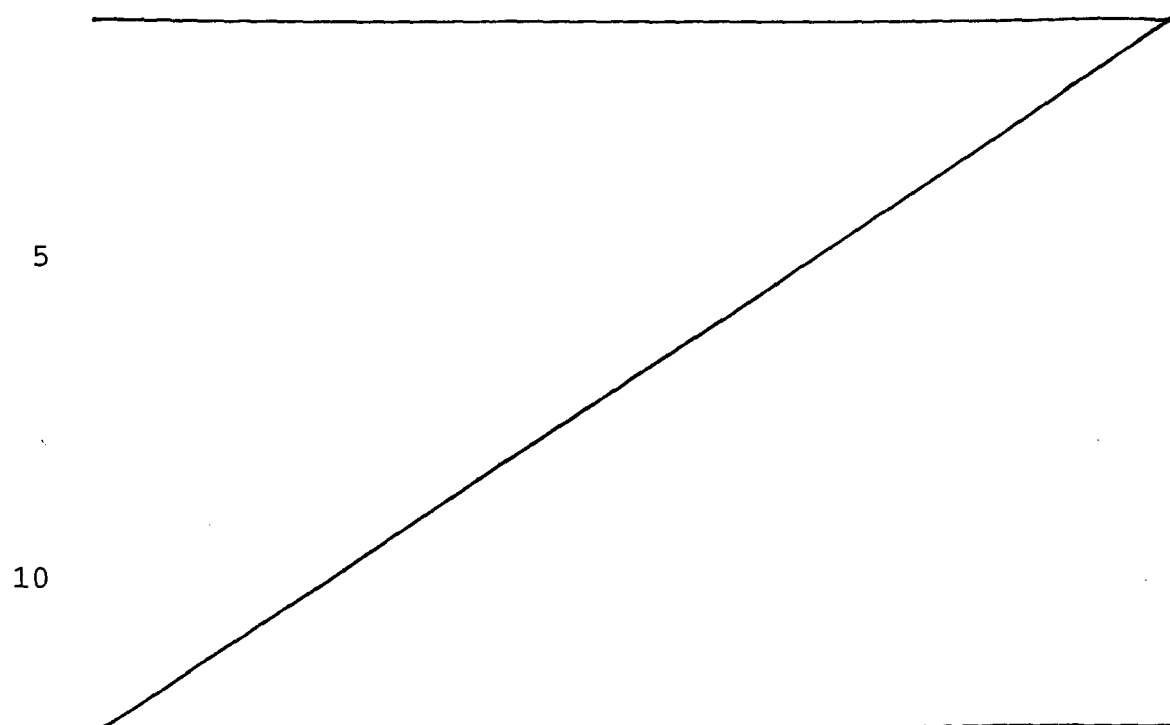
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(tert-butylthio)propyl]piperidine-3-acetic acid

- 20 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3-difluorophenyl)prop-2-ynyl]-piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,5-difluorophenyl)prop-2-ynyl]-

- 25 piperidine-3-acetic acid

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3,5-difluorophenyl)prop-2-ynyl]-piperidine-3-acetic acid



- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3,5-difluorophenyl)prop-2-ynyl]-
 15 piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,6-difluorophenyl)prop-2-ynyl]-
 piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3,5-trifluorophenyl)prop-2-ynyl]-
 20 piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3,6-trifluorophenyl)prop-2-ynyl]-
 piperidine-3-acetic acid
- 25 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-cyano-3-fluorophenyl)prop-2-ynyl]-
 piperidine-3-acetic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-

- yl)propyl]-1-[3-cyano-6-fluorophenyl)prop-2-ynyl]-
piperidine-3-acetic acid
(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-
yl)propyl]-1-[3-trifluoromethoxyphenyl)prop-2-ynyl]-
5 piperidine-3-acetic acid
(3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-
yl)propyl]-1-[2-(3,5-difluorophenylthio)ethyl]-
piperidine
(3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-
10 yl)propyl]-1-[3-(3,5-difluorophenylthio)propyl]-
piperidine
(3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-
yl)propyl]-1-[2-(2,5-difluorophenylthio)ethyl]-
piperidine
15 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-
yl)propyl]-1-[3-(2,5-difluorophenylthio)propyl]-
piperidine
(3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-
yl)propyl]-1-[2-(2,3,4,6-tetrafluorophenylthio)ethyl]-
20 piperidine
(3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-
yl)propyl]-1-[3-(2,3,4,6-tetrafluorophenylthio)propyl]-
piperidine
(3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-
25 yl)propyl]-1-[2-(3-fluoro-5-chlorophenylthio)ethyl]-
piperidine
(3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-
yl)propyl]-1-[3-(3-fluoro-5-chlorophenylthio)propyl]-

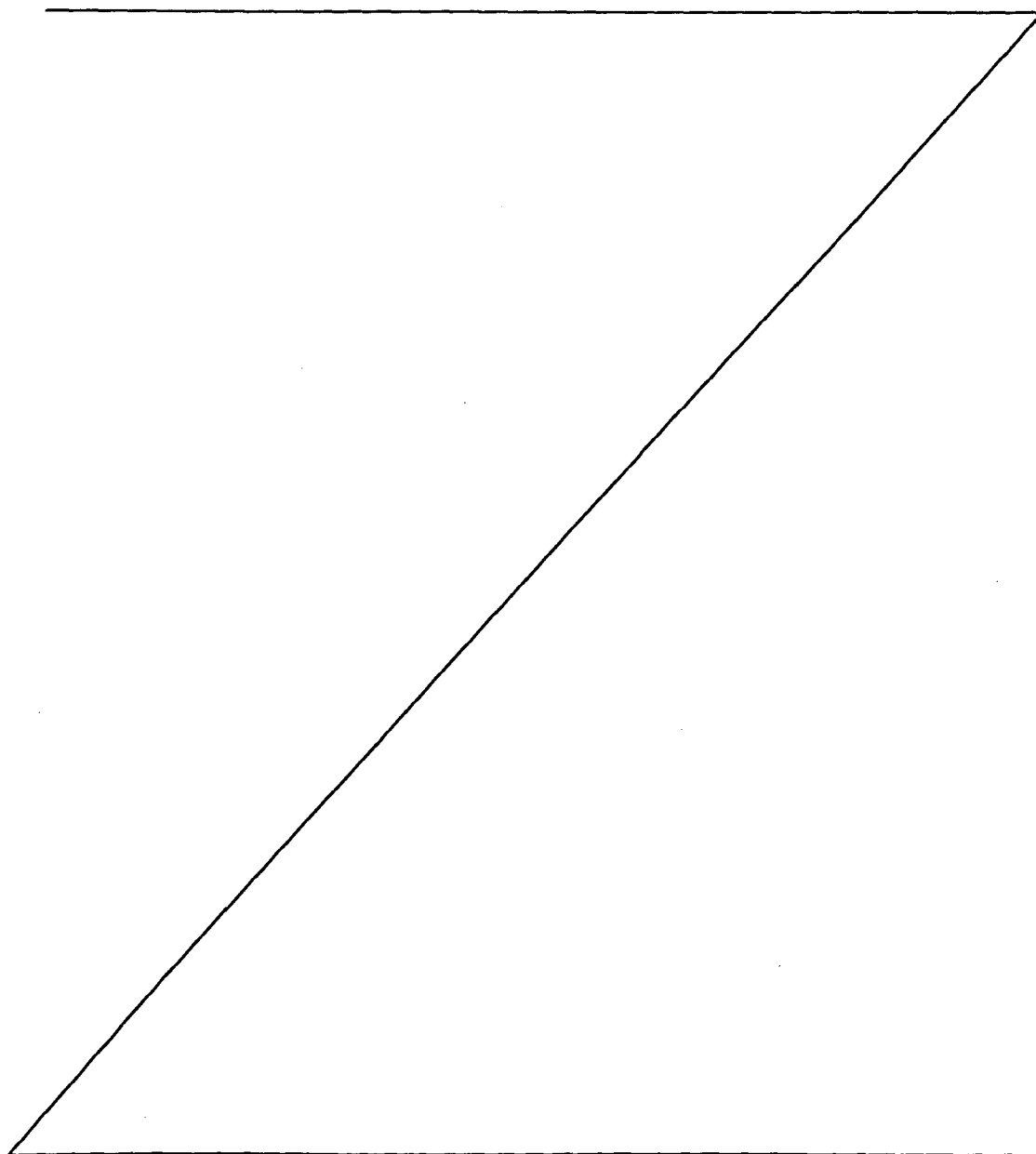
piperidine

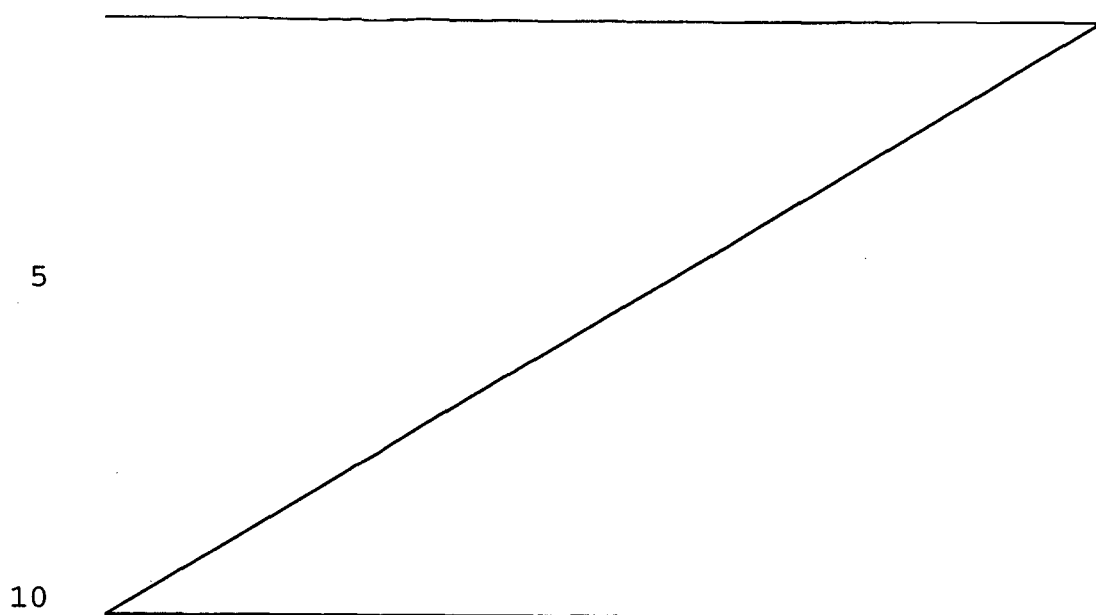
(3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-trifluoromethoxyphenylthio)ethyl]-

piperidine

5 (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-trifluoromethoxyphenylthio)propyl]-

piperidine





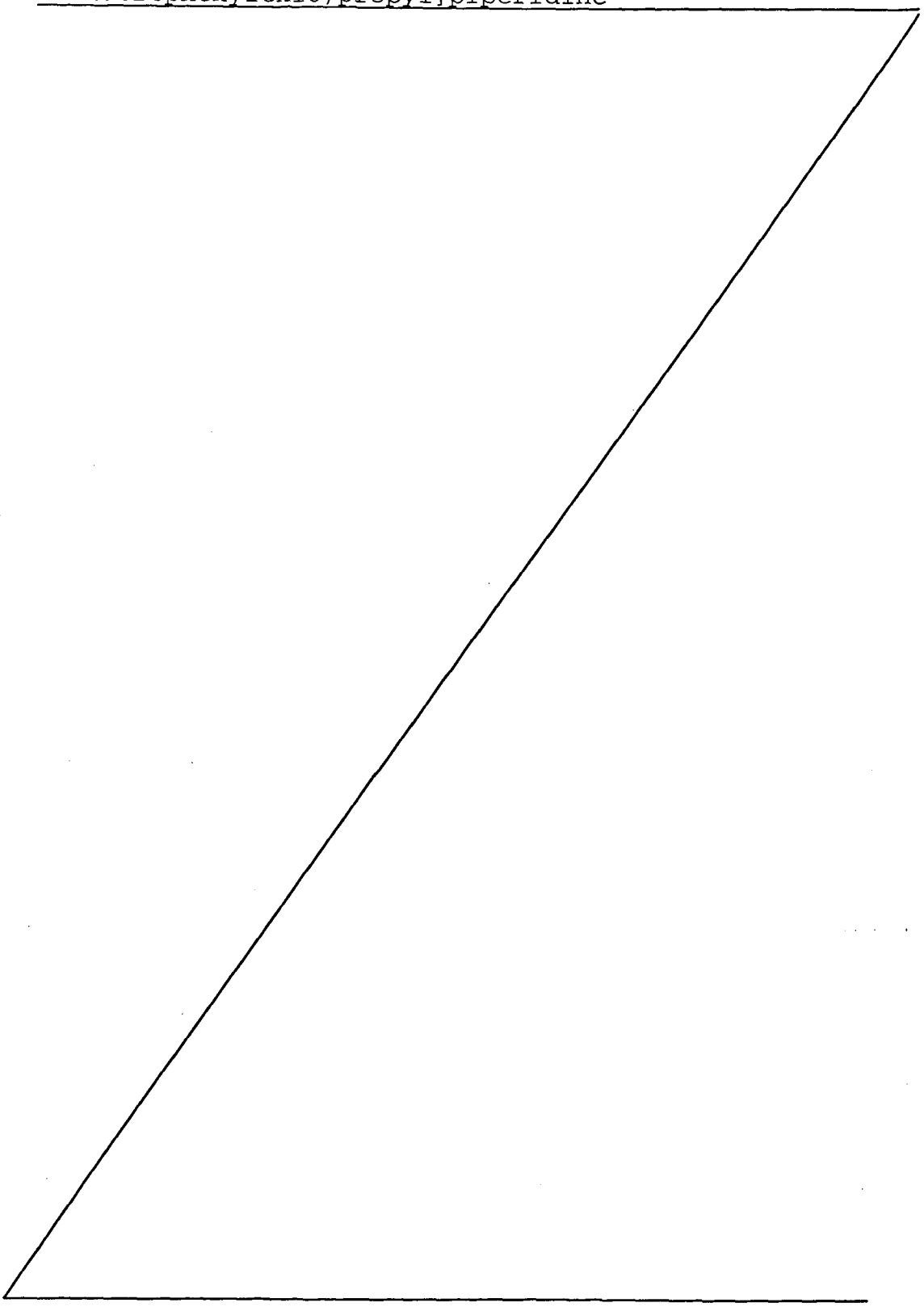
- (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[3-cyano-6-fluorophenyl]prop-2-ynyl]-piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[3-trifluoromethoxyphenyl]prop-2-ynyl]-piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3,5-difluorophenylthio)ethyl]piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3,5-difluorophenylthio)propyl]piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2,5-difluorophenylthio)ethyl]piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,5-difluorophenylthio)propyl]piperidine

- (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2,3,4,6-tetrafluorophenylthio)ethyl]piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3,4,6-tetrafluorophenylthio)propyl]piperidine
- 5 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-fluoro-5-chlorophenylthio)ethyl]piperidine
- 10 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-fluoro-5-chlorophenylthio)propyl]piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-trifluoromethoxyphenylthio)ethyl]piperidine
- 15 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-trifluoromethoxyphenylthio)propyl]piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-cyanophenylthio)ethyl]piperidine
- 20 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-cyanophenylthio)propyl]piperidine
- 25 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(pyridin-2-yl)thioethyl]piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-

- methoxyquinolin-4-yl)propyl]-1-[3-(pyridin-2-yl)thiopropyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-fluoropyridin-2-yl)thioethyl]piperidine
 5 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-fluoropyridin-2-yl)thiopropyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cycloheptylthio)ethyl]piperidine
 10 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(cycloheptylthio)propyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(tert-butylthio)ethyl]piperidine
 15 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(tert-butylthio)propyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3-difluorophenyl)prop-2-ynyl]piperidine
 20 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,5-difluorophenyl)prop-2-ynyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3,5-difluoro-

- phenyl)prop-2-ynyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,6-difluorophenyl)prop-2-ynyl]piperidine
- 5 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3,5-trifluorophenyl)prop-2-ynyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3,6-trifluorophenyl)prop-2-ynyl]piperidine
- 10 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-cyano-3-fluorophenyl)prop-2-ynyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-cyano-6-fluorophenyl)prop-2-ynyl]piperidine
- 15 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-trifluoromethoxyphenyl)prop-2-ynyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3,5-difluorophenylthio)ethyl]piperidine
- 20 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3,5-difluorophenylthio)propyl]piperidine
 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2,5-difluorophenylthio)ethyl]piperidine
- 25 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2,5-difluorophenylthio)ethyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro.
-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,5-
difluorophenylthio)propyl]piperidine



quinolin-4-yl)propyl]-1-[2-(3-cyanophenylthio)ethyl]-
piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
quinolin-4-yl)propyl]-1-[3-(3-cyanophenylthio)propyl]-
5 piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
quinolin-4-yl)propyl]-1-[2-(pyridin-2-yl)thioethyl]-
piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
10 quinolin-4-yl)propyl]-1-[3-(pyridin-2-yl)thiopropyl]-
piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
quinolin-4-yl)propyl]-1-[2-(3-fluoropyridin-2-yl)thio-
ethyl]piperidine

15 (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
quinolin-4-yl)propyl]-1-[3-(3-fluoropyridin-2-yl)thio-
propyl]piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
quinolin-4-yl)propyl]-1-[2-(cycloheptylthio)ethyl]-
20 piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
quinolin-4-yl)propyl]-1-[3-(cycloheptylthio)propyl]-
piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
25 quinolin-4-yl)propyl]-1-[2-(tert-butylthio)ethyl]-
piperidine

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-
quinolin-4-yl)propyl]-1-[3-(tert-butylthio)propyl]-

5

- (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-(3,5-difluorophenyl)prop-2-ynyl]piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-(2,6-difluorophenyl)prop-2-ynyl]piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-(2,3,5-trifluorophenyl)prop-2-ynyl]piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-(2,3,6-trifluorophenyl)prop-2-ynyl]piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-(2-cyano-3-fluorophenyl)-prop-2-ynyl]piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-quinolin-4-yl)propyl]-1-[3-cyano-6-fluorophenyl)prop-2-ynyl]piperidine
- (3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-fluoro-3-(6-methoxy-

- quinolin-4-yl)propyl]-1-[3-trifluoromethoxyphenyl)prop-
2-ynyl]piperidine
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(6-
fluoropyridin-2-yl)thioethyl]piperidine-3-carboxylic
5 acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(6-
fluoropyridin-2-yl)thiopropyl]piperidine-3-carboxylic
acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-
10 yl)propyl]-1-[2-(6-fluoropyridin-2-
yl)thioethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-
yl)propyl]-1-[3-(6-fluoropyridin-2-
yl)thiopropyl]piperidine-3-carboxylic acid
- 15 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-
yl)propyl]-1-[2-(6-fluoropyridin-2-
yl)thioethyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-
yl)propyl]-1-[3-(6-fluoropyridin-2-
20 yl)thiopropyl]piperidine-3-carboxylic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(6-
fluoropyridin-2-yl)thioethyl]piperidine-3-acetic acid
- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(6-
fluoropyridin-2-yl)thiopropyl]piperidine-3-acetic acid
- 25 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-
yl)propyl]-1-[2-(6-fluoropyridin-2-

- yl)thioethyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(6-fluoropyridin-2-syl)thiopropyl]piperidine-3-acetic acid
- 5 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(6-fluoropyridin-2-yl)thioethyl]piperidine-3-acetic acid
 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(6-fluoropyridin-2-yl)thiopropyl]piperidine-3-acetic acid
- 10

The following examples, given without implied limitation, illustrate the present invention.

Example 2

- (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-carboxylic acid
- 15 **dihydrochloride**

- 0.057 cm³ of 2-iodothiophene and 1.42 cm³ of triethylamine are added with stirring to a solution of 0.185 g of (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)-propyl]-1-(prop-2-ynyl)piperidine-3-carboxylic acid in
- 20 4 cm³ of anhydrous dimethylformamide, followed by 0.038 g of tetrakis(triphenylphosphine)palladium and 0.019 g of cuprous iodide. The solution is stirred for 20 hours at a temperature in the region of 20°C. 75 cm³
- 25 of ethyl acetate and 75 cm³ of water are added to the reaction mixture. After stirring the mixture, the

aqueous phase is separated by settling and then neutralized to pH 6 by addition of a 0.1N aqueous hydrochloric acid solution. The aqueous phase is extracted with 50 cm³ of ethyl acetate; the extract is washed with 2 times 75 cm³ of a saturated aqueous sodium chloride solution. The organic solution is dried over magnesium sulfate, filtered and then mixed under reduced pressure (5 kPa) at a temperature in the region of 40°C. 0.090 g of an oil with a yellow color is obtained, which oil is purified by chromatography on a column of silica gel (particle size 20-45 µm; diameter 1 cm; height 30 cm), elution being carried out, under a pressure of 50 kPa of nitrogen, with a dichloromethane/methanol (92/8 by volume) mixture and 50-cm³ fractions being collected. Fractions 12 to 15 are combined and concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. The oil obtained is taken up in 1 cm³ of a 4N solution of hydrochloric acid in dioxane. After concentrating under the same conditions as above and taking up the residue in 10 cm³ of diethyl ether, 0.030 g of (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-carboxylic acid dihydrochloride is collected, after filtration, in the form of a white solid.

¹H N.M.R. spectrum (400 MHz, d6-(CD₃)₂SO, δ in ppm):

from 1.15 to 2.10 and from 3.00 to 3.65 (mts, 14H),
 3.98 (s, 3H), from 4.25 to 4.55 (unresolved peak, 2H),
 7.16 (dd, J = 5 and 3 Hz, 1H), from 7.40 to 7.60 (mt,
 4H), 7.75 (broad d, J = 5 Hz, 1H), 7.96 (mt, 1H), 8.79
 5 (mt, 1H), from 10.50 to 10.70 (broad unresolved peak,
 1H), from 12.85 to 13.15 (broad unresolved peak, 1H).

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-(prop-2-ynyl)piperidine-3-carboxylic acid can be
 prepared in the following way:

10 0.3 g of (prop-2-ynyl) (3R,4R)-4-[3-(6-
 methoxyquinolin-4-yl)propyl]-1-(prop-2-ynyl)piperidine-
 3-carboxylate in 3 cm³ of dioxane and 1.48 cm³ of N
 sodium hydroxide are heated, with stirring, at a
 temperature in the region of 70°C for 17 hours. The
 15 reaction mixture is concentrated under reduced pressure
 (5 kPa) at a temperature in the region of 50°C. 1.48 cm³
 of normal aqueous hydrochloric acid are added to the
 solid residue obtained, followed by 10 cm³ of water. The
 solution obtained is extracted with 5 times 20 cm³ of
 20 dichloromethane. The organic extracts are combined and
 then concentrated under reduced pressure (5 kPa).
 0.189 g of (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)-
 propyl]-1-(prop-2-ynyl)piperidine-3-carboxylic acid is
 obtained in the form of a foam with a white color.
 25 Prop-2-ynyl (3R,4R)-4-[3-(6-methoxyquinolin-
 4-yl)propyl]-1-(prop-2-ynyl)piperidine-3-carboxylate

can be prepared in the following way:

0.95 g of potassium carbonate is added to a solution of 0.835 g of (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylic acid hydrochloride
5 in 15 cm³ of anhydrous dimethylformamide, followed by 0.36 cm³ of propargyl bromide. The mixture is stirred under a nitrogen atmosphere at a temperature in the region of 70°C for 18 hours. 100 cm³ of ethyl acetate and 100 cm³ of distilled water are added to the reaction
10 mixture. The organic phase is separated by settling and then washed with 5 times 40 cm³ of water and 2 times 50 cm³ of a saturated sodium chloride solution. The organic solution is dried over magnesium sulfate, filtered and then mixed under reduced pressure (5 kPa)
15 at a temperature in the region of 40°C to maximum concentration. The oil obtained is purified by chromatography on a column of silica gel (particle size 20-45 µm; diameter 2 cm; height 40 cm), elution being carried out, under a nitrogen pressure of 50 kPa, with
20 ethyl acetate and 50-cm³ fractions being collected. Fractions 17 to 21 are combined and concentrated under reduced pressure (5 kPa) at a temperature of 40°C. 0.300 g of prop-2-ynyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-(prop-2-ynyl)-3-piperidinecarboxylate is
25 obtained in the form of an oil with a yellow color.

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)-

propyl]piperidine-3-carboxylic acid hydrochloride can be prepared in the following way:

8.8 g of (3R,4R)-1-benzoyl-4-[3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylic acid are heated, with stirring, in 200 cm³ of 5N aqueous hydrochloric acid at a temperature in the region of 100°C for 48 hours. The reaction mixture is concentrated under reduced pressure (5 kPa) at a temperature in the region of 50°C. The residue is taken up in 100 cm³ of acetone. The mixture is concentrated under reduced pressure (5 kPa) at a temperature in the region of 60°C. This operation is repeated an additional two times. The residue is finally triturated in 100 cm³ of acetone until it crystallizes. After filtering off the crystals and drying in a desiccator under reduced pressure (10 kPa), 7.2 g of (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylic acid hydrochloride are obtained in the form of a beige solid melting at approximately 270°C (melting with softening).

(3R,4R)-1-Benzoyl-4-[3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylic acid can be prepared in the following way:

25 g of (3R,4R)-1-benzoyl-4-[3-(6-methoxyquinolin-4-yl)propyl]-3-vinylpiperidine are dissolved in a mixture of 250 cm³ of carbon

tetrachloride and 250 cm³ of acetonitrile. 51.3 g of sodium metaperiodate, in solution in 325 cm³ of water, are added at a temperature in the region of 20°C with good stirring, followed by 0.27 g of ruthenium

5 trichloride hydrate. The slightly exothermic reaction is maintained in the region of 30°C for 15 minutes after the addition of the reactants. The mixture is stirred for 2 hours at room temperature. The suspension obtained is filtered and the insoluble material is

10 washed with 5 times 80 cm³ of dichloromethane. After stirring the filtrate, the organic phase is separated by settling and the aqueous phase is saturated with sodium chloride and then extracted with two additional 300 cm³ portions of dichloromethane. The combined

15 organic extracts are washed with water (3 times 200 cm³), dried over magnesium sulfate, filtered through paper and then concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 23.2 g of an oil are obtained, which oil is purified by

20 chromatography, at atmospheric pressure, on silica gel (particle size 20-45 µm; diameter 6.5 cm; height 30 cm), elution being carried out with a dichloromethane/methanol (97/3 by volume) mixture and 400-cm³ fractions being collected. Fractions 4 to 8 are

25 combined and then concentrated under reduced pressure (5 kPa). 11.8 g of a brown oil are obtained. The latter

is dissolved in 60 cm³ of acetonitrile brought to reflux for a few minutes in the presence of 0.5 g of animal charcoal. After filtering, the solution obtained is cooled. The product which crystallized is filtered off
5 and washed with 2 times 10 cm³ of acetonitrile. The solid is dried in a desiccator under vacuum in the presence of potassium hydroxide (10 kPa). 8.8 g of (3R,4R)-1-benzoyl-4-[3-(6-methoxyquinolin-4-yl)propyl]-piperidine-3-carboxylic acid are obtained in the form
10 of a beige solid melting at 160°C.

(3R,4R)-1-Benzoyl-4-[3-(6-methoxyquinolin-4-yl)propyl]-3-vinylpiperidine can be prepared in the following way:

18.4 cm³ of triethylamine are added to a
15 stirred solution of 20.8 g of (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-3-vinylpiperidine in 270 cm³ of chloroform, followed, over 1 hour, by a solution of 7.2 cm³ of benzoyl chloride in 50 cm³ of chloroform. After stirring the mixture at a temperature
20 in the region of 20°C for 1 hour 30 minutes, 100 cm³ of distilled water are added to the reaction mixture. The chloroform phase is separated by settling, washed with 2 times 100 cm³ of water and then dried over magnesium sulfate. After filtering through paper, the chloroform
25 solution is concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 25 g of

(3R,4R)-1-benzoyl-4-[3-(6-methoxyquinolin-4-yl)propyl]-3-vinylpiperidine are obtained in the form of a brown oil.

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-3-vinylpiperidine can be obtained by application of the method disclosed in Patent Application FR 2,354,771.

Example 3

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(3-fluorophenylthio)-2-ethyl]piperidine-3-carboxylic acid dihydrochloride

A mixture of 0.54 g of methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-fluorophenylthio)-2-ethyl]piperidine-3-carboxylate in 4 cm³ of methanol and 0.8 cm³ of 5N aqueous sodium hydroxide is heated with stirring at 60°C for 20 hours. After mixing the solvents under reduced pressure (5 kPa) at a temperature in the region of 40°C, the residue obtained is taken up in 10 cm³ of water and then acidified with 0.4 cm³ of concentrated hydrochloric acid. The solution is mixed under the same conditions and then the residue obtained is triturated in a dichloromethane/methanol (90/10 by volume) mixture. The insoluble material is filtered off and washed with 5 cm³ of dichloromethane. The filtrate is dried over sodium sulfate and then concentrated under reduced pressure (5 kPa) at a

temperature in the region of 40°C. The residue is trituated in 10 cm³ of diisopropyl ether and then 1 cm³ of a 5N solution of hydrochloric acid in diisopropyl ether is added with stirring. The crystals are
 5 separated by filtration and then washed with 2 times 5 cm³ of diisopropyl ether. After drying in the air, 0.45 g of (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-fluorophenylthio)-2-ethyl]piperidine-3-carboxylic acid dihydrochloride is obtained in the
 10 form of an amorphous solid with a pale yellow color which melts in the region of 140°C with softening.

Infrared spectrum (KBr): 3058 and 3012 cm⁻¹ (aromatic CH v), 2935 and 2862 cm⁻¹ (CH₂ v), 3000 and 2750 cm⁻¹ (acidic OH v), 2800 and 1900 cm⁻¹ (N⁺H v
 15 (tertiary amine salt + quinoline salt)), 1719 cm⁻¹ (acidic C=O v), 1618, 1600, 1578, 1541 and 1496 cm⁻¹ (aromatic nuclei C=C v), 1274 cm⁻¹ (acidic C-O v), 1251 and 1216 cm⁻¹ (ether C-O v_{as}), 1021 cm⁻¹ (ether C-O v_s + alcohol C-O v), 847 cm⁻¹ (4,6-disubstituted quinoline CH
 20 γ), 781 and 729 cm⁻¹ (1,3-disubstituted phenyl CH γ).

Mass spectrum (EI - m/z): = 482 (M⁺), 438 (M-CO₂)⁺, 341 (M-C₇H₆SF)⁺ base peak, 297, 341 (M-CO₂)⁺, 186 (C₁₂H₁₂NO⁺), 128 (C₆H₅SF⁺), 36 (HCl⁺)

Methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)-
 25 propyl]-1-[2-(3-fluorophenylthio)-2-ethyl]piperidine-3-carboxylate can be prepared in the following way:

By carrying out the preparation by analogy with Example 4 hereinbelow but from methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylate hydrochloride and 2-bromo-1-(3-fluorophenyl)thioethane, 0.55 g of methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(3-fluorophenylthio)-2-ethyl]piperidine-3-carboxylate is obtained in the form of a viscous oil with a yellow color.

Infrared spectrum (CCl_4): 2949 cm^{-1} , aliphatic CH v, 1737 cm^{-1} , C=O v, 1227 cm^{-1} , ether C-O v, 845 cm^{-1} , quinoline CH γ .

Methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylate hydrochloride was prepared under the conditions of Example 6.

15 Example 4

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(phenylthioethyl)]piperidine-3-carboxylic acid

A suspension of 0.7 g of methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(phenylthioethyl)]piperidine-3-carboxylate in 5 cm^3 of methanol, to which methanol have been added 2.9 cm^3 of N aqueous sodium hydroxide, is stirred for 2 hours at a temperature in the region of 80°C . The solution obtained is neutralized with 0.18 cm^3 of acetic acid and then mixed under reduced pressure (5 kPa) at a temperature in the region of 40°C . The residue obtained

is purified by chromatography at atmospheric pressure on a column of silica gel (particle size 40-63 μm ; diameter 3 cm; height 20 cm), elution being carried out with a dichloromethane/ethanol (90/10 by volume) mixture and 20-cm³ fractions being collected. Fractions 21 to 52 are combined and concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 0.53 g of (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(phenylthioethyl)]piperidine-3-carboxylic acid is obtained in the form of an oil with a beige color.

¹H N.M.R. spectrum (400 MHz, d₆-(CD₃)₂SO, δ in ppm): from 1.35 to 1.95 (mt, 7H), 2.28 (broad t, J = 10.5 Hz, 1H), 2.43 (broad d, J = 10.5 Hz, 1H), 2.59 (mt, 1H), 2.64 (t, J = 7 Hz, 2H), 2.77 (unresolved peak, 1H), 2.93 (unresolved peak, 1H), 3.03 (mt, 2H), 3.13 (mt, 2H), 3.95 (s, 3H), 7.21 (tt, J = 7.5 and 2 Hz, 1H), from 7.25 to 7.45 (mt, 7H), 7.93 (d, J = 9 Hz, 1H), 8.63 (d, J = 4.5 Hz, 1H).

Methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)-propyl]-1-(2-phenylthioethyl)piperidine-3-carboxylate can be prepared in the following way:

1 g of methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylate hydrochloride and 1 g of potassium carbonate are stirred at a temperature in the region of 20°C in

100 cm³ of acetonitrile for 20 minutes. After addition of 0.61 g of 2-bromo-1-phenylthioethane, dissolved beforehand in 5 cm³ of acetonitrile, the mixture is heated at a temperature in the region of 60°C for 5 hours. After addition of 20 cm³ of dimethylformamide and an additional 0.61 g of 2-bromo-1-phenylthioethane, heating is maintained for a further 8 hours 30 minutes. After cooling, the reaction mixture is filtered; the solution obtained is concentrated under reduced pressure (5 kPa) at a temperature in the region of 70°C. The residue is taken up in 50 cm³ of ethanol and then concentrated again under the same conditions as above. The residue is diluted with 30 cm³ of water and then extracted with 3 times 20 cm³ of dichloromethane. The combined extracts are dried over magnesium sulfate and concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 1 g of an oil is obtained, which oil is purified by chromatography at atmospheric pressure on a column of silica gel (particle size 40-63 µm; diameter 3.5 cm; height 20 cm), elution being carried out with a dichloromethane/ethanol (90/10 by volume) mixture and 25-cm³ fractions being collected. Fractions 15 to 26 are combined and then concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 0.79 g of methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-

1-(2-phenylthioethyl)piperidine-3-carboxylate is obtained in the form of an oil with a yellow color.

Methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)-propyl]piperidine-3-carboxylate hydrochloride can be
5 prepared under the conditions of Example 6.

Example 6

**(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-(3-phenylprop-2-ynyl)piperidine-3-carboxylic acid**

A solution of 0.25 g of methyl (3R,4R)-
10 4-[3-(6-methoxyquinolin-4-yl)propyl]-1-(3-phenylprop-
2-ynyl)piperidine-3-carboxylate in 6 cm³ of methanol has
0.41 cm³ of 5N aqueous sodium hydroxide added to it and
is then heated at a temperature in the region of 57°C
for 18 hours 30 minutes under an inert atmosphere. The
15 mixture is cooled and then concentrated under reduced
pressure (2 kPa) at a temperature in the region of
40°C. The residue is taken up in 10 cm³ of water,
acidified with 2 cm³ of N aqueous hydrochloric acid and
concentrated under reduced pressure (2 kPa) at a
20 temperature in the region of 45°C. The residue obtained
is triturated in 10 cm³ of a dichloromethane/methanol
(90/10 by volume) mixture and then filtered. The
residue obtained is triturated in 10 cm³ of a
dichloromethane/methanol (90/10 by volume) mixture and
25 then filtered off. The insoluble material is washed
with 2 times 10 cm³ of dichloromethane. The combined

organic filtrates are concentrated under reduced pressure (2 kPa) at a temperature in the region of 30°C. A 0.22 g residue is obtained, which residue is stirred in a mixture of 20 cm³ of water and 15 cm³ of dichloromethane. The aqueous phase is separated by settling and then extracted with 3 times 10 cm³ of dichloromethane. This aqueous phase is concentrated to dryness under reduced pressure (5 kPa) at a temperature in the region of 40°C. The residue is triturated in 10 cm³ of a dichloromethane/methanol (90/10 by volume) mixture. The insoluble material is filtered off and then the cake is washed with 5 cm³ of the same mixture. The filtrate is dried over magnesium sulfate, then concentrated under reduced pressure under the same conditions as above and finally dried under partial pressure (13 Pa) at a temperature in the region of 40°C for 2 hours. 0.11 g of (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-(3-phenylprop-2-ynyl)piperidine-3-carboxylic acid is obtained in the form of a foamy solid with a pale yellow color melting at approximately 166°C with softening.

Infrared spectrum (KBr): 2931, 2859 cm⁻¹ (CH₂ v), 3000 and 2750 cm⁻¹ (acidic OH v), 2800 and 1900 cm⁻¹ (N⁺H v (tertiary amine salt + quinoline salt)), 1719 cm⁻¹ (acidic C=O v), 1618, 1601, 1542 and 1492 cm⁻¹ (aromatic nuclei C=C v), 1275 cm⁻¹ (acidic C-O v), 1225 cm⁻¹ (ether

C-O ν_{as}), 1022 cm^{-1} (ether C-O ν_s), 846 cm^{-1} (4,6-disubstituted quinoline CH γ), 761 and 693 cm^{-1} (monosubstituted phenyl CH γ).

Mass spectrum (EI - m/z): 442 (M^+), 398 ($M-\text{CO}_2$) $^+$, 327 ($M-\text{C}_9\text{H}_7$) $^+$, 283, 327 ($M-\text{CO}_2$) $^+$, 186 ($\text{C}_{12}\text{H}_{12}\text{ON}^+$), 115 (C_9H_7^+), 44 (CO_2^+), 36 (HCl^+ base peak)

Methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-(3-phenylprop-2-ynyl)piperidine-3-carboxylate

0.138 g of tetrakis(triphenylphosphine)-
 10 palladium, 0.041 g of triphenylphosphine and 0.070 g of cuprous iodide are added under an inert atmosphere, at a temperature in the region of 20°C, to a stirred solution of 0.7 g of methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-(prop-2-ynyl)piperidine-
 15 3-carboxylate in 12 cm^3 of acetonitrile. 0.56 g of iodobenzene is subsequently added, followed by 0.51 cm^3 of triethylamine. The mixture is stirred for 22 hours at a temperature in the region of 20°C and is then filtered. The cake is washed with 3 times 10 cm^3 of
 20 acetonitrile. The combined filtrates have 100 cm^3 of dichloromethane and 100 cm^3 of water added to them and are then stirred. The organic phase is separated by settling and washed with 3 times 50 cm^3 of a saturated sodium chloride solution. After drying over magnesium
 25 sulfate and then filtering, the organic solution is mixed under reduced pressure (2 kPa) at a temperature

in the region of 40°C. 1.1 g of an oil are obtained, which oil is purified by chromatography under argon pressure (50 kPa) on a column of silica gel (particle size 40-60 μm ; diameter 3 cm, 65 g), elution being
5 carried out with ethyl acetate and 2.5-cm³ fractions being collected. Fractions 52 to 210 are combined and concentrated under reduced pressure (2 kPa) at a temperature in the region of 35°C. 0.64 g of methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-
10 1-(3-phenylprop-2-ynyl)piperidine-3-carboxylate is obtained in the form of an oil with a light brown color.

Methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)-propyl]-1-(prop-2-ynyl)piperidine-3-carboxylate can be
15 prepared in the following way:

14.7 cm³ of triethylamine are added, at a temperature in the region of 20°C, to a stirred suspension of 10 g of methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylate
20 hydrochloride in 100 cm³ of anhydrous dimethylformamide and under an inert atmosphere, followed, after 45 minutes, by 3 cm³ of propargyl bromide diluted in 10 cm³ of anhydrous dimethylformamide. After stirring for 15 minutes at a temperature in the region of 20°C,
25 the mixture is heated for 4 hours at a temperature in the region of 45°C. After cooling, the reaction mixture

is poured into a mixture of 250 cm³ of ethyl acetate and 250 cm³ of distilled water. The mixture is stirred for a few minutes and then the organic phase is separated by settling. The aqueous phase is extracted with 2 times
5 250 cm³ of ethyl acetate. The organic phases are combined, washed with 3 times 200 cm³ of distilled water and dried over magnesium sulfate. After filtering and then mixing the solvent under reduced pressure (2 kPa) at a temperature in the region of 40°C, 7.8 g of an oil
10 are obtained, which oil is purified by chromatography under argon pressure (50 kPa) on a column of silica gel (particle size 40-63 μm; diameter 7 cm; 475 g), elution being carried out with ethyl acetate and 8-cm³ fractions being collected. Fractions 468 to 612 are combined and
15 then concentrated under reduced pressure (2 kPa) at a temperature in the region of 45°C. 4.7 g of methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-(prop-2-ynyl)piperidine-3-carboxylate are obtained in the form of an oil with an orange color.

20 Methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)-propyl]piperidine-3-carboxylate hydrochloride can be prepared in the following way:

2 cm³ of thionyl chloride are added dropwise to a stirred suspension, cooled to a temperature in the
25 region of -30°C with a cooling bath of acetone and solid carbon dioxide, of 4.29 g of (3R,4R)-

4-[3-(6-methoxyquinolin-4-yl)propyl]-1-(tert-butyloxy-carbonyl)piperidine-3-carboxylic acid in 50 cm³ of methanol. The solution obtained is brought to a temperature in the region of 20°C and the reaction mixture is stirred for 16 hours at this temperature. After mixing the solution under reduced pressure (5 kPa) at a temperature in the region of 40°C, the residue obtained is triturated in approximately 30 cm³ of diisopropyl ether. The crystals obtained are filtered off, washed with 2 times 10 cm³ of diisopropyl ether and then dried in the air. 4.20 g of methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylate hydrochloride are obtained in the form of a solid with a light yellow color which melts with softening at a temperature in the region of 140°C.

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-(tert-butyloxycarbonyl)piperidine-3-carboxylic acid can be prepared in the following way:

3 g of (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)-propyl]-3-vinylpiperidine are dissolved in 3 cm³ of acetone. 14.5 cm³ of 3M sulfuric acid, cooled beforehand to a temperature in the region of 5°C, are added with stirring to this solution, which has been cooled to the same temperature with a bath of ice and acetone. A solution of 4.64 g of sodium permanganate monohydrate in 25 cm³ of water is added over 30 minutes to the

solution obtained while maintaining a temperature of between 0 and 7°C. The reaction mixture is stirred for 4 hours at a temperature of between 10 and 17°C. The reaction mass is filtered; the insoluble material is washed with 2 times 10 cm³ of water. On the one hand, a solution with an orange color and, on the other hand, an inorganic mass with a black color are obtained. The orange solution is brought to pH 10 by addition of 4.6 g of sodium carbonate. The mixture is filtered: a solution (1) and an insoluble inorganic material (2) are obtained. The inorganic mass with a black color is stirred for 30 minutes in 20 cm³ of water, after which the pH was brought to 12 by addition of 2 cm³ of potassium hydroxide solution. After filtering the mixture, a solution (3) and an insoluble inorganic material (4) are obtained. The insoluble materials (2) and (4) are stirred for 15 minutes in 15 cm³ of water to which have been added 3 cm³ of potassium hydroxide solution. The suspension is filtered. A solution (5) is obtained. The aqueous solutions (1), (3) and (5) are combined, 2.31 g of di-tert-butyl dicarbonate are added and stirring is carried out for 15 hours at a temperature in the region of 20°C. The mixture is extracted with 6 times 10 cm³ of ethyl acetate. The organic phases are combined and washed with 20 cm³ of water and then with 20 cm³ of a saturated aqueous sodium

chloride solution. After drying with sodium sulfate, filtering and then concentrating under reduced pressure (5 kPa) at a temperature in the region of 35°C, 2.86 g of (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-

5 1-(tert-butyloxycarbonyl)piperidine-3-carboxylic acid are obtained in the form of a solid with a beige color which becomes pasty at 154°C.

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-3-vinylpiperidine can be obtained by application of the
10 method disclosed in Patent Application FR 2,354,771.

Example 7

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(2-fluorophenyl)prop-2-ynyl]piperidine-3-carboxylic acid

0.44 cm³ of 5N aqueous sodium hydroxide is
15 added to a solution of 0.28 g of methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-fluorophenyl)prop-2-ynyl]piperidine-3-carboxylate in 10 cm³ of methanol and then the mixture is heated at a temperature in the region of 57°C for 20 hours. After
20 cooling, the solution is mixed under reduced pressure (2 kPa) at a temperature in the region of 40°C. A 0.41 g residue is obtained, which residue is taken up in 20 cm³ of water to which have been added 3.5 cm³ of 1N hydrochloric acid. After extracting the aqueous
25 phase with 5 times 15 cm³ of dichloromethane, the aqueous phase is concentrated to dryness under reduced

pressure (5 kPa) at a temperature in the region of 40°C. The residue obtained is triturated in 10 cm³ of a dichloromethane/methanol (90/10 by volume) mixture. The insoluble material is filtered off and then the cake is washed with 10 cm³ of the same mixture. The filtrate is dried over magnesium sulfate, then concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C and finally dried under vacuum (13 Pa) at a temperature in the region of 40°C for 2 hours. 0.15 g of (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2-fluorophenyl)prop-2-ynyl]piperidine-3-carboxylic acid is obtained in the form of a foamy solid with a pale yellow color which melts at approximately 154°C with softening.

Infrared spectrum (KBr): 3057 cm⁻¹ (aromatic CH v), 2933, 2864 cm⁻¹ (CH₂ v), 3000, 2750 cm⁻¹ (acidic OH v), 2800 and 1900 cm⁻¹ (N⁺H v (tertiary amine salt + quinoline salt)), 1722 cm⁻¹ (acidic C=O v), 1618, 1601, 1542 and 1493 cm⁻¹ (aromatic nuclei C=C v), 1275 cm⁻¹ (acidic C-O v), 1217 cm⁻¹ (ether C-O v_{as}), 1022 cm⁻¹ (ether C-O v_s), 847 cm⁻¹ (4,6-disubstituted quinoline CH γ), 765 cm⁻¹ (ortho-disubstituted phenyl CH γ).

Mass spectrum: (DCI) m/z=461 MH⁺

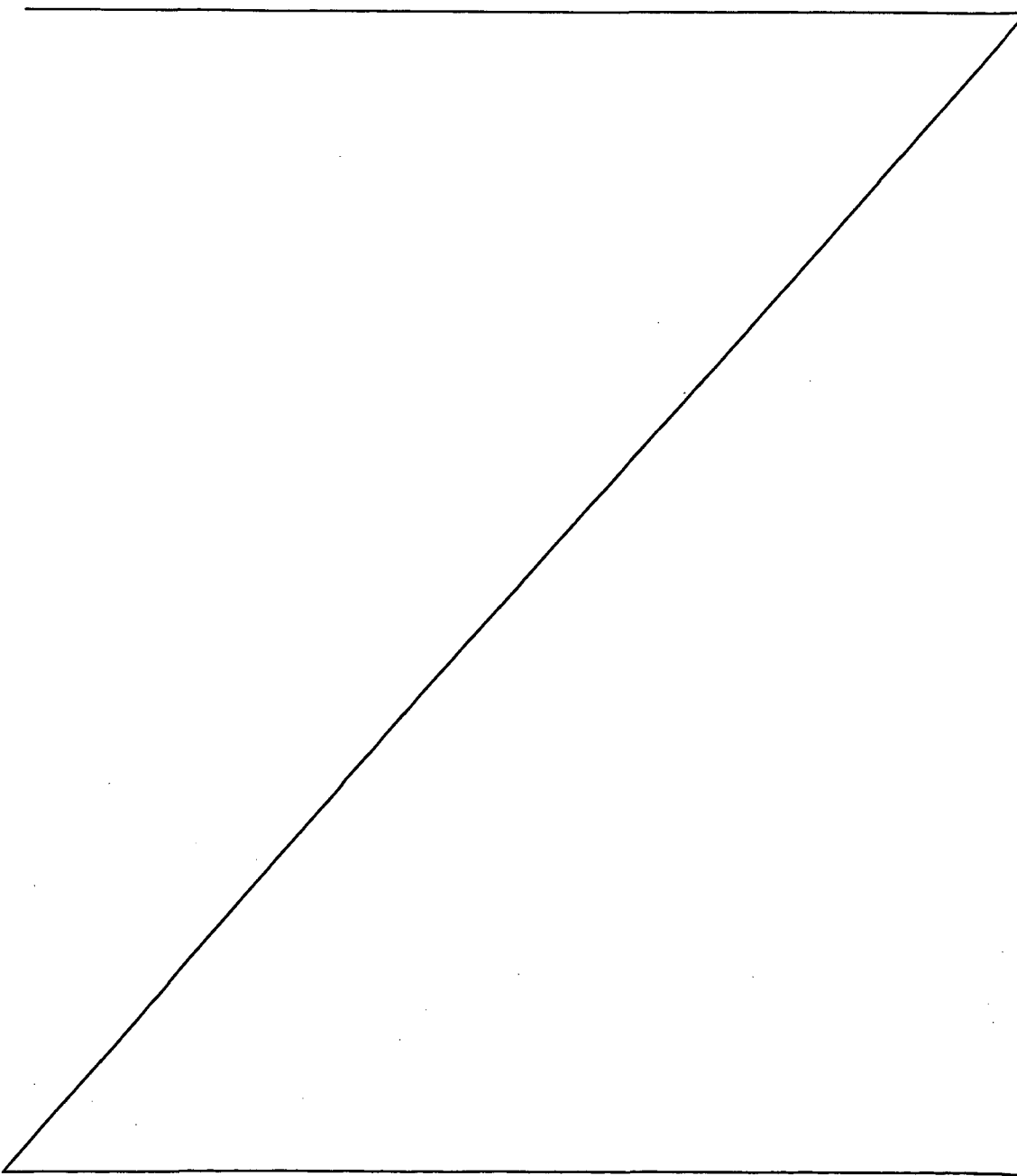
Methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-

1-[3-(2-fluorophenyl)prop-2-ynyl]piperidine-3-carboxylate

0.041 g of tetrakis(triphenylphosphine)-palladium and 0.070 g of cuprous iodide are added, at a temperature in the region of 20°C and under an inert atmosphere, to a stirred solution of 0.7 g of methyl
5 (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-(prop-2-ynyl)piperidine-3-carboxylate in 14 cm³ of acetonitrile. 0.32 cm³ of 1-fluoro-2-iodobenzene and 0.51 cm³ of triethylamine are subsequently added. The mixture is stirred at a temperature in the region of
10 20°C for 20 hours. The reaction mixture is filtered and the cake is washed with 3 times 10 cm³ of acetonitrile. The combined filtrates are taken up with stirring in a mixture of 100 cm³ of dichloromethane and 100 cm³ of water. The organic phase is separated by settling,
15 washed with 3 times 50 cm³ of a saturated sodium chloride solution, dried over magnesium sulfate and then, after filtration, concentration under reduced pressure (2 kPa) at a temperature in the region of 35°C. The residue obtained is purified by
20 chromatography under argon pressure (50 kPa) on a column of silica gel (particle size 40-63 µm; diameter 4 cm; height 14 cm), elution being carried out with ethyl acetate and 2-cm³ fractions being collected. Fractions 33 to 160 are combined and then mixed under
25 reduced pressure (2 kPa) at a temperature in the region of 40°C. 0.56 g of methyl (3R,4R)-4-[3-(6-methoxy-

quinolin-4-yl)propyl]-1-[3-(2-fluorophenyl)prop-2-ynyl]piperidine-3-carboxylate is obtained in the form of an oil with a light brown color.

Methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-(prop-2-ynyl)piperidine-3-carboxylate
5 was prepared under the conditions of Example 6.



AMENDED SHEET

Example 8

**(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[3-(3-fluorophenyl)prop-2-ynyl]piperidine-
3-carboxylic acid dihydrochloride**

- 5 10.5 cm³ of a 6N aqueous hydrochloric acid
solution are added to a solution of 0.66 g of methyl
(3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-
1-[3-(3-fluorophenyl)prop-2-ynyl]piperidine-
3-carboxylate and then the mixture is heated at a
10 temperature in the region of 100°C for 3 hours, after
which are added an additional 3.5 cm³ of 6N aqueous
hydrochloric acid solution. After 4 hours, the reaction
mixture is cooled to a temperature in the region of
40°C and then concentrated under reduced pressure
15 (2 kPa) at a temperature in the region of 60°C. The
residue obtained is taken up in 10 cm³ of water and
8 cm³ of dichloromethane and then separated by settling.
The aqueous phase is extracted twice with 6 cm³ of
dichloromethane. The aqueous solution is concentrated
20 to dryness under reduced pressure (1 kPa) at a
temperature in the region of 50°C. The residue obtained
is dissolved in 5 cm³ of a dichloromethane/methanol
(90/10 by volume) mixture and dried over sodium sulfate
and then, after filtration, the solvent is mixed under
25 reduced pressure (1 kPa) at a temperature in the region
of 40°C. The residue is taken up in a mixture of

2-propanol and isopropyl ether, dissolved under hot conditions and then filtered through paper. The filtrate is cooled to a temperature in the region of 25°C and then mixed under reduced pressure (1 kPa) at a temperature in the region of 45°C. The residue is taken up in 10 cm³ of a dichloromethane/methanol (90/10 by volume) mixture and reconcentrated under the same conditions. 0.44 g of (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-fluorophenyl)prop-2-ynyl]-piperidine-3-carboxylic acid dihydrochloride is obtained in the form of a foam with a yellow color which melts at approximately 222°C with softening. ¹H N.M.R. spectrum (400 MHz, d₆-(CD₃)₂SO, δ in ppm): from 1.20 to 2.15 (unresolved peak, 6H), 2.35 (unresolved peak, 1H), from 3.00 to 3.90 (mt, 7H), 4.02 (s, 3H), 4.40 (broad s, 2H), from 7.25 to 7.55 (mt, 4H), 7.60 (broad s, 1H), 7.75 (dd, J = 9 and 2 Hz, 1H), 7.82 (d, J = 5 Hz, 1H), 8.27 (d, J = 9 Hz, 1H), 8.97 (d, J = 5 Hz, 1), from 11.15 to 11.45 (broad unresolved peak, 1H).

Methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-fluorophenyl)prop-2-ynyl]piperidine-3-carboxylate

0.07 g of triphenylphosphine, 0.237 g of tetrakis(triphenylphosphine)palladium and 0.12 g of cuprous iodide are added, under an inert atmosphere and

at a temperature in the region of 20°C, to a stirred solution of 1.2 g of methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[prop-2-ynyl]piperidine-3-carboxylate in 25 cm³ of acetonitrile. 0.56 cm³ of 1-fluoro-3-iodobenzene and 0.88 cm³ of triethylamine are subsequently added. After stirring for 20 hours at a temperature in the region of 20°C, the reaction mixture is filtered through Celite and the cake is washed with acetonitrile. The filtrate is mixed under reduced pressure (2 kPa) at a temperature in the region of 35°C. The residue obtained is taken up in a mixture of 80 cm³ of dichloromethane and 80 cm³ of water. After separating by settling, the organic phase is washed with 3 times 50 cm³ of a saturated sodium chloride solution. The organic solution is dried over magnesium sulfate, filtered and then concentrated under reduced pressure (2 kPa) at a temperature in the region of 40°C. 1.91 g of an oil are obtained, which oil is purified by chromatography under argon pressure (50 kPa) on a column of silica gel (particle size 40-63 µm; diameter 3 cm; 77 g), elution being carried out with ethyl acetate and 5-cm³ fractions being collected. The fractions comprising the expected product are combined and then mixed under reduced pressure (2 kPa) at a temperature in the region of 40°C. 1.08 g of methyl (3R,4R)-4-[3-(6-methoxyquinolin-

4-yl)propyl]-1-[3-(3-fluorophenyl)prop-2-ynyl]-piperidine-3-carboxylate are obtained in the form of an oil with a yellow color.

Methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)-propyl]-1-[prop-2-ynyl]piperidine-3-carboxylate was prepared under the conditions of Example 6.

Example 10

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(1,3-thiazol-2-ylthioethyl)]piperidine-3-carboxylic acid trihydrochloride

A mixture of 0.3 g of methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(1,3-thiazol-2-ylthioethyl)]piperidine-3-carboxylate and 0.44 cm³ of 5N aqueous sodium hydroxide in 2.5 cm³ of methanol is heated at a temperature in the region of 60°C with stirring for 20 hours. After cooling, the reaction mixture is mixed under reduced pressure (5 kPa) at a temperature in the region of 40°C; the residue is taken up in 5 cm³ of water and then acidified by addition of 1 cm³ of 35% hydrochloric acid. The mixture is mixed under the same conditions as above and then the residue obtained is triturated in 10 cm³ of a dichloromethane/methanol (90/10 by volume) mixture. After filtering off the insoluble material, the filtrate is mixed under reduced pressure (5 kPa) at a temperature in the region of 40°C. 0.34 g of (3R,4R)-

4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(1,3-thiazol-2-ylthioethyl)]piperidine-3-carboxylic acid

trihydrochloride is obtained in the form of a foam with a pale yellow color.

- 5 Infrared spectrum (KBr): 3097 cm^{-1} (thiazole CH v), 3058 and 3012 cm^{-1} (aromatic CH v), 2929 and 28615 cm^{-1} (CH_2 v), 3000 and 2750 cm^{-1} (acidic OH v), 2800 and 1900 cm^{-1} (N^+H v (tertiary amine salt + quinoline salt)), 1715 cm^{-1} (acidic C=O v), 1617, 1600, 1543 and 1496 cm^{-1} (aromatic nuclei C=C v), 1274 cm^{-1} (acidic C-O v), 1250 and 1219 cm^{-1} (ether C-O v_{as}), 1020 cm^{-1} (ether C-O v_{s} + alcohol C O v), 846 cm^{-1} (4,6-disubstituted quinoline CH γ), 740 cm^{-1} (thiazole CH γ).
- 10

- Mass spectrum (EI - m/z): 471 (M^+), 355 ($\text{M}-\text{C}_3\text{H}_2\text{NS}_2$)⁺, 341 ($\text{M}-\text{C}_4\text{H}_4\text{S}_2$)⁺ base peak, 297, 341 ($\text{M}-\text{CO}_2$)⁺, 186 ($\text{C}_{12}\text{H}_{12}\text{NO}^+$), 117 ($\text{C}_3\text{H}_3\text{NS}_2^+$), 44 (CO_2^+).
- 15

Methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(1,3-thiazol-2-ylthioethyl)]piperidine-3-carboxylate

- 20 By carrying out the reaction by analogy with Example 4 but from methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylate and 2-bromo-1-[(1,3-thiazol-2-yl)thio]ethane, 0.31 g of methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-
- 25 1-[2-(1,3-thiazol-2-ylthioethyl)]piperidine-3-carboxylate is obtained in the form of a lacquer with

an orange color.

¹H N.M.R. spectrum (300 MHz, d₆-(CD₃)₂SO, δ in ppm):
 from 1.30 to 1.85 (mt, 7H), from 2.20 to 2.35 (mt, 1H),
 2.35 (dd, J = 11 and 3 Hz, 1H), from 2.50 to 2.85 (mt,
 5 5H), 3.03 (t, J = 7 Hz, 2H), from 3.25 to 3.40 (mt,
 2H), 3.53 (s, 3H), 3.94 (s, 3H), 7.31 (d, J = 5 Hz,
 1H), 7.35 (d, J = 2.5 Hz, 1H), 7.40 (dd, J = 9 and
 2.5 Hz, 1H), 7.63 (d, J = 3.5 Hz, 1H), 7.72 (d,
 J = 3.5 Hz, 1H), 7.93 (d, J = 9 Hz, 1H), 8.63 (d,
 10 J = 5 Hz, 1H).

Example 11

**(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
 1-[2-(2-fluorophenylthioethyl)]piperidine-3-carboxylic
 acid hydrochloride**

15 A mixture of 0.12 g [lacuna] methyl (3R,4R)-
 4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-fluoro-
 phenylthio)ethyl]piperidine-3-carboxylate and 0.6 cm³ of
 N aqueous sodium hydroxide in 1.8 cm³ of methanol is
 stirred for 20 hours at a temperature in the region of
 20 60°C. The reaction mixture is mixed under reduced
 pressure (5 kPa) at a temperature in the region of
 40°C. The residue obtained is taken up in 5 cm³ of water
 and acidified with 1 cm³ of 2N aqueous hydrochloric
 acid. The mixture is again mixed under the same
 25 conditions as above and then the new residue is
 triturated in 5 cm³ of a dichloromethane/methanol (90/10

by volume) mixture. After filtering and mixing the filtrate under reduced pressure (5 kPa) at a temperature in the region of 40°C, the residue obtained is triturated in 3 cm³ of diisopropyl ether. The insoluble material is filtered off, washed with 2 times 1 cm³ of diisopropyl ether and dried in the air. 0.14 g of (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-fluorophenylthio)ethyl]piperidine-3-carboxylic acid hydrochloride is obtained in the form of a solid with a beige color which melts with softening at approximately 148°C.

Infrared spectrum (KBr): 3058 and 3013 cm⁻¹ (aromatic CH v), 2934 and 2862 cm⁻¹ (CH₂ v), 3000 and 2750 cm⁻¹ (acidic OH v), 2800 and 1900 cm⁻¹ (N⁺H v (tertiary amine salt + quinoline salt)), 1719 cm⁻¹ (acidic C=O v), 1618, 1600, 1541 and 1497 cm⁻¹ (aromatic nuclei C=C v), 1276 cm⁻¹ (acidic C-O v), 1251 and 1219 cm⁻¹ (ether C-O v_{as}), 1022 cm⁻¹ (ether C-O v_s + alcohol C-O v), 847 cm⁻¹ (4,6-disubstituted quinoline CH γ), 760 cm⁻¹ (1,2-disubstituted phenyl CH γ).

Mass spectrum (EI - m/z): 438 (M-CO₂)⁺, 355 (M-C₆H₄SF)⁺, 341 (M-C₇H₆SF)⁺ base peak, 297, 341 (M-CO₂)⁺, 186 (C₁₂H₁₂NO⁺), 128 (C₆H₅SF⁺), 36 (HCl⁺).

Mass spectrum (DCI): m/z = 483 (M+H)⁺

Methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-fluorophenylthio)ethyl]piperidine-3-carboxylate

By carrying out the reaction by analogy with Example 4 but from methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylate and 2-bromo-1-(2-fluorophenylthio)ethane, 0.17 g of methyl
5 (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-fluorophenylthio)ethyl]piperidine-3-carboxylate is obtained in the form of a lacquer with an orange color.

Infrared spectrum (CH_2Cl_2): 2942 cm^{-1} , aliphatic CH v,
10 1727 cm^{-1} , C=O v, 1227 cm^{-1} , ether C-O v, 848 cm^{-1} , quinoline CH γ .

Example 12

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(thien-2-ylthio)ethyl]piperidine-3-carboxylic acid
15 **dihydrochloride**

0.5 cm^3 of 5N aqueous sodium hydroxide is added to a stirred solution of 0.34 g of methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(thien-2-ylthio)ethyl]piperidine-3-carboxylate in 3 cm^3
20 of methanol and then the mixture is heated at a temperature in the region of 60°C for 20 hours. After mixing the solvents under reduced pressure (5 kPa) at a temperature in the region of 40°C , the residue obtained is taken up in 5 cm^3 of water and then acidified by
25 addition of 1 cm^3 of 35% hydrochloric acid. The mixture is again mixed under reduced pressure under the same

conditions as above; the residue obtained is taken up in 5 cm³ of a dichloromethane/methanol (90/10 by volume) mixture. The insoluble material is filtered off and then the solvent is mixed under reduced pressure
 5 (5 kPa) at a temperature in the region of 40°C. 0.35 g of (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(thien-2-ylthio)ethyl]piperidine-3-carboxylic acid dihydrochloride is obtained in the form of a solid with a beige color which melts with softening in the region
 10 of 150°C.

Infrared spectrum (KBr): 3102 cm⁻¹ (thiophene CH v), 3058 and 3012 cm⁻¹ (aromatic CH v), 2932 and 2865 cm⁻¹ (CH₂ v), 3000 and 2750 cm⁻¹ (acidic OH v), 2800 and 1900 cm⁻¹ (N⁺H v (tertiary amine salt + quinoline
 15 salt)), 1717 cm⁻¹ (acidic C=O v), 1618, 1600, 1541 and 1496 cm⁻¹ (aromatic nuclei C=C v), 1276 cm⁻¹ (acidic C-O v), 1250 and 1218 cm⁻¹ (ether C-O v_{as}), 1020 cm⁻¹ (ether C-O v_s + alcohol C-O v), 846 cm⁻¹ (4,6-di-substituted quinoline CH γ), 725 cm⁻¹ (thiophene CH γ).
 20 Mass spectrum (EI - m/z): 355 (M-C₄H₃S₂)⁺, 341 (M-C₅H₅S₂)⁺ base peak, 297, 341- M-CO₂)⁺/, 186 (C₁₂H₁₂NO⁺), 115 (C₄H₃S₂)⁺

Mass spectrum (DCI): m/z = 471 (M+H)⁺

Methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-
 25 **1-[2-(thien-2-ylthio)ethyl]piperidine-3-carboxylate**

By carrying out the reaction by analogy with

Example 4 but from methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylate and 2-bromo-1-(thien-2-ylthio)ethane, 0.34 g of methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-

5 1-[2-(thien-2-ylthio)ethyl]piperidine-3-carboxylate is obtained in the form of a lacquer with a green color.

¹H N.M.R. spectrum (300 MHz, d6-(CD₃)₂SO, δ in ppm):

from 1.30 to 1.90 (mt, 7H), from 2.15 to 2.30 (mt, 1H),
from 2.35 to 2.60 (mt, 4H), from 2.65 to 2.80 (mt, 2H),
10 3.02 (t, J = 7 Hz, 2H), 3.03 (broad t, J = 7.5 Hz, 2H),
3.54 (s, 3H), 3.95 (s, 3H), 7.06 (dd, J = 5.5 and
3.5 Hz, 1H), 7.19 (dd, J = 3.5 and 1.5 Hz, 1H), 7.32
(d, J = 4.5 Hz, 1H), 7.36 (d, J = 3 Hz, 1H), 7.42 (dd,
J = 9 and 3 Hz, 1H), 7.62 (dd, J = 5.5 and 1.5 Hz, 1H),
15 7.95 (d, J = 9 Hz, 1H), 8.64 (d, J = 4.5 Hz, 1H).

Example 14

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-
1-[2-(pyridin-2-ylthio)ethyl]piperidine-3-carboxylic
acid trihydrochloride

20 A solution of 0.5 g of methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(pyridin-2-ylthio)ethyl]piperidine-3-carboxylate in 7.8 cm³ of 6N hydrochloric acid is heated with stirring at a temperature in the region of 100°C for 2 hours. After
25 concentrating the reaction mixture to dryness under reduced pressure (5 kPa) at a temperature in the region

of 80°C, the residue obtained is triturated in 10 cm³ of diisopropyl ether. The insoluble material is filtered off and then dried under reduced pressure (13 kPa) at a temperature in the region of 60°C. 0.55 g of (3R,4R)-
 5 4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(pyridin-2-ylthio)ethyl]piperidine-3-carboxylic acid trihydrochloride is obtained in the form of a solid with a cream color which melts with softening in the region of 165°C.

10 ¹H N.M.R. spectrum (400 MHz, d₆-(CD₃)₂SO, δ in ppm):
 from 1.20 to 2.40 and from 3.00 to 3.60 (mts, 16H),
 3.62 (broad t, J = 7.5 Hz, 2H), 4.05 (s, 3H), 7.21 (dd,
 J = 8 and 5 Hz, 1H), 7.43 (d, J = 8 Hz, 1H), 7.67
 (broad s, 1H), 7.73 (double t, J = 8 and 1.5 Hz, 1H),
 15 7.84 (dd, J = 9 and 2.5 Hz, 1H), 7.95 (d, J = 5 Hz,
 1Hz), 8.45 (d, J = 9 Hz, 1H), 8.49 (broad d, J = 5 Hz,
 1H), 9.05 (d, J = 5 Hz, 1H), 11.25 (unresolved peak,
 1H).

Methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-
 20 **1-[2-(pyridin-2-ylthio)ethyl]piperidine-3-carboxylate**

By carrying out the reaction by analogy with Example 4 but from methyl (3R,4R)-4-[3-(6-methoxy-quinolin-4-yl)propyl]piperidine-3-carboxylate and 2-bromo-1-(pyridin-2-ylthio)ethane, 0.52 g of methyl
 25 (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-
 1-[2-(pyridin-2-ylthio)ethyl]piperidine-3-carboxylate

is obtained in the form of an oil with a yellow color. Infrared spectrum (CH_2Cl_2): 2949 cm^{-1} , aliphatic CH ν , 1737 cm^{-1} , C=O ν , 1227 cm^{-1} , ether C-O ν , 845 cm^{-1} , quinoline CH γ .

5 **Example 15**

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(cyclohexylthio)-2-ethyl]piperidine-3-carboxylic acid dihydrochloride

A solution of 0.55 g of methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclohexylthio)ethyl]piperidine-3-carboxylate in 8.5 cm^3 of 6N hydrochloric acid is heated with stirring at a temperature in the region of 100°C for 2 hours. The reaction mixture is cooled and then concentrated to dryness under reduced pressure (5 kPa) at a temperature in the region of 80°C . The residue obtained is triturated in 15 cm^3 of diisopropyl ether. The insoluble material is filtered off and then the cake is washed with 10 cm^3 of diisopropyl ether. The solid obtained is dried under reduced pressure (13 Pa) at a temperature in the region of 60°C for 2 hours. 0.51 g [lacuna] (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclohexylthio)-2-ethyl]piperidine-3-carboxylic acid dihydrochloride is obtained in the form of a solid with a beige color which melts with softening at approximately 150°C .

¹H N.M.R. spectrum (400 MHz, d6-(CD₃)₂SO, with addition of a few drops of d4-CD₃COOD, at a temperature of 373 K, δ in ppm): from 1.20 to 2.35 and from 2.75 to 3.50 (mts, 29H), 4.03 (s, 3H), 7.57 (mt, 1H), from 7.60 to 7.75 (mt, 2H), 8.24 (d, J = 9 Hz, 1H), 8.85 (d, J = 5 Hz, 1H).

Methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclohexylthio)-2-ethyl]piperidine-3-carboxylate

By carrying out the reaction by analogy with Example 4 but from methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylate and 2-bromo-1-(cyclohexylthio)ethane, 0.57 g of methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclohexylthio)-2-ethyl]piperidine-3-carboxylate is obtained in the form of an oil with an orange color. Infrared spectrum (CH₂Cl₂): 2934 cm⁻¹, aliphatic CH v, 1732 cm⁻¹, C=O v, 1227 cm⁻¹, ether C-O v, 848 cm⁻¹, quinoline CH γ.

Example 16

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[4-(2-thienyl)butan-4-one]piperidine-3-carboxylic acid ditrifluoroacetate

1.76 cm³ of 4-chloro-2'-butyrothienone are added at a temperature in the region of 20°C, with stirring and under an inert atmosphere, to a solution of 1.55 g of (3R,4R)-4-[3-(6-methoxy-4-quinolin-4-yl)-

propylpiperidine-3-carboxylic acid ditrifluoroacetate in 40 cm³ of anhydrous acetone, followed by 3.86 g of potassium carbonate. The mixture is heated at a temperature in the region of 57°C for 20 hours. After
5 cooling the reaction mixture and then filtering off the insoluble material, the cake is washed with 10 cm³ of acetone and then the filtrate is mixed under reduced pressure (5 kPa) at a temperature in the region of 40°C. The residue obtained is purified by
10 chromatography at atmospheric pressure on a column of silica gel (particle size 20-45 µm; diameter 4 cm; height 35 cm), elution being carried out with a dichloromethane/methanol (90/10 by volume) mixture and 100-cm³ fractions being collected. Fractions 43 to 122
15 are combined and then mixed under reduced pressure (5 kPa) at a temperature in the region of 40°C. 1.09 g of an oil are obtained, which oil is subjected to a fresh purification by chromatography at atmospheric pressure on a column of silica gel (particle size
20 20-45 µm; diameter 4 cm; height 35 cm), elution being carried out with a dichloromethane/methanol (90/10 by volume) mixture and 100-cm³ fractions being collected. Fractions 125 to 216 are combined and then mixed under reduced pressure (5 kPa) at a temperature in the region
25 of 40°C. 0.48 g of an oil is obtained, which oil is purified in the form of the ditrifluoroacetate,

prepared from 0.1 cm³ of trifluoroacetic acid in a mixture of 10 cm³ of dichloromethane and 5 cm³ of methanol. After mixing the reaction mixture (under a partial pressure of 5 kPa and at a temperature in the region of 40°C), then taking up the residue obtained in 10 cm³ of diethyl ether and filtering off the solid, 0.35 g of (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[4-(2-thienyl)butan-4-one]piperidine-3-carboxylic acid ditrifluoroacetate is obtained, with a purity of 90%, in the form of a solid with a beige color.

¹H N.M.R. spectrum (400 MHz, d6-(CD₃)₂SO, with addition of a few drops of d4-CD₃COOD, at a temperature of 383K, δ in ppm): from 1.50 to 2.25 and from 2.95 to 3.55 (mts, 20H), 3.96 (s, 3H), 7.23 (mt, 1H), 7.36 (d, J = 5 Hz, 1H), from 7.40 to 7.50 (mt, 2H), 7.88 (d, J = 4 Hz, 1H), 7.92 (d, J = 5 Hz, 1H), 7.99 (d, J = 9 Hz, 1H), 8.66 (d, J = 5 Hz, 1H).

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]piperidine-3-carboxylic acid ditrifluoroacetate

1.75 cm³ of pure trifluoroacetic acid are added, at a temperature in the region of 20°C, to a stirred suspension of 1.5 g of (3R,4R)-1-(tert-butyloxycarbonyl)-4-[3-(6-methoxy-4-quinolin-4-yl)-propyl]piperidine-3-carboxylic acid in 15 cm³ of dichloromethane. The solution obtained is stirred for 20 hours at the same temperature and then mixed under

reduced pressure (5 kPa) at a temperature in the region of 40°C. 2.46 g of (2R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylic acid ditrifluoroacetate are obtained in the form of an oil with a brown color.

(3R,4R)-1-(t-Butyloxycarbonyl)-4-[3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylic acid was prepared as in Example 6.

Example 19

10 (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(thien-3-yl)prop-2-ynyl]piperidine-3-carboxylic acid

3.9 cm³ of 1N aqueous sodium hydroxide are added to a solution of 0.6 g of methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-3-yl)prop-2-ynyl]piperidine-3-carboxylate in 10 cm³ of dioxane and then the mixture is heated at a temperature in the region of 65°C for 16 hours. The mixture is cooled and then the organic phase is extracted with 3 times 50 cm³ of ethyl acetate. The aqueous phase is acidified with 3.9 cm³ of 1N hydrochloric acid. The solution is taken up in 10 cm³ of a saturated aqueous sodium bicarbonate solution and then the organic phase is extracted with 2 times 20 cm³ of ethyl acetate and 2 times 20 cm³ of dichloromethane, dried over sodium sulfate, filtered and concentrated to dryness under reduced pressure

(2 kPa) at a temperature in the region of 45°C. 0.32 g of (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-3-yl)prop-2-ynyl]piperidine-3-carboxylic acid is obtained in the form of a foam with a white color.

- 5 ¹H N.M.R. spectrum (300 MHz, d6-(CD₃)₂SO, δ in ppm):
 from 1.20 to 1.90 (mt, 7H), 2.43 (mt, 1H), from 2.50 to 3.00 (mt, 4H), 3.04 (broad t, J = 7.5 Hz, 2H), 3.55 (s, 2H), 3.93 (s, 3H), 7.15 (dd, J = 5 and 1.5 Hz, 1H), 7.32 (d, J = 5 Hz, 1H), from 7.35 to 7.50 (mt, 2H),
 10 7.62 (dd, J = 5 and 3 Hz, 1H), 7.75 (dd, J = 3 and 1.5 Hz, 1H), 7.92 (d, J = 9 Hz, 1H), 8.62 (d, J = 5 Hz, 1H), from 12.00 and 13.00 (very broad unresolved peak, 1H).

- Methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-**
 15 **1-[3-(thien-3-yl)prop-2-ynyl]piperidine-3-carboxylate**

- The reaction is carried out as in Example 2, from 1 g of methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[3-yl-prop-2-ynyl]piperidine-3-carboxylate, 0.9 g of 3-iodothiophene, 0.2 g of
 20 tetrakis(triphenylphosphine)palladium, 0.1 g of cuprous iodide, 0.060 g of triphenylphosphine and 0.75 cm³ of triethylamine. The residue obtained is purified by chromatography at atmospheric pressure on a column of silica gel (particle size 40-63 μm; diameter 3.5 cm;
 25 height of the column 35 cm), elution being carried out with ethyl acetate and 40-cm³ fractions being collected.

Fractions 18 to 49 are combined and then mixed under reduced pressure (5 kPa) at a temperature in the region of 40°C. 0.6 g of methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-3-yl)prop-2-ynyl]piperidine-3-carboxylate is obtained in the form of a brown oil.

3-Iodothiophene can be prepared according to N.A. Petasis et al., Synlett., 1999, 141.

Example 21

10 (3R,4R)-1-[2-(3-Fluorophenylthio)ethyl]-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylic acid dihydrochloride

0.8 g of methyl (3R,4R)-1-[2-(3-fluorophenylthio)ethyl]-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylate in 10 cm³ of methanol and 1.25 cm³ of 5N sodium hydroxide are heated, with stirring, at a temperature in the region of 60°C for 4 hours. The reaction mixture is mixed under reduced pressure (5 kPa) at a temperature in the region of 50°C. 15 cm³ of water are added to the residue obtained and then 2 cm³ of 5N aqueous hydrochloric acid are added. The reaction mixture is again mixed to dryness. The residue obtained is triturated with a dichloromethane/methanol (90/10 by volume) mixture. The sodium chloride is filtered off and then the filtrate is concentrated under reduced pressure (5 kPa) at a

temperature in the region of 30°C. The foam obtained is triturated with ethyl ether. The solid formed is filtered off. 0.75 g of beige solid is obtained. This solid is dissolved in a mixture of 50 cm³ of chloroform and 50 cm³ of acetonitrile. The insoluble material is filtered off and then the filtrate is acidified with 20 cm³ of a 1N solution of hydrochloric acid in ether. The reaction mixture is mixed under reduced pressure (5 kPa) at a temperature in the region of 30°C. The residue obtained is triturated with ethyl ether. The solid formed is filtered off and then dried under vacuum. 0.7 g of (3R,4R)-1-[2-(3-fluorophenylthio)ethyl]-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylic acid dihydrochloride is obtained in the form of a solid with a beige color.

¹H N.M.R. spectrum (400 MHz, d₆-(CD₃)₂SO, δ in ppm): from 1.25 to 1.90 (mt, 8H), 2.22 (mt, 2H), from 2.65 to 2.90 (mt, 2H), from 3.35 to 3.60 (mt, 4H), 3.91 and 3.93 (2s, 3H), 4.29 (unresolved peak, 1H), 5.28 (mt, 1H), 5.50 and 5.52 (2d, J = 4.5 Hz, 1H), 7.07 (mt, 1H), 7.28 (dd, J = 4 and 1 Hz, 1H), from 7.35 to 7.45 (mt, 2H), from 7.50 to 7.60 (mt, 2H), 7.95 (d, J = 9 Hz, 1H), 8.71 (d, J = 5 Hz, 1H).

Methyl (3R,4R)-1-[2-(3-fluorophenylthio)ethyl]-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylate

0.16 g of sodium borohydride is added with stirring, at a temperature of less than 25°C, to a solution of 1.8 g of methyl (3R,4R)-1-[2-(3-fluorophenylthio)ethyl]-4-[3-(6-methoxyquinolin-4-yl)propan-3-one]piperidine-3-carboxylate in 20 cm³ of methanol. The reaction mixture is stirred at room temperature for 2 hours. After mixing the methanol under reduced pressure (5 kPa), the mixture is stirred with 50 cm³ of dichloromethane and 50 cm³ of a saturated ammonium chloride solution. The organic phase is separated by settling and then dried over magnesium sulfate. After filtering through paper and concentrating under reduced pressure (5 kPa) at a temperature in the region of 40°C, 1.6 g of a product are obtained, which product is purified by chromatography at atmospheric pressure on a column of silica gel (particle size 20-45 µm; diameter 3 cm; 60 g), elution being carried out with a dichloromethane/methanol (96/4 by volume) mixture and 10-cm³ fractions being collected. The fractions from 30 to 45 are collected. These fractions are combined and then concentrated under reduced pressure (5 kPa) at approximately 40°C. 1.05 g of methyl (3R,4R)-1-[2-(3-fluorophenylthio)ethyl]-4-[3-hydroxy-3-(6-methoxyquinolin-4-yl)]piperidine-3-carboxylate are obtained in the form of a mobile brown oil.

Methyl (3R,4R)-1-[2-(3-fluorophenylthio)-

ethyl]-4-[3-(6-methoxyquinolin-4-yl)propan-3-one]-piperidine-3-carboxylate can be prepared in the following way:

A mixture of 6.44 g of methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propan-3-one]piperidine-3-carboxylate in 100 cm³ of acetonitrile, 3.43 g of 2-(3-fluorophenylthio)ethyl-1-chloride, 8.85 g of potassium carbonate and 1.24 g of potassium iodide is heated at a temperature in the region of 65°C for 48 hours. After cooling, the insoluble material is filtered off. The filtrate is concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. The oily residue is purified by chromatography at atmospheric pressure on a column of silica gel (particle size 20-45 μm; diameter 6 cm; 250 g), elution being carried out with a dichloromethane/ethyl acetate/methanol (50/50/3 by volume) mixture and 50-cm³ fractions being collected. The fractions from 19 to 25 are collected. These fractions are combined and then concentrated under reduced pressure (5 kPa) at approximately 40°C. 2.1 g of methyl (3R,4R)-1-[2-(3-fluorophenylthio)-ethyl]-4-[3-(6-methoxyquinolin-4-yl)-3-oxopropyl]-piperidine-3-carboxylate are obtained in the form of a mobile brown oil.

25 2-(3-Fluorophenylthio)ethyl-1-chloride can be obtained in the following way:

A solution of 3.75 g of sodium hydroxide pellet in 50 cm³ of distilled water is added dropwise to a solution of 10 g of 3-fluorothiophenol and 0.1 cm³ of Aliquat 336 in 125 cm³ of 1,2-dichloroethane. The temperature rises to 33°C. The reaction mixture is stirred at room temperature for 5 hours. The reaction mixture is separated by settling. The organic phase is washed with 50 cm³ of 0.1N HCl and with 50 cm³ of distilled water and then dried over magnesium sulfate. After filtering through paper and concentrating under reduced pressure (5 kPa) at a temperature in the region of 40°C, 15 g of a residue are obtained, which residue is purified by chromatography at atmospheric pressure on a column of silica gel (particle size 20-45 µm; diameter 6 cm; 400 g), elution being carried out with cyclohexane and 100-cm³ fractions being collected. The fractions from 15 to 40 are collected. These fractions are combined and then concentrated under reduced pressure (5 kPa) at approximately 40°C. 13.6 g of 2-(3-fluorophenylthio)ethyl-1-chloride are obtained in the form of a mobile colorless oil.

Methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-(3-phenylpropyl)piperidine-3-carboxylate

0.15 g of sodium borohydride is added portionwise at a temperature in the region of 20°C and under an inert atmosphere to a stirred solution of

1.59 g of methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]-1-(3-phenylpropyl)piperidine-3-carboxylate in 25 cm³ of methanol. The mixture is subsequently stirred for 75 minutes at a temperature in the region of 20°C. 15 cm³ of distilled water are then added while maintaining the same temperature. The mixture, with a milky appearance, is concentrated under reduced pressure (5 kPa) at a temperature in the region of 30°C. The residue obtained is taken up in 40 cm³ of distilled water to which have been added 80 cm³ of dichloromethane, stirred and then separated by settling. The organic phase is withdrawn and then washed with one times 40 cm³ of water and dried over magnesium sulfate. After filtering through paper and then mixing the solvent under reduced pressure (5 kPa) at a temperature in the region of 40°C, 1.39 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-(3-phenylpropyl)piperidine-3-carboxylate are obtained in the form of a sticky solid with a foamy appearance and an orange color.

Methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]-1-(3-phenylpropyl)piperidine-3-carboxylate can be prepared in the following way:

A suspension of 4.51 g of methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylate and 2.3 g of potassium carbonate in 75 cm³

of acetone is heated with stirring at a temperature in the region of 58°C. A solution of 2.5 cm³ of 1-bromo-3-phenylpropane in 7.5 cm³ of acetone is added dropwise at this temperature. Heating is extended for 19 hours.

5 After cooling, the reaction mass is filtered; the cake is washed with 2 times 30 cm³ of acetone. The filtrate and the wash liquors are combined and concentrated under reduced pressure (5 kPa) at a temperature in the region of 30°C. 7.12 g of a product are obtained in the

10 form of an oil which is purified by chromatography at atmospheric pressure on a column of silica gel (particle size 20-45 μm; diameter 7 cm; mass 712 g), elution being carried out with a chloroform/methanol/aqueous ammonia (12/2.25/0.38 by

15 volume) mixture and 65-cm³ fractions being collected. Fractions 9 to 14 are combined and then concentrated under reduced pressure (5 kPa) at a temperature in the region of 30°C. 6.7 g of an oil are obtained, which oil is subjected to a second purification by chromatography

20 at atmospheric pressure on a column of silica gel (particle size 20-45 μm; diameter 4.8 cm; mass 336 g), elution being carried out with a mixture of ethyl acetate and methanol (9/1 by volume) and 20-cm³ fractions being collected. Fractions 71 to 122 are

25 combined and then concentrated under reduced pressure (5 kPa) at a temperature in the region of 30°C. 1.66 g

of methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]-1-(3-phenylpropyl)piperidine-3-carboxylate are obtained in the form of an oil with a brown color.

Methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylate can be prepared in the following way:

A solution of 19.4 g of (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]-1-(t-butyloxy-carbonyl)piperidine-3-carboxylic acid (80% content) in 355 cm³ of methanol is cooled to a temperature in the region of -30°C. 7.7 cm³ of thionyl chloride are added with stirring while maintaining the temperature between -25 and -30°C. After the addition, the mixture is maintained at approximately -30°C for 30 minutes and then the temperature is allowed to return to approximately 20°C. After stirring at room temperature for 19 hours, the reaction mixture is concentrated under reduced pressure (5 kPa) at a temperature in the region of 30°C. The residue obtained is taken up in 300 cm³ of water to which have been added 200 cm³ of dichloromethane and is then stirred. The organic phase is separated by settling; the aqueous phase is again extracted with 200 cm³ of dichloromethane. The aqueous solution is brought to pH 8 by gradual addition of solid sodium hydrogencarbonate. After extracting the alkaline solution obtained with 3 times 200 cm³ of

dichloromethane, the combined organic extracts are washed with 2 times 200 cm³ of water and then dried over magnesium sulfate. After filtering through paper, the organic solution is concentrated under reduced pressure
5 (5 kPa) at a temperature in the region of 40°C. 4.51 g of methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)-propyl]piperidine-3-carboxylate are obtained in the form of a lacquer with a brown color.

(3R,4R)-4-[3-Oxo-3-(6-methoxyquinolin-4-yl)-
10 propyl]-1-(tert-butoxycarbonyl)piperidine-3-carboxylic acid can be prepared in the following way:

A solution of 36 g of (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]-3-vinylpiperidine in 54 cm³ of acetone is cooled to a temperature in the
15 region of 0°C. 150 cm³ of 3M sulfuric acid are added over 15 minutes, with stirring, while maintaining the temperature between 0 and 5°C. The temperature is lowered to approximately 0°C and a solution of 32 g of sodium permanganate in 200 cm³ of distilled water is
20 added dropwise to the mixture. The reaction mixture is stirred for an additional 45 minutes at a temperature of between 10 and 15°C and then the temperature is allowed to rise to within the region of 20°C. After stirring for 3 hours at this temperature, the reaction
25 mass is cooled to a temperature in the region of 0°C and then 160 cm³ of 38% potassium hydroxide solution are

added slowly at a temperature of less than 10°C. After stirring for 30 minutes at a temperature in the region of 10°C, the mixture is filtered. The cake is taken up in 300 cm³ of water to which have been added 15 cm³ of 5 38% potassium hydroxide solution and is stirred for 20 minutes. After filtering and then washing the cake with 2 times 200 cm³ of distilled water, the filtrates are combined and then 24 g of di-tert-butyl dicarbonate are added. The solution is stirred at a temperature in 10 the region of 20°C for 15 hours. After adding one liter of ethyl acetate and stirring, the mixture is separated by settling and the separated aqueous phase is then brought to pH 5 by addition of 38 cm³ of 37% concentrated aqueous hydrochloric acid. The mixture is 15 extracted again with 5 times 1 liter of ethyl acetate. The extracts are combined and then washed with 2 times 1 liter of water saturated with sodium chloride. The organic solution is dried over magnesium sulfate, filtered through paper and concentrated under reduced 20 pressure (5 kPa) at a temperature in the region of 40°C. 21.2 g of (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]-1-(t-butyloxycarbonyl)piperidine-3-carboxylic acid are obtained in the form of a brown solid melting at 114°C with softening.

25 (3R,4R)-4-[3-Oxo-3-(6-methoxyquinolin-4-yl)-propyl]-3-vinylpiperidine can be obtained by

application of the method disclosed in Patent
Application FR 2,354,771.

Example 22

(3R,4R)-1-[2-(3-Fluorophenylthio)ethyl]-4-[3-(R,S)-
5 fluoro-3-(6-methoxyquinolin-4-yl)propyl]piperidine-
3-carboxylic acid dihydrochloride

0.9 g of methyl (3R,4R)-1-[2-(3-fluorophenyl-
thio)ethyl]-4-[3-(R,S)-fluoro-3-(6-methoxyquinolin-4-
yl)propyl]piperidine-3-carboxylate in 12 cm³ of methanol
10 and 1.4 cm³ of 5N sodium hydroxide are heated, with
stirring, at a temperature in the region of 60°C for
4 hours. The reaction mixture is mixed under reduced
pressure (5 kPa) at a temperature in the region of
50°C. 15 cm³ of water are added to the residue obtained
15 and then 2.1 cm³ of 5N aqueous hydrochloric acid are
added. The reaction mixture is again mixed to dryness.
The residue obtained is taken up in a
dichloromethane/methanol (90/10 by volume) mixture. The
sodium chloride is filtered off and then the filtrate
20 is concentrated under reduced pressure (5 kPa) at a
temperature in the region of 30°C. The foam obtained is
trituated with ethyl ether. The solid formed is
filtered off. 0.9 g of beige solid is obtained. This
solid is dissolved in a mixture of 50 cm³ of chloroform
25 and 50 cm³ of acetonitrile. The insoluble material is
filtered off and then the filtrate is acidified with

20 cm³ of a 1N solution of hydrochloric acid in ether. The reaction mixture is mixed under reduced pressure (5 kPa) at a temperature in the region of 30°C. The residue obtained is triturated with ethyl ether. The solid formed is filtered off and then dried under vacuum. 0.9 g of (3R,4R)-1-[2-(3-fluorophenylthio)-ethyl]-4-[3-(R,S)-fluoro-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylic acid dihydrochloride is obtained in the form of a solid with a beige color.

¹H N.M.R. spectrum (600 MHz, d₆-(CD₃)₂SO, with addition of a few drops of d₄-CD₃COOD, at a temperature of 383K, δ in ppm): from 1.40 to 2.25 and from 2.65 to 3.65 (mts, 16H), 3.96 (s, 3H), 6.31 (mt, J_{HF} = 47 Hz, 1H), 7.03 (mt, 1H), 7.25 (mt, 2H), from 7.30 to 7.45 (mt, 2H), 7.53 (mt, 1H), 7.57 (mt, 1H), 8.09 (d, J = 9 Hz, 1H), 8.82 (d, J = 5 Hz, 1H).

Methyl (3R,4R)-1-[2-(3-fluorophenylthio)ethyl]-4-[3-(R,S)-fluoro-3-(6-methoxyquinolin-4-yl)propyl]-piperidine-3-carboxylate

1.7 g of methyl (3R,4R)-1-[2-(3-fluorophenylthio)ethyl]-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylate are dissolved in 17 cm³ of dichloromethane under an argon atmosphere. 0.53 cm³ of diethylaminosulfur trifluoride is added dropwise with stirring at 20°C. After stirring for 2 hours at room temperature, the reaction mixture is

cooled to 15°C and then 20 cm³ of a saturated sodium hydrogencarbonate solution are added dropwise. The organic phase is separated by settling and then the aqueous phase is extracted twice with 50 cm³ of
5 dichloromethane. The combined organic extracts are washed with 2 times 50 cm³ of distilled water and then dried over magnesium sulfate. After filtering through paper, the solution is mixed under reduced pressure (5 kPa) at a temperature in the region of 30°C. 1.6 g
10 of a brown oil are obtained, which oil is purified twice by chromatography at atmospheric pressure on a column of silica gel (particle size 20-45 µm; diameter 3 cm; 60 g), elution being carried out with a dichloromethane/methanol (98/2 by volume) mixture and
15 10-cm³ fractions being collected. For the first purification, the fractions from 15 to 25 are collected. For the second purification, the fractions from 18 to 30 are collected. These fractions are combined and then concentrated under reduced pressure
20 (5 kPa). 0.92 g of methyl (3R,4R)-1-[2-(3-fluorophenylthio)ethyl]-4-[3-(R,S)-fluoro-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylate is obtained in the form of a brown oil.

Methyl (3R,4R)-1-[2-(3-fluorophenylthio)-
25 ethyl]-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylate is obtained as

described in Example 21.

Example 23

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(1,3-thiazol-2-ylthio)ethyl]piperidine-3-carboxylic acid dihydrochloride

A mixture of 0.21 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(1,3-thiazol-2-ylthio)ethyl]piperidine-3-carboxylate and 0.33 cm³ of 5N aqueous sodium hydroxide in 3 cm³ of methanol is heated at a temperature in the region of 60°C, with stirring, for 18 hours. After cooling, the reaction mixture is mixed under reduced pressure (5 kPa) at a temperature in the region of 40°C; the residue is taken up in 6 cm³ of water and then washed with 6 cm³ of ethyl acetate. The aqueous phase is mixed to dryness under reduced pressure (5 kPa) at a temperature in the region of 80°C. The residue obtained is triturated in 5 cm³ of dichloromethane and then acidified by addition of 1 cm³ of a 3.3N solution of hydrochloric acid in diisopropyl ether. The insoluble material is filtered off and washed with 2 times 3 cm³ of a dichloromethane/methanol (90/10 by volume) mixture. The filtrate is mixed under reduced pressure (5 kPa) at a temperature in the region of 40°C. 0.19 g of (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(1,3-thiazol-2-ylthio)ethyl]piperidine-

3-carboxylic acid dihydrochloride is obtained in the form of an amorphous solid with a beige color which melts at approximately 75°C with softening.

- ¹H N.M.R. spectrum (400 MHz, d₆-(CD₃)₂SO, with addition of a few drops of d₄-CD₃COOD, at a temperature of 373K, δ in ppm): from 1.35 to 2.15 and from 2.50 to 3.70 (mt, 16H), 3.94 (s, 3H), 5.28 (mt, 1H), from 7.40 to 7.75 (mt, 5H), 7.99 (d, J = 9 Hz, 1H), 8.72 (d, J = 5 Hz, 1H).
- 10 **Methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(1,3-thiazol-2-ylthio)ethyl]-piperidine-3-carboxylate**

- By carrying out the reaction by analogy with Example 5 but from methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(1,3-thiazol-2-ylthio)ethyl]piperidine-3-carboxylate and sodium borohydride, 0.17 g of methyl (3R,4R)-4-[3(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(1,3-thiazol-2-ylthio)ethyl]piperidine-3-carboxylate is
- 20 obtained in the form of a viscous oil with a yellow color.

- Infrared spectrum (CCl₄): 3550-3150 cm⁻¹, alcohol OH v, 2949 cm⁻¹, aliphatic CH v, 1736 cm⁻¹, C=O v, 1228 cm⁻¹, ether C-O v, 1031 cm⁻¹, alcohol C-O v, 854 cm⁻¹,
- 25 quinoline CH γ.

Methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-

4-yl)propyl]-1-[2-(1,3-thiazol-2-ylthio)ethyl]-
piperidine-3-carboxylate can be prepared, by analogy
with Example 4, from methyl (3R,4R)-4-[3-oxo-3-
(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylate
5 and 2-(2-chloroethylthio)thiazole.

2-(2-Chloroethylthio)thiazole can be prepared
in the following way:

1.2 cm³ of 1-bromo-2-chloroethane are run, at
a temperature in the region of 20°C, into a stirred
10 solution of 1.47 g of 2-mercaptothiazole and 1.95 g of
potassium carbonate in 12.5 cm³ of dimethylformamide.
The mixture is subsequently stirred for 2 hours at a
temperature in the region of 20°C. The insoluble
material is filtered off and washed with 2 times 5 cm³
15 of dimethylformamide. The filtrate is run onto a
mixture of 50 g of crushed ice and 50 cm³ of distilled
water, 50 cm³ of ethyl ether are then added and the
mixture is stirred and then separated by settling. The
aqueous phase is separated by settling and then
20 extracted with 2 times 25 cm³ of ethyl ether. The
combined ethereal phases are washed with 2 times 25 cm³
of water and then dried over magnesium sulfate. After
filtering through paper, the organic solution is mixed
under reduced pressure (5 kPa) at a temperature in the
25 region of 40°C. 2.11 g of 2-(2-chloroethylthio)thiazole
are obtained in the form of a mobile oil with a yellow

color.

Example 24

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[2-(2-thienyllthio)ethyl]piperidine-

5 **3-carboxylic acid dihydrochloride**

A mixture of 0.45 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienyllthio)ethyl]piperidine-3-carboxylate, 3.5 cm³ of methanol and 0.54 cm³ of 5N aqueous sodium
10 hydroxide is heated with stirring at a temperature in the region of 60°C for 20 hours. After mixing the solvents under reduced pressure (5 kPa) at a temperature in the region of 40°C, the residue obtained is taken up in 3 cm³ of a 6N aqueous hydrochloric acid
15 solution. The solution is mixed under the same conditions and then the residue obtained is triturated in a dichloromethane/methanol (90/10 by volume) mixture. The insoluble material is filtered off and washed twice with 1 cm³ of this mixture. The filtrate is
20 dried over sodium sulfate and then concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. After drying in the air, 0.16 g of (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienyllthio)ethyl]piperidine-3-carboxylic acid
25 dihydrochloride is obtained in the form of a beige solid which melts, with softening, at approximately

148°C.

¹H N.M.R. spectrum (300 MHz, d6-(CD₃)₂SO, with addition of a few drops of d4-CD₃COOD, δ in ppm): from 1.35 to 2.30 and from 2.80 to 3.75 (mts, 16H), 3.98 and 4.00
 5 (2s, 3H), from 5.40 to 5.63 (mt, 1H), from 7.05 to 7.15 (mt, 1H), from 7.25 to 7.40 (mt, 1H), from 7.50 to 7.80 (mt, 3H), 8.00 (mt, 1H), 8.24 (broad d, J = 9 Hz, 1H), 9.05 (d, J = 5 Hz, 1H).

**Methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-
 10 4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-carboxylate**

By carrying out the reaction by analogy with Example 21 but from methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)-
 15 ethyl]piperidine-3-carboxylate and sodium borohydride, 0.95 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)-ethyl]piperidine-3-carboxylate is obtained in the form of an orange oil.

20 Infrared spectrum (CH₂Cl₂): 3600-3150 cm⁻¹, alcohol OH v, 2951 cm⁻¹, aliphatic CH v, 1732 cm⁻¹, C=O v, 1228 cm⁻¹, ether C-O v, 1031 cm⁻¹, alcohol C-O v, 847 cm⁻¹, quinoline CH γ.

Methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-
 25 4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-carboxylate can be prepared, by analogy with

Example 4, from methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylate and 2-(2-chloroethylthio)thiophene.

2-(2-Chloroethylthio)thiophene can be
5 prepared in the following way:

4.72 cm³ of thiophene-2-thiol are run, with stirring at a temperature in the region of 20°C, into a stirred solution [lacuna] 8.25 cm³ of 20% aqueous sodium hydroxide solution and 14.6 cm³ of 1-bromo-
10 2-chloroethane. The mixture is subsequently stirred for 6 hours at a temperature in the region of 20°C. 40 cm³ of ethyl ether are subsequently added and the organic phase is washed with water and then dried over magnesium sulfate. After filtering through paper, the
15 organic solution is mixed under reduced pressure (5 kPa) at a temperature in the region of 40°C. The residue obtained is purified by chromatography, under a pressure reduced to 50 kPa of nitrogen, on a column of silica gel (particle size 20-45 µm; diameter 4.5 cm; 20 weight of silica 250 g), elution being carried out with a cyclohexane/ethyl acetate (95/5 by volume) mixture. 7.27 g of 2-(2-chloroethylthio)thiophene are obtained in the form of a mobile oil with a yellow color.

Example 25

25 (3R,4R)-4-[3-(R,S)-Hydroxy-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-fluorophenyl)prop-2-ynyl]piperidine-

3-carboxylic acid dihydrochloride

2.1 cm³ of 5N aqueous sodium hydroxide are added to a solution of 1.3 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-fluorophenyl)prop-2-ynyl]piperidine-3-carboxylate in 15 cm³ of dioxane and then the solution is heated at a temperature in the region of 60°C for 16 hours. After cooling, the solution obtained is concentrated under reduced pressure (2 kPa) at a temperature in the region of 45°C. The residue obtained is purified by chromatography under argon pressure (50 kPa) on a column of Amicon silica gel (particle size 20-45 μm; diameter 4 cm; height 24 cm), elution being carried out with a mixture of chloroform, methanol and ammonia (24/12/1 by volume) and 30-cm³ fractions being collected. Fractions 41 to 58 are combined and then mixed under reduced pressure (2 kPa) at a temperature in the region of 40°C. 1.0 g of a foam is obtained, which foam is dissolved in 8 cm³ of acetone. This solution is added to 5 cm³ of a 1N solution of hydrochloric acid in ether. After stirring for 5 minutes, the solid obtained is filtered and then dried to constant weight under reduced pressure (2 kPa) at a temperature in the region of 40°C. 820 mg of (3R,4R)-4-[3-(R,S)-hydroxy-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-fluorophenyl)prop-2-ynyl]piperidine-

3-carboxylic acid dihydrochloride are obtained in the form of a hygroscopic white solid.

¹H N.M.R. spectrum (300 MHz, d₆-(CD₃)₂SO, with addition of a few drops of d₄-CD₃COOD, δ in ppm): from 1.35 to 2.30 and from 2.90 to 3.65 (mts, 12H), 3.99 (s, 3H), from 4.20 to 4.50 (mt, 2H), from 5.40 to 5.60 (mt, 1H), from 7.25 to 7.70 (mt, 5H), from 7.70 to 7.80 (mt, 1H), 7.99 (mt, 1H), 8.20 (d, J = 9 Hz, 1H), 9.01 (broad d, J = 5 Hz, 1H).

10 **Methyl (3R,4R)-4-[3-(R,S)-hydroxy-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-fluorophenyl)prop-2-ynyl]-piperidine-3-carboxylate**

0.193 g of sodium borohydride is added in two portions, at a temperature in the region of 20°C and under an inert atmosphere, to a stirred solution of 2 g of methyl (3R,4R)-4-[3-oxo-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-fluorophenyl)prop-2-ynyl]piperidine-3-carboxylate in 30 cm³ of methanol. The mixture is subsequently stirred for 3 hours at a temperature in the region of 20°C. 10 cm³ of distilled water are then added while maintaining the same temperature. The mixture is concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. The residue obtained is taken up in 25 cm³ of distilled water. The mixture is extracted with a total of 150 cm³ of dichloromethane. The organic phases are combined, then

washed three times with 30 cm³ of water and then dried over magnesium sulfate. After filtering through paper and then mixing the solvent under reduced pressure (5 kPa) at a temperature in the region of 40°C, 1.8 g
5 of a foam are obtained, which foam is purified by chromatography at atmospheric pressure on a column of Amicon silica gel (particle size 20-45 μm; diameter 3 cm; height 30 cm), elution being carried out with ethyl acetate and 50-cm³ fractions being collected.
10 Fractions 17 to 28 are combined and then mixed under reduced pressure (2 kPa) at a temperature in the region of 40°C. 1.4 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-fluorophenyl)-prop-2-ynyl]piperidine-3-carboxylate are thus obtained
15 in the form of a light yellow foam.

Methyl (3R,4R)-4-[3-oxo-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-fluorophenyl)prop-2-ynyl]-piperidine-3-carboxylate can be obtained in the following way:

20 0.404 g of tetrakis(triphenylphosphine)-palladium, 0.118 g of triphenylphosphine and 0.191 g of cuprous iodide are added under an inert atmosphere, at a temperature in the region of 20°C, to a stirred solution of 1.97 g of methyl (3R,4R)-4-[3-oxo-
25 (6-methoxyquinolin-4-yl)propyl]-1-(prop-2-ynyl)-piperidine-3-carboxylate in 40 cm³ of acetonitrile.

0.90 cm³ of 3-fluoriodobenzene is subsequently added, followed by 1.40 cm³ of triethylamine. The mixture is stirred for 15 hours at a temperature in the region of 20°C and then filtered through celite. The cake is
5 washed with 3 times 10 cm³ of acetonitrile. The combined filtrates are concentrated under reduced pressure (2 kPa) at a temperature in the region of 40°C. 4.3 g of an oil are obtained, which oil is purified by chromatography at atmospheric pressure on a column of
10 silica gel (particle size 20-45 µm; diameter 3 cm; height 60 cm), elution being carried out with ethyl acetate and 50-cm³ fractions being collected. Fractions 21 to 42 are combined and mixed under reduced pressure (2 kPa) at a temperature in the region of 35°C. 2 g of
15 methyl (3R,4R)-4-[3-oxo-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-fluorophenyl)prop-2-ynyl]piperidine-3-carboxylate are obtained in the form of an oil with a yellow color.

Methyl (3R,4R)-4-[3-oxo-(6-methoxyquinolin-
20 4-yl)propyl]-1-(prop-2-ynyl)piperidine-3-carboxylate can be obtained in the following way:

19.6 cm³ of triethylamine are added, at a temperature in the region of 20°C, to a stirred suspension of 15 g of methyl (3R,4R)-4-[3-oxo-
25 (6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylate dihydrochloride in 150 cm³ of anhydrous

dimethylformamide and under an inert atmosphere,
followed, after 45 minutes, by 3.95 cm³ of propargyl
bromide diluted in 5 cm³ of anhydrous dimethylformamide.
After stirring for 15 minutes at a temperature in the
5 region of 20°C, the mixture is heated for 4 hours at a
temperature in the region of 45°C. After cooling, the
reaction mixture is poured into a mixture of 150 cm³ of
ethyl acetate and 150 cm³ of distilled water. The
mixture is stirred for a few minutes and then the
10 organic phase is separated by settling. The aqueous
layer is extracted with 2 times 150 cm³ of ethyl
acetate. The organic phases are combined, washed with
3 times 200 cm³ of distilled water and dried over sodium
sulfate. After filtering and then mixing the solvent
15 under reduced pressure (2 kPa) at a temperature in the
region of 40°C, 13.8 g of an oil are obtained, which
oil is purified by chromatography under argon pressure
(50 kPa) on a column of silica gel (particle size 40-
63 µm; diameter 5 cm; height 34 cm), elution being
20 carried out with a mixture of ethyl acetate and
cyclohexane (9/1 by volume) up to the fraction 40 and
then with ethyl acetate for the following fractions and
50-cm³ fractions being collected. Fractions 23 to 70 are
combined and then mixed under reduced pressure (2 kPa)
25 at a temperature in the region of 45°C. 8.2 g [lacuna]
methyl (3R,4R)-4-[3-oxo-(6-methoxyquinolin-4-

yl)propyl]-1-(prop-2-ynyl)piperidine-3-carboxylate are obtained in the form of an oil with an orange color.

Methyl (3R,4R)-4-[3-oxo-(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylate dihydrochloride
5 can be obtained as described in Example 21.

Example 26

(3R,4R)-4-[3-(R,S)-Hydroxy-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-carboxylic acid dihydrochloride

10 2 cm³ of 5N aqueous sodium hydroxide are added to a solution of 1.3 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-3-yl)propyl-2-ynyl]piperidine-3-carboxylate in 13 cm³ of dioxane and the solution is then heated at a
15 temperature in the region of 60°C for 3 hours. After cooling, the solution obtained is concentrated under reduced pressure (2 kPa) at a temperature in the region of 45°C. The residue obtained is taken up in 75 cm³ of distilled water. The aqueous phase is washed with a
20 total of 75 cm³ of dichloromethane. The aqueous phase is concentrated to a volume in the region of 10 cm³, cooled to a temperature in the region of 5°C and then acidified to a pH in the region of 1 by addition of 5N hydrochloric acid. After stirring for 12 hours at a
25 temperature in the region of 20°C, the aqueous phase is concentrated under reduced pressure (2 kPa) at a

temperature in the region of 45°C. The residue obtained is taken up in 50 cm³ of acetone. The solution obtained is concentrated under reduced pressure (2 kPa) at a temperature in the region of 45°C. The residue obtained is purified by chromatography under argon pressure (50 kPa) on a column of silica gel (particle size 20-45 μm; diameter 3 cm; height 30 cm), elution being carried out with a mixture of chloroform, methanol and ammonia (24/12/1 by volume) and 15-cm³ fractions being collected. Fractions 19 to 53 are combined and then mixed under reduced pressure (2 kPa) at a temperature in the region of 40°C. 0.8 g of a foam is obtained, which foam is dissolved in 7 cm³ of dichloromethane. This solution is added to 9 cm³ of a 1N solution of hydrochloric acid in ether. After stirring for 5 minutes at a temperature in the region of 20°C, the solid obtained is filtered off, washed with a total of 50 cm³ of diethyl ether and then dried to constant weight under reduced pressure (2 kPa) at a temperature in the region of 40°C. 0.92 g of (3R,4R)-4-[3-(R,S)-hydroxy-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-carboxylic acid dihydrochloride is obtained in the form of crystals with an off-white color.

¹H N.M.R. spectrum (400 MHz, d₄-CD₃OD, δ in ppm): from 1.50 to 2.30 (mt, 7H), 3.06 and 3.11 (2 mts, 1H), from

3.15 to 3.95 (mt, 4H), 4.03 and 4.04 (2s, 3H), from
 4.15 to 4.45 (mt, 2H), 5.55 and 5.66 (2 mts, 1H), 7.04
 (mt, 1H), 7.37 (mt, 1H), 7.51 (d, J = 5 Hz, 1H), 7.62
 and 7.69 (2 broad s, 1H), 7.77 (dd, J = 9 and 2 Hz,
 5 1H), from 8.10 to 8.20 (mt, 2H), 8.92 and 8.94 (mt,
 1H).

**Methyl (3R,4R)-4-[3-(R,S)-hydroxy-(6-methoxyquinolin-
 4-yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-
 carboxylate**

10 0.15 g of sodium borohydride is added in one
 portion, at a temperature in the region of 20°C and
 under an inert atmosphere, to a stirred solution of
 1.6 g [lacuna] methyl (3R,4R)-4-[3-oxo-(6-methoxy-
 quinolin-4-yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]-
 15 piperidine-3-carboxylate in 15 cm³ of methanol. The
 mixture is subsequently stirred for 2.5 hours at a
 temperature in the region of 25°C. 15 cm³ of distilled
 water are then added dropwise over approximately 10
 minutes while maintaining at a temperature in the
 20 region of 15°C. The mixture is concentrated under
 reduced pressure (5 kPa) at a temperature in the region
 of 40°C. The residue obtained is taken up in 20 cm³ of
 distilled water. The mixture is extracted with a total
 of 100 cm³ of dichloromethane. The organic phases are
 25 combined, dried over sodium sulfate and then mixed
 under reduced pressure (5 kPa) at a temperature in the

region of 40°C. The solid obtained is purified by chromatography under argon pressure (50 kPa) on a column of silica gel (particle size 20-45 μm ; diameter 3 cm; height 35 cm), elution being carried out with a mixture of ethyl acetate and cyclohexane (8/2 by volume) and 15-cm³ fractions being collected. Fractions 38 to 59 are combined and then mixed under reduced pressure (2 kPa) at a temperature in the region of 40°C. 1.3 g [lacuna] (3R,4R)-4-[3-(R,S)-hydroxy-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-carboxylate are thus obtained in the form of a foam.

Methyl (3R,4R)-4-[3-oxo-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-carboxylate can be obtained in the following way:

0.404 g of tetrakis(triphenylphosphine)-palladium, 0.118 g of triphenylphosphine and 0.191 g of cuprous iodide are added under an inert atmosphere, at a temperature in the region of 20°C, to a stirred solution of 1.97 g of methyl (3R,4R)-4-[3-oxo-(6-methoxyquinolin-4-yl)propyl]-1-(prop-2-ynyl)-piperidine-3-carboxylate in 40 cm³ of acetonitrile. 0.84 cm³ of 2-iodothiophene is subsequently added, followed by 1.40 cm³ of triethylamine. The mixture is stirred for 48 hours at a temperature in the region of 20°C and then filtered through celite. The cake is

washed with acetonitrile. The combined filtrates are concentrated under reduced pressure (2 kPa) at a temperature in the region of 40°C. 4.2 g of an oil are obtained, which oil is purified by chromatography under
 5 argon pressure (50 kPa) on a column of silica gel (particle size 20-45 μm ; diameter 3 cm; height 30 cm), elution being carried out with a mixture of ethyl acetate and cyclohexane (8/2 by volume) and 15- cm^3 fractions being collected. Fractions 16 to 32 are
 10 combined and mixed under reduced pressure (2 kPa) at a temperature in the region of 35°C. 1.6 g of methyl (3R,4R)-4-[3-oxo-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-carboxylate are obtained in the form of an oil with an orange
 15 color.

Methyl (3R,4R)-4-[3-oxo-(6-methoxyquinolin-4-yl)propyl]-1-(prop-2-ynyl)piperidine-3-carboxylate can be obtained as shown in Example 25.

Example 27

20 **(3R,4R)-4-[3-(R,S)-Fluoro-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-carboxylic acid monohydrochloride**

2.5 cm^3 of 5N aqueous sodium hydroxide are added to a solution of 1.6 g of methyl (3R,4R)-4-[3-
 25 (R,S)-fluoro-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-carboxylate in

16 cm³ of dioxane and then the solution is heated at a temperature in the region of 60°C for 50 hours. After cooling, the solution obtained is concentrated under reduced pressure (2 kPa) at a temperature in the region of 45°C. The residue obtained is taken up in 50 cm³ of acetone and then concentrated under reduced pressure (2 kPa) at a temperature in the region of 45°C. The residue obtained is purified by chromatography under argon pressure (50 kPa) on a column of silica gel (particle size 20-45 μm; diameter 3.5 cm; height 34 cm), elution being carried out with a mixture of chloroform, methanol and ammonia (24/12/1 by volume) and 15-cm³ fractions being collected. Fractions 16 to 28 are combined and then mixed under reduced pressure (2 kPa) at a temperature in the region of 40°C. The solid is taken up in acetone and then concentrated under reduced pressure (2 kPa) at a temperature in the region of 45°C. 0.72 g of a foam is obtained, which foam is dissolved in 8 cm³ of dichloromethane. This solution is added to 8 cm³ of a 1N solution of hydrochloric acid in ether. After stirring for 15 minutes at a temperature in the region of 20°C, the solid obtained is filtered off and then dried to constant weight under reduced pressure (2 kPa) at a temperature in the region of 40°C. 0.74 g of (3R,4R)-4-[3-(R,S)-fluoro-(6-methoxyquinolin-4-yl)propyl]-1-[3-

(thien-2-yl)prop-2-ynyl]piperidine-3-carboxylic acid monohydrochloride is obtained in the form of crystals with an off-white color which melt at 166°C.

¹H N.M.R. spectrum (400 MHz, d6-(CD₃)₂SO, at a
 5 temperature of 383K, δ in ppm): 1.68 (mt, 2H), 1.87 (mt, 1H), 1.89 (mt, 1H), from 2.05 to 2.25 (mt, 3H), from 3.05 to 3.45 (mt, 5H), 3.98 (s, 3H), 4.25 (limit AB, 2H), 6.31 (mt, J_{HF} = 16 Hz, 1H), 7.12 (dd, J = 5 and 3.5 Hz, 1H), from 7.35 to 7.45 (mt, 2H), from 7.45 to
 10 7.55 (mt, 2H), 7.64 (d, J = 5 Hz, 1H), 8.05 (d, J = 9 Hz, 1H), 8.80 (d, J = 5 Hz, 1H).

Methyl (3R,4R)-4-[3-(R,S)-fluoro-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-carboxylate

15 A solution of 1.14 cm³ of sulfur diethylamino-trisulfide in 10 cm³ of dichloromethane is added dropwise over approximately 15 minutes to a solution of 3.4 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]-
 20 piperidine-3-carboxylate under an inert atmosphere in 50 cm³ of dichloromethane. After stirring for 9 hours at a temperature in the region of 20°C, the reaction mixture is cooled to a temperature in the region of 10°C and 60 cm³ of a saturated sodium hydrogencarbonate
 25 solution is added over approximately 15 minutes. The organic phase is separated by settling and then washed

with a total of 300 cm³ of distilled water. The organic phase is dried over sodium sulfate, filtered and then concentrated under reduced pressure (2 kPa) at a temperature in the region of 40°C. The residue obtained
 5 is purified by chromatography under argon pressure (50 kPa) on a column of silica gel (particle size 20-45 μm; diameter 4 cm; height 31 cm), elution being carried out with a mixture of ethyl acetate and cyclohexane (1/1 by volume) and 15-cm³ fractions being
 10 collected. Fractions 34 to 65 are combined and then mixed under reduced pressure (2 kPa) at a temperature in the region of 40°C. The solid is taken up in acetone and then concentrated under reduced pressure (2 kPa) at a temperature in the region of 45°C. 1.8 g of 0.74 g of
 15 methyl (3R,4R)-4-[3-(R,S)-fluoro-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-carboxylate are obtained in the form of a yellow oil.

Methyl (3R,4R)-4-[3-(R,S)-hydroxy-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]-
 20 piperidine-3-carboxylate can be prepared as described in Example 26.

Example 28

(3R,4R)-4-[3-(R,S)-Fluoro-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(3-fluorophenyl)prop-2-ynyl]piperidine-
 25 3-carboxylic acid dihydrochloride

A solution of 1.48 g of methyl (3R,4R)-

4-[3-(R,S)-fluoro-(6-methoxyquinolin-4-yl)propyl]-
1-[3-(3-fluorophenyl)prop-2-ynyl]piperidine-
3-carboxylate in 15 cm³ of dioxane and of 2.4 cm³ of 5N
aqueous sodium hydroxide is heated at a temperature in
5 the region of 60°C for 17 hours. After cooling, the
solution obtained is concentrated under reduced
pressure (2 kPa) at a temperature in the region of
45°C. The residue obtained is taken up in 50 cm³ of
acetone and then concentrated under reduced pressure
10 (2 kPa) at a temperature in the region of 45°C. The
residue obtained is purified by chromatography at
atmospheric pressure on a column of silica gel
(particle size 20-45 µm; diameter 2.8 cm;
volume: 150 cm³), elution being carried out with a
15 mixture of dichloromethane, methanol and ammonia
(120/20/3 by volume) and 20-cm³ fractions being
collected. The fractions comprising the expected
product are combined and then mixed under reduced
pressure (2 kPa) at a temperature in the region of
20 40°C. The solid is taken up in 25 cm³ of acetone and
then 5 cm³ of a 1N solution of hydrochloric acid in
ether and 20 cm³ of diethyl ether are added. After
stirring for 2 hours at a temperature in the region of
20°C, the solid obtained is filtered off and then dried
25 to constant weight under reduced pressure (2 kPa) at a
temperature in the region of 40°C. 0.6 g of (3R,4R)-

4-[3-(R,S)-fluoro-(6-methoxyquinolin-4-yl)propyl]-
1-[3-(3-fluorophenyl)prop-2-ynyl]piperidine-
3-carboxylic acid dihydrochloride is obtained in the
form of a solid.

- 5 ¹H N.M.R. spectrum (400 MHz, d₆-(CD₃)₂SO, at a
temperature of 373K, δ in ppm): from 1.55 to 1.95 (mt,
3H), from 2.00 to 2.30 (mts, 4H), from 3.15 to 3.50
(mt, 5H), 3.99 (s, 3H), 4.31 (limit AB, 2H), 6.38 (mt,
J_{HF} = 47 Hz, 1H), from 7.25 to 7.55 (mt, 5H), 7.55 (dd,
10 J = 9 and 2.5 Hz, 1H), 7.60 (d, J = 5 Hz, 1H), 8.12 (d,
J = 9 Hz, 1H), 8.84 (d, J = 5 Hz, 1H).

**Methyl (3R,4R)-4-[3-(R,S)-fluoro-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(3-fluorophenyl)prop-2-ynyl]-
piperidine-3-carboxylate**

- 15 A solution of 1.4 cm³ of sulfur diethylamino-
trisulfide in 5 cm³ of dichloromethane is added dropwise
over approximately 15 minutes to a solution, cooled to
a temperature in the region of 15°C, of 4.2 g of methyl
(3R,4R)-4-[3-(R,S)-hydroxy-(6-methoxyquinolin-4-yl)-
20 propyl]-1-[3-(3-fluorophenyl)prop-2-ynyl]piperidine-
3-carboxylate under an inert atmosphere in 75 cm³ of
dichloromethane. After stirring for 9 hours at a
temperature in the region of 25°C, 100 cm³ of a
saturated sodium hydrogencarbonate solution are added
25 while taking care that the temperature does not exceed
25°C. The organic phase is separated by settling and

then washed with a total of 100 cm³ of distilled water. The organic phase is dried over magnesium sulfate, filtered and then concentrated under reduced pressure (2 kPa) at a temperature in the region of 40°C. The
 5 residue obtained is purified by chromatography at atmospheric pressure on a column of silica gel (particle size 20-45 µm; diameter 4 cm; height 42 cm), elution being carried out with ethyl acetate and 70-cm³ fractions being collected. Fractions 19 to 35 are
 10 combined and then mixed under reduced pressure (2 kPa) at a temperature in the region of 40°C. The solid is taken up in acetone and then concentrated under reduced pressure (2 kPa) at a temperature in the region of 45°C. 3.1 g [lacuna] methyl (3R,4R)-4-[3-(R,S)-fluoro-
 15 (6-methoxyquinolin-4-yl)propyl]-1-[3-(3-fluorophenyl)prop-2-ynyl]piperidine-3-carboxylate are obtained in the form of a yellow oil.

Methyl (3R,4R)-4-[3-(R,S)-hydroxy-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3-fluorophenyl)prop-
 20 2-ynyl]piperidine-3-carboxylate can be prepared as described in Example 25.

Example 29

(3R,4R)-3-Hydroxymethyl-4-[3-(R,S)-hydroxy-
 3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)-
 25 prop-2-ynyl]piperidine

4.2 cm³ of a 20% solution of diisobutyl-

aluminum hydride in toluene are added to a mixture, cooled to -20°C , with stirring, of 0.5 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-carboxylate in 10 cm^3 of toluene. Stirring is maintained for 3 hours at this temperature and then 15 cm^3 of a saturated ammonium chloride solution are added, stirring is maintained for 15 minutes and the temperature is allowed to rise to a temperature in the region of 20°C . The aqueous phase is separated by settling, dried over anhydrous magnesium sulfate, filtered and concentrated to dryness under reduced pressure (2 kPa). The residue obtained is purified by chromatography on a column of silica gel (particle size 20-45 μm ; diameter 2 cm; height 20 cm), elution being carried out, under a pressure of 50 kPa of nitrogen, with dichloromethane and then a mixture of dichloromethane and methanol (95/5 by volume) and 30- cm^3 fractions being collected. Fractions 14 to 16 are combined and then mixed under reduced pressure (5 kPa) at a temperature in the region of 40°C . The residue obtained is taken up in 5 cm^3 of dichloromethane and filtered. The filtrate is concentrated to dryness under reduced pressure (2 kPa). 0.17 g of (3R,4R)-3-hydroxy-methyl-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)-propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine is

obtained in the form of a gum.

¹H N.M.R. spectrum (400 MHz, d6-(CD₃)₂SO, δ in ppm):
 from 1.25 to 1.90 (mt, 8H), 2.22 (mt, 2H), from 2.65 to
 2.90 (mt, 2H), from 3.35 to 3.60 (mt, 4H), 3.91 and
 5 3.93 (2s, 3H), 4.29 (unresolved peak, 1H), 5.28 (mt,
 1H), 5.50 and 5.52 (2d, J = 4.5 Hz, 1H), 7.07 (mt, 1H),
 7.28 (dd, J = 4 and 1 Hz, 1H), from 7.35 and 7.45 (mt,
 2H), from 7.50 to 7.60 (mt, 2H), 7.95 (d, J = 9 Hz,
 1H), 8.71 (d, J = 5 Hz, 1H).

10 Methyl (3R,4R)-4-[3-(R,S)-hydroxy-
 3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)-
 prop-2-ynyl]piperidine-3-carboxylate is obtained as
 described in Example 26.

Example 30

15 (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)-
 propyl]-3-hydroxymethyl-1-[2-(1,3-thiazol-2-ylthio)-
 ethyl]-3-piperidine

By carrying out the reaction by analogy with
 Example 5 but from methyl (3R,4R)-4-[3-oxo-
 20 3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(1,3-thiazol-
 2-ylthio)ethyl]piperidine-3-carboxylate and sodium
 borohydride, 0.33 g of (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-
 methoxyquinolin-4-yl)propyl]-3-hydroxymethyl-1-[2-(1,3-
 thiazol-2-ylthio)ethyl]-3-piperidine is obtained in the
 25 form of an oil.

¹H N.M.R. spectrum (300 MHz, d6-(CD₃)₂SO, δ in ppm):

from 1.10 to 2.20, from 2.55 to 2.90 and from 3.30 to 3.60 (mts, 16H), 2.60 (t, J = 6.5 Hz, 2H), 3.93 and 3.94 (2s, 3H), 4.26 (unresolved peak, 1H), 5.27 (mt, 1H), from 5.50 to 5.60 (mt, 1H), from 7.35 to 7.45 (mt, 2H), 7.56 (mt, 1H), 7.63 (d, J = 3 Hz, 1H), 7.71 (d, J = 3 Hz, 1H), 7.95 (d, J = 9 Hz, 1H), 8.72 (d, J = 5 Hz, 1H).

Methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(1,3-thiazol-2-ylthio)ethyl]-piperidine-3-carboxylate is prepared, by analogy with Example 4, from methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylate and 2-bromo-1-(1,3-thiazol-2-ylthio)ethane.

Methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylate is prepared as described in Example 21.

Example 32

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-3-yl)prop-2-ynyl]piperidine-3-carboxylic acid

A solution of 0.73 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-3-yl)prop-2-ynyl]piperidine-3-carboxylate, 7.6 cm³ of dioxane and 1.22 cm³ of 5N aqueous sodium hydroxide solution is heated at a temperature in the region of 60°C with stirring for 3 hours 30 minutes.

After cooling to a temperature in the region of 20°C, the reaction mixture is concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. The residue obtained is purified by

5 chromatography under argon pressure (55 kPa) on a column of silica gel (particle size 40-63 μm ; diameter 5 cm; silica volume 120 cm^3), elution being carried out first with 1120 cm^3 of a dichloromethane/methanol/ acetonitrile (92/8/7 by volume) mixture. Elution is

10 subsequently carried out with 224 cm^3 of the same mixture (but with a composition of 92/12/7 by volume), then 224 cm^3 of the same mixture (with a composition of 92/16/7 by volume), then 400 cm^3 of a dichloromethane/ methanol (50/50 by volume) mixture and finally 400 cm^3

15 of pure methanol. A fraction of 112 cm^3 is collected, followed by 7- cm^3 fractions. Fractions 173 to 468 are combined and then evaporated under reduced pressure (2 kPa) at a temperature in the region of 35°C. A foam is obtained, which foam is dried under reduced pressure

20 (30 Pa) at a temperature in the region of 30°C for 4 to 5 hours. 0.33 g of (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-3-yl)prop-2-ynyl]piperidine-3-carboxylic acid is obtained in the form of a beige-colored solid with a foamy appearance

25 melting at 113-115°C.

^1H NMR spectrum (300 MHz, $\text{d}_6\text{-(CD}_3)_2\text{SO}$, δ in ppm). A

mixture of two diastereoisomers is observed:

from 1.40 to 1.95 and from 2.30 to 2.95 (mts, 12H),
3.53 and 3.55 (2s, 2H in all), 3.90 and 3.92 (2s, 3H in
all), 5.24 (mt, 1H), from 5.35 to 5.65 (broad
5 unresolved peak, 1H), 7.14 (d, $J = 5$ Hz, 1H), from 7.30
to 7.45 (mt, 2H), 7.53 and 7.55 (2d, $J = 5$ Hz, 1H in
all), 7.60 (dd, $J = 5$ and 3 Hz, 1H), 7.74 (mt, 1H),
7.94 (d, $J = 9.5$ Hz, 1H), 8.70 (d, $J = 5$ Hz, 1H).

**Methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-
10 4-yl)propyl]-1-[3-(thien-3-yl)prop-2-ynyl]piperidine-3-
carboxylate**

The preparation is carried out as in the
preparation of methyl (3R,4R)-4-[3-(6-methoxyquinolin-
4-yl)propyl]-1-[3-(thien-3-yl)prop-2-ynyl]piperidine-3-
15 carboxylate, from 1.2 g of methyl (3R,4R)-4-[3-(R,S)-
hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-(prop-2-
ynyl)piperidine-3-carboxylate in 20 cm³ of acetonitrile,
0.067 g of triphenylphosphine, 0.227 g of
tetrakis(triphenylphosphine)palladium, 0.115 g of
20 cuprous iodide and 10 cm³ of acetonitrile, followed by
0.84 cm³ of triethylamine, 0.95 g of 3-iodothiophene and
5 cm³ of acetonitrile. The reaction mixture is filtered
and then the cake is washed with 30 cm³ of acetonitrile.
The filtrate is evaporated under reduced pressure
25 (2 kPa) at a temperature in the region of 40°C. The
residue obtained is taken up in 100 cm³ of

dichloromethane. The resulting organic solution is washed with 3 times 50 cm³ of a saturated sodium chloride solution, dried over sodium sulfate, filtered and then concentrated under reduced pressure under the same conditions as above. The residue obtained is purified by chromatography under an argon pressure of 55 kPa on a column of silica gel (particle size 40-63 μm; diameter 4 cm; silica volume 220 cm³), elution being carried out with ethyl acetate. A fraction of 180 cm³ is collected, followed by 10-cm³ fractions. Fractions 73 to 300 are combined and then concentrated under reduced pressure (2 kPa) at a temperature in the region of 45°C. 0.96 g of a product is obtained, which product is rereacted with 0.76 g of 3-iodothiophene, 0.092 g of cuprous iodide, 0.054 g of triphenylphosphine, 0.67 cm³ of triethylamine and 0.181 g of tetrakis(triphenylphosphine)palladium in 27 cm³ of acetonitrile at a temperature in the region of 20°C for 16 hours. The reaction mixture is filtered; the cake is washed with 30 cm³ of acetonitrile. The filtrate is concentrated under reduced pressure (2 kPa) at a temperature in the region of 40°C. The residue obtained is dissolved in 50 cm³ of dichloromethane; the solution is washed with 3 times 25 cm³ of a saturated sodium chloride solution, separated by settling and then dried over sodium sulfate, filtered and

concentrated under reduced pressure (2 kPa) at a temperature in the region of 35°C. 1.15 g of a residue are obtained, which residue is purified by chromatography under an argon pressure of 55 kPa on a column of silica gel (particle size 40-63 μm ; diameter 4 cm; silica volume 120 cm^3), elution being carried out with ethyl acetate. A fraction of 110 cm^3 is first collected, followed by 8- cm^3 fractions. Fractions 68 to 260 are combined and concentrated under reduced pressure (2 kPa) at a temperature in the region of 45°C. 0.73 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-3-yl)prop-2-ynyl]piperidine-3-carboxylate is obtained in the form of a foam with a yellow color.

Infrared spectrum (CCl_4): 3600-3200 cm^{-1} , OH ν , 2950 cm^{-1} , aliphatic CH ν , 1739 cm^{-1} , C=O ν , 1241 cm^{-1} , ether C-O ν , 626 cm^{-1} , thiophene CH γ

Methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-(prop-2-ynyl)piperidine-3-carboxylate

A suspension of 2.45 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-piperidine-3-carboxylate, 2.1 g of potassium carbonate, 0.95 g of potassium iodide and 0.6 cm^3 of propargyl bromide in 50 cm^3 of acetonitrile is stirred for 40 hours at a temperature in the region of 20°C in an inert atmosphere. After filtering the reaction mass,

the filtrate is evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. The residue obtained is purified by chromatography on a column of silica gel (particle size 20-45 μm ; diameter 2.5 cm; mass 50 g), elution being carried out with ethyl acetate and 60- cm^3 fractions being collected. Fractions 6 to 12 are combined and then concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 1.35 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-(prop-2-ynyl)piperidine-3-carboxylate are obtained in the form of a gum.

Infrared spectrum (CCl_4): 3600-3200 cm^{-1} , OH v, 3311 cm^{-1} , acetylenic CH v, 2950 cm^{-1} , aliphatic CH v, 1740 cm^{-1} , C=O v, 1242 cm^{-1} , ether C-O v

3-Iodothiophene can be prepared according to N.A. Petasis et al., Synlett., 141 (1988).

Example 33

(3R,4R)-4-[3-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-carboxylic acid, diastereoisomer A, and (3R,4R)-4-[3-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-carboxylic acid, diastereoisomer B.

1.36 g of (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-carboxylic acid, dissolved in 100 cm^3

of dichloromethane, are chromatographed on a 35-cm column with a diameter of 6 cm packed with 700 g of silica (particle size 5-15 μm) from Daiso. The elution is carried out using a dichloromethane/methanol (92/8 by volume) mixture comprising 0.05% of triethylamine. The flow rate is 90 cm^3 per minute and detection is carried out using ultraviolet radiation at 280 nm. This operation results in two diastereoisomers being obtained. The fractions corresponding to the first are concentrated to dryness under reduced pressure (5 kPa) at a temperature in the region of 40°C and then the residue obtained is dried in an oven under reduced pressure (13 Pa) at a temperature in the region of 40°C. 0.28 g of (3R,4R)-4-[3-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-carboxylic acid, diastereoisomer A ($[\alpha]_D^{20} = -73.8^\circ \pm 1.4$, in dichloromethane at 0.5%), is obtained in the form of a foam with a yellow color. The fractions corresponding to the second diastereoisomer are treated as above. 0.46 g of (3R,4R)-4-[3-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-carboxylic acid, diastereoisomer B ($[\alpha]_D^{20} = +71.2^\circ \pm 1.2$, in dichloromethane at 0.5%), is obtained in the form of a yellow foam.

Diastereoisomer A: ^1H NMR spectrum (300 MHz, $(\text{CD}_3)_2\text{SO}$, δ

in ppm): from 1.35 to 1.75 and 1.94 (mts, 7H), 2.22 (mt, 1H), 2.36 (broad d, $J = 10.5$ Hz, 1H), from 2.50 to 2.65 (mt, 1H), 2.61 (t, $J = 7$ Hz, 2H), 2.76 (mt, 1H), from 2.85 to 3.05 (mt, 1H), 2.98 (mt, 2H), 3.95 (s, 3H), 5.22 (mt, 1H), 5.51 (broad d, $J = 4.5$ Hz, 1H), 7.07 (dd, $J = 5$ and 4 Hz, 1H), 7.22 (broad d, $J = 4$ Hz, 1H), 7.36 (mt, 1H), from 7.35 to 7.45 (mt, 2H), 7.64 (broad d, $J = 5$ Hz, 1H), 7.95 (d, $J = 9.5$ Hz, 1H), 8.72 (d, $J = 5$ Hz, 1H).

10 Diastereoisomer B: ^1H NMR spectrum (300 MHz, $(\text{CD}_3)_2\text{SO}$, δ in ppm): from 1.20 to 1.95 (mts, 7H), 2.22 (mt, 1H), 2.39 (broad d, $J = 10.5$ Hz, 1H), from 2.50 to 2.95 (mt, 3H), 2.60 (t, $J = 7$ Hz, 2H), 2.97 (mt, 2H), 3.92 (s, 3H), 5.25 (mt, 1H), 5.51 (unresolved peak, 1H), 7.06 (dd, $J = 5$ and 3.5 Hz, 1H), 7.20 (dd, $J = 3.5$ and 1.5 Hz, 1H), 7.40 (mt, 2H), 7.53 (d, $J = 5$ Hz, 1H), 7.63 (dd, $J = 5$ and 1.5 Hz, 1H), 7.93 (d, $J = 10$ Hz, 1H), 8.70 (d, $J = 5$ Hz, 1H).

Example 34

20 **(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(tert-butylthio)ethyl]piperidine-3-carboxylic acid dihydrochloride**

1 cm^3 of 5N aqueous sodium hydroxide solution is added, with stirring and under an inert atmosphere, to a solution of 0.26 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(tert-

butylthio)ethyl]piperidine-3-carboxylate in 5 cm³ of methanol. After heating the solution to a temperature in the region of 60°C and then cooling to room temperature, the reaction mass is evaporated under reduced pressure (2.8 kPa) at a temperature in the region of 60°C. The residue obtained is taken up in 5 cm³ of distilled water and then 5 cm³ of concentrated hydrochloric acid (d = 1.18) are added. The mixture is evaporated under reduced pressure (2.8 kPa) at a temperature in the region of 60°C. The residue obtained is taken up in 4 cm³ of a dichloromethane/methanol (90/10 by volume) mixture. The white precipitate obtained is filtered off and washed with 2 times 2 cm³ of this same mixture. The filtrate is concentrated under reduced pressure (2.8 kPa) at a temperature in the region of 40°C. The product obtained is dried under reduced pressure (16 Pa) at a temperature in the region of 60°C. 0.29 g of (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(tert-butylthio)-ethyl]piperidine-3-carboxylic acid dihydrochloride is obtained in the form of a solid with a beige color melting with softening in the region of 169°C.

¹H NMR spectrum (400 MHz, d6-(CD₃)₂SO at a temperature of 383 K, δ in ppm). A mixture of two diastereoisomers is observed:

1.34 and 1.36 (2s, 9H in all), from 1.40 to 2.35 and

from 2.90 to 3.70 (mts, 12H), 3.00 (broad t, J = 8 Hz, 2H), 3.26 (t, J = 8 Hz, 2H), 4.01 (s, 3H), 5.40 (mt, 1H), from 7.55 to 7.70 (mt, 2H), 7.82 (mt, 1H), 8.22 (d, J = 9 Hz, 1H), 8.88 (d, J = 5 Hz, 1H), from 10.90
5 to 11.45 (broad unresolved peak, 1H).

Methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(tert-butylthio)ethyl]piperidine-3-carboxylate

0.717 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-
10 3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylate in 15 cm³ of acetonitrile and 15 cm³ of methanol is heated for 16 hours at a temperature in the region of the reflux temperature, with stirring and under an inert atmosphere, with 0.43 g of 2-chloroethyl
15 tert-butyl sulfide in the presence of 0.33 g of potassium carbonate and 0.4 g of potassium iodide. After cooling the reaction mixture to a temperature in the region of 20°C, the insoluble material is filtered off. The filtrate is evaporated under reduced pressure
20 (5 kPa) at a temperature in the region of 40°C. The residue obtained is purified by chromatography under a nitrogen pressure of 100 kPa on a column of silica gel (particle size 40-63 µm; diameter 3.5 cm; height 35 cm), elution being carried out with a
25 dichloromethane/methanol (97/3 by volume) mixture and 35-cm³ fractions being collected. Fractions 54 to 70 are

combined and then evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 0.265 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(tert-butylthio)ethyl]-piperidine-3-carboxylate is obtained in the form of a lacquer with a brown color.

Infrared spectrum (CCl₄): 3550-3100 cm⁻¹, alcohol OH v, 2959 cm⁻¹, aliphatic CH v, 1736 cm⁻¹, C=O v, 1242, 1228 cm⁻¹, ether C-O v, 1034 cm⁻¹, alcohol C-O v, 853 cm⁻¹, quinoline CH γ

2-Chloroethyl tert-butyl sulfide can be prepared by application of the method disclosed in Patent EP 136878.

Example 35

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclopentylthio)ethyl]piperidine-3-carboxylic acid dihydrochloride

2 cm³ of 5N aqueous sodium hydroxide solution are added, with stirring and under an inert atmosphere, to a solution of 0.48 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclopentylthio)ethyl]piperidine-3-carboxylate in 10 cm³ of methanol. After heating the mixture for 16 hours at a temperature in the region of 60°C, the reaction mass is evaporated under reduced pressure (2.9 kPa) at a temperature in the region of 60°C and

the residue obtained is taken up in 4.3 cm³ of distilled water to which have been added 4.3 cm³ of 28% hydrochloric acid. The remaining insoluble material is filtered off and then the filtrate is evaporated under the same conditions as above. The residue obtained is stirred in a dichloromethane/methanol (90/10 by volume) mixture. The resulting precipitate is filtered off and washed with 3 times 2.5 cm³ of the same mixture. The filtrate is evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 0.48 g of (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclopentylthio)ethyl]piperidine-3-carboxylic acid dihydrochloride is obtained in the form of a foam with a green color melting with softening at a temperature in the region of 156°C.

¹H NMR spectrum (400 MHz, d₆-(CD₃)₂SO at a temperature of 373 K, δ in ppm). A mixture of two diastereoisomers is observed:

from 1.45 to 2.30 and from 2.90 to 3.60 (mts, 20H), 2.98 (broad t, J = 7.5 Hz, 2H), 3.22 (mt, 1H), 3.30 (t, J = 7.5 Hz, 2H), 4.00 (s, 3H), 5.37 (mt, 1H), from 7.50 to 7.65 (mt, 2H), 7.77 (mt, 1H), 8.17 (d, J = 9 Hz, 1H), 8.85 (d, J = 5 Hz, 1H).

Methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclopentylthio)ethyl]piperidine-3-carboxylate

0.717 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylate in 15 cm³ of acetonitrile and 15 cm³ of methanol is heated for 3½ h at a temperature in the region of the reflux temperature, with stirring and under an inert atmosphere, with 0.439 g of 90% 2-chloroethyl cyclopentyl sulfide in the presence of 0.332 g of potassium carbonate and 0.4 g of potassium iodide. After cooling the reaction mixture to a temperature in the region of 20°C, the insoluble material is filtered off and then washed with acetonitrile. The filtrate is evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. The residue obtained is purified by chromatography under a nitrogen pressure of 100 kPa on a column of silica gel (particle size 40-63 µm; diameter 3.5 cm; height 45 cm), elution being carried out with a dichloromethane/methanol (95/5 by volume) mixture and 35-cm³ fractions being collected. Fractions 25 to 45 are combined and then evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 0.48 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclopentylthio)-ethyl]piperidine-3-carboxylate is obtained in the form of a lacquer with a dark-green color. Infrared spectrum (CCl₄): 3550-3100 cm⁻¹, alcohol OH v,

2951 cm^{-1} , aliphatic CH v, 1736 cm^{-1} , C=O v, 1242,
1228 cm^{-1} , ether C-O v, 1034 cm^{-1} , alcohol C-O v,
853 cm^{-1} , quinoline CH γ

2-Chloroethyl cyclopentyl sulfide can be
5 prepared by application of the method disclosed in
Patent Application FR 2,395,260.

Example 36

**(3R,4R)-1-[2-(3-Fluorophenylthio)ethyl]-4-[3-(6-
methoxyquinolin-4-yl)propyl]piperidine-3-acetic acid
10 dihydrochloride**

A mixture of 0.48 g of methyl (3R,4R)-1-[2-
(3-fluorophenylthio)ethyl]-4-[3-(6-methoxyquinolin-4-
yl)propyl]piperidine-3-acetate in 10 cm^3 of dioxane to
which have been added 0.78 cm^3 of 5N aqueous sodium
15 hydroxide solution is stirred for 20 hours at a
temperature in the region of 60°C. After cooling to a
temperature in the region of 20°C, the reaction mass is
evaporated under reduced pressure (5 kPa) at a
temperature in the region of 40°C and then diluted with
20 10 cm^3 of water. The pH is brought to 4 by addition of a
sufficient amount of an aqueous citric acid solution.
The mixture is evaporated under reduced pressure
(5 kPa) at a temperature in the region of 40°C and then
the residue obtained is taken up in 70 cm^3 of water and
25 20 cm^3 of ethanol. The mixture is brought back to pH 9
and then evaporated under reduced pressure (5 kPa) at a

temperature in the region of 50°C. After taking the residue obtained up in 50 cm³ of a chloroform/methanol/-28% aqueous ammonia (12/3/0.5 by volume) mixture, the inorganic salts are filtered off. The filtrate is

5 evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 1.2 g of a product are obtained, which product is purified by chromatography at atmospheric pressure on a column of silica gel (particle size 20-45 µm; diameter 2 cm; height 25 cm), elution being carried out with a

10 chloroform/methanol/28% aqueous ammonia (12/3/0.5 by volume) mixture and first a fraction of 100 cm³ and then approximately 15-cm³ fractions being collected. Fractions 8 to 18 are combined and then concentrated

15 under reduced pressure (5 kPa) at a temperature in the region of 40°C. 0.31 g of a product is obtained in the form of a foam with a pale-yellow color, which product is stirred with 13 cm³ of 0.1N aqueous hydrochloric acid for 2 hours at a temperature in the region of 20°C.

20 After adding 5 cm³ of dioxane and stirring for an additional 2 hours at a temperature in the region of 20°C, the dioxane is evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. The solution obtained is frozen and then lyophilized.

25 0.35 g of (3R,4R)-1-[2-(3-fluorophenylthio)ethyl]-4-[3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetic acid

dihydrochloride is obtained in the form of lyophilizate with a white color.

¹H NMR spectrum (400 MHz, d₆-(CD₃)₂SO at a temperature of 383 K, δ in ppm): from 1.45 to 1.95 (mt, 8H), 2.33
 5 (dd, J = 16 and 5.5 Hz, 1H), from 2.45 to 2.60 (mt, 1H), from 2.90 to 3.55 (mt, 10H), 4.00 (s, 3H), 7.06 (broad t, J = 8 Hz, 1H), 7.28 (d, J = 8 Hz, 2H), 7.41 (mt, 1H), 7.46 (d, J = 5 Hz, 1H), 7.48 (d, J = 2.5 Hz, 1H), 7.51 (dd, J = 9.5 and 2.5 Hz, 1H), 8.07 (d, J =
 10 9.5 Hz, 1H), 8.72 (d, J = 5 Hz, 1H).

Methyl (3R,4R)-1-[2-(3-fluorophenylthio)ethyl]-4-[3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetate

A mixture of 0.76 g of methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetate and
 15 0.42 g of 2-(3-fluorophenylthio)ethyl-1-chloride in 15 cm³ of acetonitrile to which have been added 1.4 g of potassium carbonate and 0.15 g of potassium iodide is heated with stirring and under an inert atmosphere at a temperature in the region of 70°C for 20 hours. After
 20 adding 0.15 g of potassium iodide and heating for an additional 5 hours, the reaction mixture is cooled to a temperature in the region of 20°C, diluted with 15 cm³ of water and then extracted with 2 times 20 cm³ of ethyl acetate. The combined extracts are washed with 30 cm³ of
 25 N aqueous hydrochloric acid. The acid solution is separated and then rendered alkaline (pH 8-9) with the

sufficient amount of a saturated aqueous sodium hydrogencarbonate solution. The mixture is extracted with 2 times 30 cm³ of ethyl acetate. The combined extracts are dried over magnesium sulfate, filtered and
 5 then evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 0.71 g of an oil is obtained, which oil is purified by chromatography at atmospheric pressure on a column of silica gel (particle size 20-45 µm; diameter 2.5 cm; silica volume
 10 120 cm³), elution being carried out with the dichloromethane/methanol (99/1 by volume) mixture. A fraction of 500 cm³ is first collected and then approximately 15-cm³ fractions are collected. Fractions 10 to 20 are combined and then evaporated under reduced
 15 pressure (5 kPa) at a temperature in the region of 40°C. 0.48 g of methyl (3R,4R)-1-[2-(3-fluorophenyl-thio)ethyl]-4-[3-(6-methoxyquinolin-4-yl)propyl]-piperidine-3-acetate is obtained in the form of an oil with a yellow color.

20 Infrared spectrum (CH₂Cl₂): 2934, 2861 cm⁻¹, aliphatic CH v, 2807, 2767 cm⁻¹, N(CH₂)₃ CH₂ v, 1730 cm⁻¹, ester C-O v, 1242, 1227 cm⁻¹, ether C-O v, 848 cm⁻¹, quinoline CH γ

Methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-
 25 **piperidine-3-acetate**

A mixture of 2.8 g of (3R,4R)-4-[3-(6-

methoxyquinolin-4-yl)propyl]-1-(tert-butyloxycarbonyl)-
 piperidine-3-acetic acid in 100 cm³ of anhydrous
 methanol to which has been added 1 cm³ of 95% sulfuric
 acid is heated with stirring at a temperature in the
 5 region of the boiling point for 2 hours. After cooling
 to a temperature in the region of 20°C, the reaction
 mass is evaporated under reduced pressure (5 kPa) at a
 temperature in the region of 40°C and then 20 cm³ of a
 saturated aqueous sodium hydrogencarbonate solution are
 10 added to the residue obtained. The mixture is extracted
 with 4 times 20 cm³ of dichloromethane. The combined
 extracts are dried over magnesium sulfate, filtered and
 then evaporated under reduced pressure (5 kPa) at a
 temperature in the region of 40°C. 2.25 g of methyl
 15 (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]piperidine-
 3-acetate are obtained in the form of an oil with a
 brown color.

Infrared spectrum (CH₂Cl₂): 2954, 2865 cm⁻¹, aliphatic CH
 v, 2788 cm⁻¹, N(CH₂)₂ CH₂ v, 1736 cm⁻¹, ester C=O v, 1242,
 20 1227 cm⁻¹, ether C-O v, 848 cm⁻¹, quinoline CH γ

**(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-(tert-
 butyloxycarbonyl)piperidine-3-acetic acid**

1.48 g of potassium permanganate, dissolved
 beforehand in 45 cm³ of distilled water, followed by
 25 220 cm³ of acetone, are added, with stirring and under
 an inert atmosphere at a temperature in the region of

20°C, to a solution of 2 g of (3R,4R)-4-[3-(6-methoxy-quinolin-4-yl)propyl]-1-(tert-butyloxycarbonyl)-piperidine-3-acetaldehyde in 100 cm³ of acetone. The mixture obtained is stirred for 2 hours at a

5 temperature in the region of 20°C and then, after cooling to a temperature of between 0 and 5°C, a solution of 5 g of sodium sulfite in 150 cm³ of water is added. The brown manganese dioxide precipitate is filtered through celite and then the acetone is

10 evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. An amount of citric acid sufficient to produce a pH of 4-5 is added to the reaction mixture. The mixture is extracted with 2 times 100 cm³ of ethyl acetate. The combined extracts are

15 dried over magnesium sulfate, filtered and then evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 2.8 g of (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-(tert-butyloxycarbonyl)piperidine-3-acetic acid are obtained

20 in the form of a foam with a white color.

Infrared spectrum (KBr): 2977, 2932, 2868 cm⁻¹, aliphatic CH v, 3000-2200 cm⁻¹, acid OH v, 1734 cm⁻¹, acid C=O v, 1689 cm⁻¹, carbamate C=O v, 1391, 1365 cm⁻¹, CH₃ δ_{as}, 1246 cm⁻¹, ether C-O v, 1170 cm⁻¹, carbamate

25 C-O v, 848 cm⁻¹, quinoline CH γ

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-(tert-

butyloxycarbonyl)piperidine-3-acetaldehyde

A solution of 5.6 cm³ of dimethyl sulfoxide, dissolved in 80 cm³ of dichloromethane, then 13.5 g of (3R,4R)-3-(2-hydroxyethyl)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-(tert-butyloxycarbonyl)piperidine, dissolved in 80 cm³ of dichloromethane, and finally 26.5 cm³ of triethylamine, dissolved in 80 cm³ of dichloromethane, are successively added, with stirring and under a nitrogen atmosphere, to a solution, cooled to a temperature in the region of -60°C, of 3.5 cm³ of oxalyl chloride in 80 cm³ of dichloromethane. The solution obtained is held in the region of -60°C for 1 hour and then at a temperature in the region of 20°C for 3½ h. After diluting with 150 cm³ of dichloromethane, the reaction mixture is washed with 2 times 300 cm³ of water. The organic solution, separated by settling, is dried over magnesium sulfate, filtered and then evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 12.7 g of a brown oil are obtained, which oil is taken up in 400 cm³ of diethyl ether. The resulting solution is washed with 2 times 300 cm³ of water, then once with 300 cm³ of a 5% aqueous citric acid solution and finally with 2 times 300 cm³ of water. The organic solution is dried over magnesium sulfate and then concentrated under reduced pressure (5 kPa) at a temperature in the region of

40°C. 7.73 g of (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-(tert-butyloxycarbonyl)piperidine-3-acetaldehyde are obtained in the form of a sticky gum with a yellow color.

- 5 Infrared spectrum (CCl₄): 2978, 2932, 2864 cm⁻¹, aliphatic CH v, 2717 cm⁻¹, aldehyde CH v, 1729 cm⁻¹, aldehyde C=O v, 1694 cm⁻¹, carbamate C=O v, 1391, 1366 cm⁻¹, CH₃ δ_{as}, 1242 cm⁻¹, ether C-O v, 1158 cm⁻¹, carbamate C-O v, 844 cm⁻¹, quinoline CH γ
- 10 **(3R,4R)-3-(2-Hydroxyethyl)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-(tert-butyloxycarbonyl)piperidine**

A solution of 2 g of (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-(tert-butyloxycarbonyl)-3-vinylpiperidine and of 0.72 cm³ of triethylamineborane

15 in 10 cm³ of toluene is stirred under an inert atmosphere at a temperature in the region of 110°C for 10 hours. The reaction mass is concentrated to dryness under reduced pressure (5 kPa) at a temperature in the region of 60°C. 2.1 g of a foam with an orange color

20 are obtained, which product is dissolved in 9 cm³ of acetone and to which are added 1.9 cm³ of 5% aqueous hydrochloric acid. After stirring the mixture for 20 minutes at a temperature in the region of 20°C, the reaction mass is concentrated under reduced pressure

25 (5 kPa) at a temperature in the region of 40°C. The residue obtained is taken up in 7.5 cm³ of

tetrahydrofuran, 6.2 cm³ of 30% aqueous sodium hydroxide solution and 7.5 cm³ of hydrogen peroxide as a 30% aqueous solution. The mixture is heated for 3 hours at a temperature in the region of the reflux temperature.

5 After cooling, the reaction mixture is stirred with 30 cm³ of chloroform at a temperature in the region of 20°C. The aqueous phase is separated by settling; the organic phase is washed with 3 times 30 cm³ of water and then 1 times 20 cm³ of a saturated sodium chloride

10 solution. After drying over magnesium sulfate, the organic solution is concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 1.7 g of an oil with a brown-yellow color are obtained, which product is purified by chromatography at atmospheric

15 pressure on a column of silica gel (particle size 40-63 µm; diameter 3.5 cm; mass 60 g), elution being carried out with a dichloromethane/methanol (95/5 by volume) mixture and 20-cm³ fractions being collected. Fractions 4 and 5 are combined and evaporated under

20 reduced pressure (5 kPa) at a temperature in the region of 40°C. 0.95 g of (3R,4R)-3-(2-hydroxyethyl)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-(tert-butyloxycarbonyl)-piperidine is obtained in the form of a foam with an orange-yellow color.

25 Infrared spectrum (KBr): 3550-3100 cm⁻¹, alcohol OH v, 2972, 2931, 2865 cm⁻¹, aliphatic CH v, 1690 cm⁻¹,

carbamate C=O v, 1391, 1365 cm^{-1} , CH_3 δ_{as} , 1244, 1228 cm^{-1} , ether C-O v, 1158 cm^{-1} , carbamate C-O v, 1031 cm^{-1} , alcohol C-O v, 845 cm^{-1} , quinoline CH γ (3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-(tert-

5 **butyloxycarbonyl)-3-vinylpiperidine**

4 cm^3 of triethylamine, followed by 3.15 g of di-tert-butyl dicarbonate, are added, with stirring at a temperature in the region of 20°C, to a suspension of 5 g of (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-3-
10 vinylpiperidine hydrochloride in 50 cm^3 of dichloromethane. After 45 minutes, the solution obtained is washed with 2 times 30 cm^3 of water, dried over magnesium sulfate and then concentrated under reduced pressure (5 kPa) at a a temperature in the region of
15 40°C. 6 g of (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-(tert-butyloxycarbonyl)-3-vinylpiperidine are obtained in the form of an oil with a brown color. Infrared spectrum (CH_2Cl_2): 2972, 2933, 2860 cm^{-1} , aliphatic CH v, 1680 cm^{-1} , carbamate C=O v, 1391, 1365 cm^{-1} , CH_3 δ_{as} , 1244, 1228 cm^{-1} , ether C-O v, 1165 cm^{-1} , carbamate C-O v, 845 cm^{-1} , quinoline CH γ

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-3-vinylpiperidine hydrochloride can be obtained by application of the method disclosed in Patent
25 Application FR 2,354,771.

Example 37

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(cyclohexylthio)ethyl]piperidine-3-acetic acid dihydrochloride

A mixture of 0.3 g of methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclohexylthio)-ethyl]piperidine-3-acetate in 8 cm³ of dioxane in the presence of 0.5 cm³ of 5N aqueous sodium hydroxide solution is heated with stirring at a temperature in the region of 60°C for 20 hours. After cooling to a temperature in the region of 20°C, the reaction mixture is evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. A foam with a yellow color is obtained, which product is purified by chromatography at atmospheric pressure on a column of silica gel (particle size 20-45 µm; diameter 1.6 cm; silica volume 40 cm³), elution being carried out with a chloroform/methanol/28% aqueous ammonia (12/3/0.5 by volume) mixture and first a fraction of 125 cm³ and then approximately 10-cm³ fractions being collected. Fractions 3 to 7 are combined and then evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 0.27 g of a lacquer is obtained, which product is taken up in 5 cm³ of dioxane, 11 cm³ of 0.1N aqueous hydrochloric acid and 14 cm³ of distilled water. The dioxane is evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C and then the

residual solution is lyophilized. 0.29 g of (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclohexylthio)ethyl]piperidine-3-acetic acid dihydrochloride is obtained in the form of a lyophilizate with a white
5 color.

¹H NMR spectrum (400 MHz, d₆-(CD₃)₂SO at a temperature of 383 K, δ in ppm): from 1.25 to 2.05 (mt, 18H), 2.33 (dd, J = 16 and 5.5 Hz, 1H), from 2.50 to 2.60 (mt, 1H), 2.83 (mt, 1H), from 2.95 to 3.30 (mt, 10H), 4.00
10 (s, 3H), 7.45 (d, J = 5 Hz, 1H), 7.48 (d, J = 2 Hz, 1H), 7.51 (dd, J = 9.5 and 2 Hz, 1H), 8.08 (d, J = 9.5 Hz, 1H), 8.72 (d, J = 5 Hz, 1H).

Methyl (3R,4R)-4[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(cyclohexylthio)ethyl]piperidine-3-acetate

15 A mixture of 1.2 g of methyl (3R,4R)]-4-[3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetate and 0.65 g of 2-chloroethyl cyclohexyl sulfide in 25 cm³ of acetonitrile to which have been added 2.3 g of potassium carbonate and 0.55 g of potassium iodide is
20 heated with stirring and under an inert atmosphere at a temperature in the region of 80°C for 4 hours. After cooling to a temperature in the region of 20°C, the reaction mixture has 30 cm³ of water added to it and is then extracted with 2 times 200 cm³ of ethyl acetate.
25 The combined organic extracts are washed with 2 times 40 cm³ of N aqueous hydrochloric acid. After separating

by settling, the combined acid extracts are basified with a saturated aqueous sodium hydrogencarbonate solution and then extracted with 2 times 100 cm³ of ethyl acetate. The organic extracts are combined, dried
5 over magnesium sulfate, filtered and evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 0.80 g of a brown oil is obtained, which product is purified by chromatography at atmospheric pressure on a column of silica gel (particle size 20-
10 45 µm; diameter 2.5 cm; silica volume 120 cm³), elution being carried out first with a dichloromethane/methanol (99/1 by volume) mixture and first a fraction of 250 cm³ being collected and then elution being carried out with a dichloromethane/methanol (90/1 by volume) mixture and
15 a fraction of 200 cm³ being collected. Elution is again carried out with a dichloromethane/methanol (99/1 by volume) mixture and approximately 10-cm³ fractions are collected. Fractions 10 to 33 are combined and then concentrated under reduced pressure (5 kPa) at a
20 temperature in the region of 40°C. 0.30 g of methyl (3R,4R)-4[3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclohexylthio)ethyl]piperidine-3-acetate is obtained in the form of a colorless oil.

Infrared spectrum (CCl₄): 2932, 2855 cm⁻¹, aliphatic CH
25 v, 2800, 2763 cm⁻¹, N(CH₂)₃ CH₂ v, 1737 cm⁻¹ ester C=O v, 1241, 1227 cm⁻¹, ether C-O v, 844 cm⁻¹, quinoline CH γ

Methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetate can be prepared as described in Example 36.

Example 38

5 (3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-carboxylic acid dihydrochloride

A solution of 0.2 g of methyl (3R,4R)-4-[3-(R,S)-fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-carboxylate in 3 cm³ of 10 6N aqueous hydrochloric acid is heated with stirring at a temperature in the region of 100°C for 7 hours and then evaporated under reduced pressure (5 kPa) at a temperature in the region of 50°C. The residue obtained 15 is stirred in 10 cm³ of diisopropyl ether. The crystals which result therefrom are filtered off, washed with 2 times 5 cm³ of diisopropyl ether and dried under reduced pressure (13 Pa) at a temperature in the region of 60°C. 0.22 g of (3R,4R)-4-[3-(R,S)-fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)- 20 ethyl]piperidine-3-carboxylic acid dihydrochloride is obtained in the form of a solid with a beige color melting with softening at a temperature in the region of 140°C.

25 ¹H NMR spectrum (400 MHz, d6-(CD₃)₂SO with addition of a few drops of d4-CD₃COOD, at a temperature of 373 K, δ in

ppm). A mixture of two diastereoisomers is observed:
 from 1.55 to 2.30 and from 3.10 to 3.50 (mts, 15H),
 3.10 (broad s, 1H), 3.98 (s, 3H), 6.31 (mt, $J_{\text{HF}} = 48$ Hz,
 1H), 7.10 (mt, 1H), 7.29 (broad d, $J = 4$ Hz, 1H), from
 5 7.35 to 7.45 (mt, 1H), from 7.45 to 7.60 (mt, 2H), 7.64
 (broad d, $J = 5.5$ Hz, 1H), 8.06 (d, $J = 9$ Hz, 1H), 8.82
 (d, $J = 5$ Hz, 1H).

**Methyl (3R,4R)-4-[3-(R,S)-fluoro-3-(6-methoxyquinolin-
 4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-
 10 carboxylate**

0.16 cm³ of diethylaminosulfur trifluoride,
 dissolved in 2 cm³ of dichloromethane, is added, under
 an inert atmosphere, to a stirred solution, cooled to a
 temperature in the region of 10°C, of 0.5 g of methyl
 15 (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-
 yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-
 carboxylate in 8 cm³ of dichloromethane. After stirring
 for 10 minutes at this temperature, the mixture is
 allowed to return to a temperature in the region of
 20 20°C and stirring is continued for 18 hours. After
 adding 8 cm³ of a saturated aqueous sodium
 hydrogencarbonate solution and stirring for 15 minutes,
 the organic phase is separated by settling. The aqueous
 phase is extracted once with 5 cm³ of dichloromethane
 25 and the organic extracts are combined, dried over
 magnesium sulfate, filtered and evaporated under

reduced pressure (5 kPa) at a temperature in the region of 40°C. 0.5 g of a red oil is obtained, which product is purified by chromatography under a nitrogen pressure of 100 kPa on a column of silica gel (particle size 40-
 5 63 μm ; diameter 3.5 cm; silica height 35 cm), elution being carried out with dichloromethane/methanol (97.5/2.5 by volume) mixture and 30- cm^3 fractions being collected. Fractions 25 to 29 are combined and are evaporated under reduced pressure (5 kPa) at a
 10 temperature in the region of 40°C. 0.2 g of methyl (3R,4R)-4-[3-(R,S)-fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-carboxylate is obtained in the form of an oil with an orange color.

15 Infrared spectrum (CCl_4): 2950 cm^{-1} , aliphatic CH v, 2804, 2767 cm^{-1} , $\text{N}(\text{CH}_2)_3 \text{CH}_2$ v, 1737 cm^{-1} , ester C=O v, 1243, 1229 cm^{-1} , ether C-O v, 852 cm^{-1} , quinoline CH γ

Example 39

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-
 20 (thien-2-yl)prop-2-ynyl]piperidine-3-acetic acid
dihydrochloride

0.8 cm^3 of a 5N aqueous sodium hydroxide solution is added, under an inert atmosphere, to a stirred solution of 0.43 g of methyl (3R,4R)-4-[3-(6-
 25 methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-acetate in 10 cm^3 of dioxane. The

mixture is heated for 20 hours at a temperature in the region of 60°C and then, after cooling to a temperature in the region of 20°C, the reaction mixture is evaporated under reduced pressure (5 kPa) at a

5 temperature in the region of 45°C. 0.8 g of a product is obtained, which product is purified by chromatography at atmospheric pressure on a column of silica gel (particle size 20-44 μm ; diameter 3 cm; silica height 30 cm), elution being carried out with a

10 chloroform/methanol/28% aqueous ammonia (12/3/0.5 by volume) mixture and 25-cm³ fractions being collected. Fractions 14 to 29 are combined and then evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 0.350 g of a white solid is obtained,

15 the hydrochloride of which is prepared in the following way: the solid obtained is dissolved in 5 cm³ of dichloromethane and then the solution obtained is added, with stirring and under an inert atmosphere, to 10 cm³ of a 1N solution of hydrochloric acid in ether.

20 The mixture is diluted with 100 cm³ of anhydrous ether. A white suspension is obtained, which suspension is stirred for 3 hours at a temperature in the region of 20°C. The crystals are filtered off, washed with 5 times 10 cm³ of diethyl ether and dried under partial

25 pressure (10 Pa) at a temperature in the region of 20°C. 0.430 g of (3R,4R)-4-[3-(6-methoxyquinolin-4-

yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-acetic acid dihydrochloride is obtained in the form of a white solid melting while softening and decomposing in the region of 180°C.

- 5 ¹H NMR spectrum (400 MHz, d₆-(CD₃)₂SO, δ in ppm):
 from 1.35 to 3.80 (mts, 16H), 4.00 (s, 3H), 4.38 and
 4.43 (unresolved peaks, 2H in all), 7.16 (mt, 1H), 7.46
 (d, J = 3.5 Hz, 1H), 7.53 (mt, 1H), 7.64 (mt, 2H), 7.74
 (d, J = 5 Hz, 1H), 8.12 (d, J = 9.5 Hz, 1H), 8.86
 10 (unresolved peak, 1H), 9.95 and 10.45 (2 broad
 unresolved peaks, 1H in all), from 12.20 to 12.55
 (broad unresolved peak, 1H).

Methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-acetate

- 15 0.027 g of triphenylphosphine, 0.091 g of
 tetrakis(triphenylphosphine)palladium and then 0.044 g
 of cuprous iodide are added, at a temperature in the
 region of 20°C, under an inert atmosphere, to a stirred
 solution of 0.44 g of methyl (3R,4R)-4-[3-(6-
 20 methoxyquinolin-4-yl)propyl]-1-[prop-2-ynyl]piperidine-
 3-acetate in 15 cm³ of anhydrous acetonitrile. After
 stirring the solution obtained for 15 minutes, 0.2 cm³
 of 2-iodothiophene and 0.32 cm³ of triethylamine are
 added. After stirring for 12 hours at a temperature in
 25 the region of 20°C, the reaction mixture is filtered
 through celite and then the cake is washed with 5 times

10 cm³ of acetonitrile. The combined organic extracts are evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 1.1 g of an oil are obtained, which product is purified by chromatography
 5 at atmospheric pressure on a column of silica gel (particle size 20-45 µm; diameter 4 cm; silica height 28 cm), elution being carried out with ethyl acetate and 30-cm³ fractions being collected. Fractions 14 to 27 are combined and then evaporated under reduced pressure
 10 (5 kPa) at a temperature in the region of 40°C. 0.430 g of methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-acetate is obtained in the form of a viscous oil with a yellow color.

15 Infrared spectrum (CH₂Cl₂): 2936, 2862 cm⁻¹, aliphatic CH v, 2806, 2763 cm⁻¹, N(CH₂)₃ CH₂ v, 1731 cm⁻¹, ester C=O v, 1242, 1227 cm⁻¹, ether C-O v, 848 cm⁻¹, quinoline CH γ

Methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[prop-2-ynyl]piperidine-3-acetate

20 1.28 cm³ of triethylamine, followed by 0.26 cm³ of 97% propargyl bromide are added at a temperature in the region of 20°C, under an inert atmosphere, to a stirred solution of 0.8 g of methyl (3R,4R)-4-(3-(6-methoxyquinolin-4-yl)propyl)piperidine-
 25 3-acetate in 15 cm³ of anhydrous dimethylformamide. The mixture is brought to a temperature in the region of

45°C for 6 hours and then cooled to approximately 20°C. After diluting with 150 cm³ of water, the mixture is extracted with 5 times 50 cm³ of ethyl acetate. The combined extracts are washed with 3 times 50 cm³ of water, dried over magnesium sulfate, filtered and concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 1 g of an oily residue is obtained, which product is purified by chromatography at atmospheric pressure on a column of silica gel (particle size 20-45 µm; diameter 3 cm; silica height 27 cm), elution being carried out with pure ethyl acetate. 50-cm³ fractions are collected. Fractions 7 to 10 are combined and then evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 0.45 g of methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[prop-2-ynyl]piperidine-3-acetate is obtained in the form of a colorless viscous oil.

Infrared spectrum (CH₂Cl₂): 3302 cm⁻¹, acetylenic CH v, 2936, 2863 cm⁻¹, aliphatic CH v, 2808, 2764 cm⁻¹, N(CH₂)₃ CH₂ v, 1731 cm⁻¹, ester C=O v, 1242, 1227 cm⁻¹, ether C-O v, 848 cm⁻¹, quinoline CH γ

Methyl (3R,4R)-4-(3-(6-methoxyquinolin-4-yl)propyl)piperidine-3-acetate was prepared according to the procedure described in Example 36.

Example 40

(3R,4R)-4-[3-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-
 1-[2-(cycloheptylthio)ethyl]piperidine-3-carboxylic
 acid dihydrochloride, diastereoisomer A, and (3R,4R)-4-
 [3-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-
 5 (cycloheptylthio)ethyl]piperidine-3-carboxylic acid
 dihydrochloride, diastereoisomer B.

A mixture of 1.8 g of methyl (3R,4R)-4-[3-
 (R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-
 (cycloheptylthio)ethyl]piperidine-3-carboxylate in
 10 36 cm³ of dioxane with 2.8 cm³ of 5N aqueous sodium
 hydroxide solution is heated for 24 hours at a
 temperature in the region of 60°C. After cooling the
 reaction mixture to a temperature in the region of 20°C
 and then concentrating under reduced pressure (5 kPa)
 15 at a temperature in the region of 40°C, the residue
 obtained is purified by chromatography at atmospheric
 pressure on a column of silica gel (particle size
 20-45 µm; diameter 4 cm; mass 180 g), elution being
 carried out with a dichloromethane/methanol/28% aqueous
 20 ammonia (40/5/0.5 by volume) mixture and 50-cm³
 fractions being collected. 3 batches are obtained,
 which batches are evaporated under reduced pressure
 (5 kPa) at a temperature in the region of 40°C: batch A
 (0.48 g) corresponding to the diastereoisomer A,
 25 batch B (0.6 g) corresponding to the diastereoisomer B
 and batch C (0.5 g) corresponding to a mixture of the

two diastereoisomers. Batch A is purified in the following way: after dissolving in 15 cm³ of dichloromethane and adding to 10 cm³ of an N solution of hydrochloric acid in diethyl ether, the gummy mixture
5 obtained is evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. After taking the residue up in 40 cm³ of acetonitrile and 2 cm³ of 0.5N hydrochloric acid, the solution obtained is evaporated under the same conditions as above. A white
10 solid is obtained, which product is dried for 16 hours under reduced pressure (vacuum over phosphorus pentoxide, 5 kPa). After stirring in 100 cm³ of diethyl ether and then filtering, 0.514 g of (3R,4R)-4-[3-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclo-
15 heptylthio)ethyl]piperidine-3-carboxylic acid dihydrochloride, diastereoisomer A ($[\alpha]_D^{20} = -58.3^\circ \pm 1.00$, in methanol at 0.5%), is obtained in the form of a solid with a white color. Batches B and C are treated in the same way. In particular with batch B, 0.650 g of
20 (3R,4R)-4-[3-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cycloheptylthio)ethyl]piperidine-3-carboxylic acid dihydrochloride, diastereoisomer B ($[\alpha]_D^{20} = +120.4^\circ \pm 1.7$, in methanol at 0.5%), is obtained in the form of a solid with a white color.

25 Diastereoisomer A: ¹H NMR spectrum (400 MHz, d6-(CD₃)₂SO, δ in ppm):

from 1.40 to 2.35 and from 2.70 to 3.85 (mts, 29H),
 4.01 (s, 3H), 5.50 (mt, 1H), from 5.60 to 6.40 (broad
 unresolved peak, 1H), 7.55 (mt, 1H), 7.75 (broad d, J =
 9 Hz, 1H), 7.99 (d, J = 5 Hz, 1H), 8.30 (d, J = 9 Hz,
 5 1H), 9.04 (d, J = 5 Hz, 1H), 10.80 (unresolved peak,
 1H).

Diastereoisomer B: ^1H NMR spectrum (400 MHz, d_6 -
 $(\text{CD}_3)_2\text{SO}$, δ in ppm):

from 1.35 to 2.25 and from 2.70 to 3.80 (mts, 29H),
 10 4.00 (s, 3H), 5.49 and 5.55 (2 mts, 1H in all), from
 5.75 to 6.20 (broad unresolved peak, 1H), 7.56 and 7.62
 (2 broad s, 1H in all), 7.71 (broad d, J = 9 Hz, 1H),
 7.92 (mt, 1H), 8.24 (d, J = 9 Hz, 1H), 9.00 (d, J =
 4 Hz, 1H), 10.56 (unresolved peak, 1H).

15 **Methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-
 4-yl)propyl]-1-[2-(cycloheptylthio)ethyl]piperidine-3-
 carboxylate**

0.221 g of sodium borohydride is added
 portionwise at a temperature in the region of 20°C,
 20 with stirring under an inert atmosphere, to a mixture
 of 2.5 g of methyl (3R,4R)-4-[3-oxo-3-(6-methoxy-
 quinolin-4-yl)propyl]-1-[2-(cycloheptylthio)ethyl]-
 piperidine-3-carboxylate in 20 cm^3 of methanol. After
 addition, the mixture is stirred for 2 hours at a
 25 temperature in the region of 20°C. The reaction mixture
 is evaporated under reduced pressure (5 kPa) and then

the residue obtained is taken up in 50 cm³ of dichloromethane and 30 cm³ of a saturated aqueous ammonium chloride solution. The organic phase, separated by settling, is dried over magnesium sulfate, filtered and then concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 2.5 g of a product are obtained, which product is purified by chromatography at atmospheric pressure under a column of silica gel (particle size 20-45 µm; diameter 4 cm; mass 150 g), elution being carried out with a dichloromethane/methanol (95/5 by volume) mixture and 50-cm³ fractions being collected. The fractions comprising the desired product are combined and then evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 1.95 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cycloheptylthio)ethyl]piperidine-3-carboxylate are obtained in the form of a viscous oil. Infrared spectrum (CCl₄): 3500-3100 cm⁻¹, alcohol OH v, 2930 cm⁻¹, aliphatic CH v, 2805, 2772 cm⁻¹, N(CH₂)₃ CH₂ v, 1736 cm⁻¹, ester C=O v, 1242, 1228 cm⁻¹, ether C-O v, 1034 cm⁻¹, alcohol C-O v, 854 cm⁻¹, quinoline CH γ

Methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cycloheptylthio)ethyl]piperidine-3-carboxylate

A mixture composed of 3.06 g of methyl

(3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]-piperidine-3-carboxylate, 1.79 g of 2-chloroethyl cycloheptyl sulfide, 5.39 g of potassium carbonate and 1.29 g of potassium iodide in 75 cm³ of acetonitrile is
 5 heated with stirring and under an inert atmosphere at a temperature in the region of 72°C for 24 hours. After cooling to approximately 20°C, the reaction mixture is filtered through celite and the filtrate is concentrated under reduced pressure (5 kPa) at a
 10 temperature in the region of 40°C. The residue obtained is purified by chromatography at atmospheric pressure on a column of silica gel (particle size 20-45 µm; diameter 4 cm; mass 150 g), elution being carried out with an ethyl acetate/methanol (95/5 by volume) mixture
 15 and 50-cm³ fractions being collected. The fractions comprising the desired product are combined and then concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 2.6 g of methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]-1-
 20 [2-(cycloheptylthio)ethyl]piperidine-3-carboxylate are obtained in the form of a viscous oil.

Infrared spectrum (CCl₄): 2930 cm⁻¹, aliphatic CH v, 2805, 2767 cm⁻¹, N(CH₂)₃ CH₂ v, 1740 cm⁻¹, ester C=O v, 1693 cm⁻¹, ketone C=O v, 1241, 1228 cm⁻¹, ether C-O v,
 25 850 cm⁻¹, quinoline CH γ

2-Chloroethyl cycloheptyl sulfide

5.11 cm³ of thionyl chloride are added dropwise, with stirring and under an inert atmosphere, at a temperature in the region of 20°C to a solution of 1.74 g of 2-hydroxyethyl cycloheptyl sulfide in 30 cm³ of chloroform. After the addition, the reaction mixture is first stirred for 15 minutes at the same temperature and then for 1 hour at a temperature in the region of 60°C. The mixture is evaporated to dryness under reduced pressure (5 kPa) at a temperature in the region of 40°C, then the residue obtained is taken up [lacuna] with 2 times 50 cm³ of water and then once with 50 cm³ of a saturated sodium hydrogencarbonate solution. The ethereal solution, separated by settling, is dried over magnesium sulfate, filtered and then concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 1.89 g of 2-chloroethyl cycloheptyl sulfide are obtained in the form of an oil.

Infrared spectrum (CCl₄): 2930, 2855 cm⁻¹, CH₂ v, 1459, 1445 cm⁻¹, CH₂ δ, 1210 cm⁻¹, C-Cl ω, 702 cm⁻¹, C-Cl v

2-Hydroxyethyl cycloheptyl sulfide.

2.32 g of 2-mercaptoethanol, dissolved beforehand in 10 cm³ of dimethylformamide, are slowly added, under an inert atmosphere and at a temperature in the region of 20°C, to a stirred suspension of 0.91 g of 60% sodium hydride in 10 cm³ of anhydrous dimethylformamide. After stirring for 20 minutes, 3.5 g

of bromocycloheptane, dissolved in 10 cm³ of dimethylformamide, are added. The reaction is brought to completion by stirring at a temperature in the region of 20°C for 1 hour 30 minutes. The reaction mixture is poured onto 150 cm³ of water to which have been added 100 cm³ of diethyl ether. The ethereal phase is separated by settling and the aqueous phase is extracted once with 50 cm³ of diethyl ether. The organic phases are combined and then washed with 2 times 100 cm³ of water, dried over magnesium sulfate, filtered and concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 3.2 g of 2-hydroxyethyl cycloheptyl sulfide are obtained in the form of an oil with a yellow color.

Infrared spectrum (CH₂Cl₂): 3608, 3457 cm⁻¹, OH (free and bonded) v, 2927, 2855 cm⁻¹, aliphatic CH v, 1057 cm⁻¹, CO v

Example 41

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetic acid dihydrochloride

A stirred mixture of 0.598 g of methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetate in 13 cm³ of dioxane with 1 cm³ of 5N aqueous sodium hydroxide solution, in an inert atmosphere, is heated at 60°C for

20 hours. After evaporating the reaction mixture under reduced pressure (5 kPa) at a temperature in the region of 50°C, 1 g of a yellow foam is obtained, which product is purified by chromatography at atmospheric
5 pressure on a column of silica gel (particle size 20-45 µm; diameter 3 cm; silica height 21 cm), elution being carried out with a chloroform/methanol/28% aqueous ammonia (12/3/0.5 by volume) mixture and 50-cm³ fractions being collected. Fractions 4 to 7 are
10 combined and then evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 0.495 g of a product is obtained, which product is dissolved in 5 cm³ of dichloromethane. After adding 10 cm³ of a 1N solution of hydrochloric acid in ether, a pasty
15 precipitate is obtained, which precipitate is diluted with 100 cm³ of diethyl ether. The mixture is stirred at a temperature in the region of 20°C. The white suspension obtained is filtered off and washed with 3 times 30 cm³ of diethyl ether. The resulting white
20 solid is dried under reduced pressure (10 kPa) at a temperature in the region of 40°C until a constant weight is obtained. 0.55 g of (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)-ethyl]piperidine-3-acetic acid dihydrochloride is
25 obtained in the form of a white solid melting while softening in the region of 200°C.

¹H NMR spectrum (400 MHz, d6-(CD₃)₂SO at a temperature of 383 K, δ in ppm): from 1.40 to 1.95 (mt, 8H), 2.30 (dd, J = 16 and 5.5 Hz, 1H), from 2.45 to 2.60 (mt, 1H), from 3.00 to 3.35 (mt, 10H), 4.00 (s, 3H), 7.08
 5 (dd, J = 5 and 3.5 Hz, 1H), 7.28 (broad d, J = 3.5 Hz, 1H), from 7.45 to 7.55 (mt, 2H), 7.56 (dd, J = 9.5 and 3 Hz, 1H), 7.62 (broad d, J = 7 Hz, 1H), 8.15 (d, J = 9.5 Hz, 1H), 8.75 (d, J = 5 Hz, 1H).

Example 41A

10 **Methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetate**

4.06 g of potassium carbonate, followed by 1 g of potassium iodide, are added, under an inert atmosphere, to a stirred solution of 2.1 g of methyl
 15 (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetate and of 1.15 g of 2-(2-chloroethylthio)thiophene in 50 cm³ of acetonitrile. The mixture is heated at 70°C for 20 hours. After cooling to a temperature in the region of 20°C, the reaction mixture
 20 is diluted with 100 cm³ of ethyl acetate and 100 cm³ of water. After stirring the mixture and separating the organic phase by settling, the aqueous phase is extracted with 2 times 50 cm³ of ethyl acetate. The organic phases are combined and extracted with 3 times
 25 50 cm³ of N aqueous hydrochloric acid. The acid solutions are combined and brought to pH 8 with a

sufficient amount of sodium hydrogencarbonate. The resulting oil released is extracted with 3 times 100 cm³ of ethyl acetate. The combined extracts are dried over magnesium sulfate, filtered and evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 1.5 g of an oil with an orange color are obtained, which product is purified by chromatography at atmospheric pressure on a column of silica gel (particle size 20-45 µm; diameter 3 cm; silica height 55 cm), elution being carried out with pure ethyl acetate and 50-cm³ fractions being collected. Fractions 12 to 30 are combined and then evaporated under the same conditions as above. 0.60 g of methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetate is obtained in the form of a colorless viscous oil.

Infrared spectrum (CH₂Cl₂): 2933, 2861 cm⁻¹, aliphatic CH v, 2803, 2766 cm⁻¹, N(CH₂)₃ CH₂ v, 1730 cm⁻¹, ester C=O v, 1242, 1277 cm⁻¹, ether C-O v, 847 cm⁻¹, quinoline CH γ

Methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetate was prepared according to the procedure described in Example 36.

Example 43

(3R,4R)-4-[3-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclohexylthio)ethyl]piperidine-3-carboxylic acid, diastereoisomer A, and (3R,4R)-4-[3-hydroxy-3-(6-

methoxyquinolin-4-yl)propyl]-1-[2-(cyclohexylthio)-ethyl]piperidine-3-carboxylic acid, diastereoisomer B

5 g of (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclohexylthio)-ethyl]piperidine-3-carboxylic acid, dissolved in 100 cm³ of a dichloromethane/ethanol/tetrahydrofuran (65/15/20 by volume) mixture, are chromatographed on a column with a length of 35 cm and diameter of 8 cm, packed with 1.200 kg of Kromasil® silica (particle size 10 µm). Elution is carried out using the same mixture as above. The flow rate is 150 cm³ per minute for the first 30 minutes and then 200 cm³ per minute subsequently. Detection is carried out using ultraviolet radiation at 280 nm. This operation results in two diastereoisomers being obtained. The fractions corresponding to the first are concentrated to dryness under reduced pressure (5 kPa) at a temperature in the region of 40°C. A solid residue is obtained, which residue is taken up in diethyl ether, filtered off and dried in the air at a temperature in the region of 20°C. 1.5 g of (3R,4R)-4-[3-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclohexylthio)-ethyl]piperidine-3-carboxylic acid, diastereoisomer A ($[\alpha]_D^{20} = -47.1^\circ \pm 0.9$, in dichloromethane at 0.5%), are obtained in the form of a solid with a beige color. The fractions corresponding to the second diastereoisomer

are treated as above. 1.7 g of (3R,4R)-4-[3-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclohexylthio)ethyl]piperidine-3-carboxylic acid, diastereoisomer B ($[\alpha]_D^{20} = +98.7^\circ \pm 1.6$, in

5 dichloromethane at 0.5%), are obtained in the form of a solid with a beige color.

Diastereoisomer A: ^1H NMR spectrum (300 MHz, $\text{d}_6\text{-(CD}_3)_2\text{SO}$, δ in ppm): from 1.10 to 2.05 (mts, 17H), 2.33 (very broad t, $J = 10$ Hz, 1H), 2.45 (broad d, $J =$
10 10 Hz, 1H), 2.59 (unresolved peak, 1H), from 2.60 to 2.80 (mt, 5H), 2.90 (broad d, $J = 10$ Hz, 1H), 3.06 (broad d, $J = 10$ Hz, 1H), 3.96 (s, 3H), 5.22 (very broad d, $J = 7$ Hz, 1H), from 5.40 to 5.70 (broad unresolved peak, 1H), from 7.30 to 7.45 (mt, 2H), 7.57
15 (d, $J = 4.5$ Hz, 1H), 7.94 (d, $J = 9$ Hz, 1H), 8.72 (d, $J = 4.5$ Hz, 1H), from 12.50 to 13.40 (very broad unresolved peak, 1H).

Diastereoisomer B: ^1H NMR spectrum (300 MHz, $\text{d}_6\text{-(CD}_3)_2\text{SO}$, δ in ppm): from 1.10 to 2.00 (mts, 17H), 2.33
20 (mt, 1H), from 2.40 to 2.55 (mt, 1H), 2.57 (broad s, 1H), from 2.60 to 2.80 (mt, 5H), 2.82 (mt, 1H), 2.99 (mt, 1H), 3.92 (s, 3H), 5.25 (mt, 1H), from 5.40 to 5.70 (broad unresolved peak, 1H), from 7.35 to 7.45 (mt, 2H), 7.53 (d, $J = 4.5$ Hz, 1H), 7.94 (d, $J = 10$ Hz,
25 1H), 8.71 (d, $J = 4.5$ Hz, 1H), from 12.40 to 13.50 (very broad unresolved peak, 1H).

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclohexylthio)ethyl]-piperidine-3-carboxylic acid was prepared from its hydrochloride according to the following process.

5 **(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclohexylthio)ethyl]piperidine-3-carboxylic acid dihydrochloride**

0.4 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclohexylthio)-ethyl]piperidine-3-carboxylate is heated in 3 cm³ of
10 methanol to which has been added 0.48 cm³ of 5N aqueous sodium hydroxide solution under an inert atmosphere for 16 hours. After concentrating the reaction mass under reduced pressure (5 kPa) at a temperature in the region
15 of 40°C, the residue obtained is taken up in 5 cm³ of 6N hydrochloric acid and then 2.5 cm³ of methanol. The brown solution obtained is evaporated under the same conditions as above. The residue which results therefrom is taken up in 5 cm³ of diisopropylether,
20 filtered off and washed with 2 times 3 cm³ of the same solvent. The solid obtained is dried under reduced pressure (13 Pa) at a temperature in the region of 60°C. 0.37 g of (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclohexylthio)-ethyl]piperidine-3-carboxylic acid dihydrochloride is
25 obtained in the form of a solid with a brown color

melting while softening in the region of 170°C.

¹H NMR spectrum (400 MHz, d₆-(CD₃)₂SO, at a temperature of 383 K, δ in ppm). A mixture of two diastereoisomers is observed:

- 5 from 1.20 to 2.25 and from 2.80 to 3.40 (mts, 25H),
 3.28 (t, J = 8 Hz, 2H), 4.00 (s, 3H), 5.36 (mt, 1H),
 from 7.50 to 7.65 (mt, 2H), 7.70 (mt, 1H), 8.13 (broad
 d, J = 9 Hz, 1H), 8.81 (d, J = 5 Hz, 1H).

**Methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-
 10 4-yl)propyl]-1-[2-(cyclohexylthio)ethyl]piperidine-3-
 carboxylate**

- A stirred mixture of 0.54 g of methyl
 (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-
 yl)propyl]piperidine-3-carboxylate, 0.295 g of
 15 2-chloroethyl cyclohexyl sulfide, 0.23 g of potassium
 carbonate and 0.27 g of potassium iodide in 9 cm³ of
 acetonitrile and 1 cm³ of methanol is brought to a
 temperature in the region of the boiling point under an
 inert atmosphere for 20 hours. The reaction mixture is
 20 concentrated under reduced pressure (5 kPa) at a
 temperature in the region of 40°C. The residue obtained
 is purified by chromatography under an argon pressure
 of 80 kPa on a column of silica gel (particle size
 40-63 μm; diameter 3.5 cm; height 35 cm), elution being
 25 carried out with a dichloromethane/methanol (95/5 by
 volume) mixture and 35-cm³ fractions being collected.

Fractions 23 to 40 are combined and then concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 0.4 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-

- 5 (cyclohexylthio)ethyl]piperidine-3-carboxylate is obtained in the form of a lacquer with a brown color. Infrared spectrum (CCl₄): 3600-3200 cm⁻¹, OH v, 2932, 2854 cm⁻¹, aliphatic CH v, 1736 cm⁻¹, C=O v, 1242 cm⁻¹, ether C-O v

10 **Example 44**

(3R,4R)-4-[3-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-carboxylic acid, diastereoisomer A, and (3R,4R)-4-[3-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-carboxylic acid, diastereoisomer B

- 15 3 g of (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-carboxylic acid, dissolved in 100 cm³ of a dichloromethane/methanol/acetonitrile (85/8/7 by volume) mixture, are chromatographed on a column with a length of 35 cm and a diameter of 8 cm packed with 1.200 kg of Kromasil® silica (particle size 10 µm). Elution is carried out using the same mixture as above. Detection is carried out using ultraviolet radiation at 20 280 nm. This operation results in two diastereoisomers being obtained. The fractions corresponding to the

first are concentrated to dryness under reduced pressure (5 kPa) at a temperature in the region of 40°C. A solid residue is obtained, which residue is dried under reduced pressure (23 Pa) at a temperature in the region of 20°C. 0.612 g of (3R,4R)-4-[3-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-carboxylic acid, diastereoisomer A ($[\alpha]_D^{20} = -67.5^\circ \pm 1.3$, in dichloromethane at 0.5%), is obtained in the form of a foam with a white color. The fractions corresponding to the second diastereoisomer are treated as above. 0.596 g of (3R,4R)-4-[3-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-carboxylic acid, diastereoisomer B ($[\alpha]_D^{20} = +106.0^\circ \pm 1.6$, in dichloromethane at 0.5%), is obtained in the form of a foam with a white color.

Diastereoisomer A: ^1H NMR spectrum (300 MHz, $\text{d}_6\text{-(CD}_3)_2\text{SO}$, δ in ppm): from 1.40 to 1.95 (mt, 7H), 2.40 (mt, 1H), from 2.50 to 2.60 (mt, 1H), from 2.60 to 2.80 (mt, 2H), 2.90 (unresolved peak, 1H), 3.63 (s, 2H), 3.94 (s, 3H), 5.24 (mt, 1H), 5.52 (mt, 1H), 7.08 (dd, $J = 5$ and 4 Hz, 1H), 7.31 (dd, $J = 4$ and 1 Hz, 1H), 7.35 (d, $J = 3$ Hz, 1H), 7.40 (dd, $J = 9$ and 3 Hz, 1H), 7.56 (d, $J = 4.5$ Hz, 1H), 7.59 (dd, $J = 5$ and 1 Hz, 1H), 7.95 (d, $J = 9$ Hz, 1H), 8.71 (d, $J = 4.5$ Hz, 1H).

Diastereoisomer B: ^1H NMR spectrum (300 MHz,

d₆-(CD₃)₂SO, δ in ppm): from 1.20 to 1.95 (mt, 7H), 2.38 (mt, 1H), from 2.50 to 2.75 (mt, 3H), 2.71 (unresolved peak, 1H), 3.58 (s, 2H), 3.90 (s, 3H), 5.25 (mt, 1H), 5.52 (mt, 1H), 7.07 (dd, J = 5 and 3.5 Hz, 1H), 7.29 (broad d, J = 3.5 Hz, 1H), from 7.30 to 7.45 (mt, 2H), 7.53 (d, J = 4.5 Hz, 1H), 7.58 (broad d, J = 5 Hz, 1H), 7.94 (d, J = 10 Hz, 1H), 8.70 (d, J = 4.5 Hz, 1H).

Example 45

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(5-chlorothien-2-yl)]piperidine-3-carboxylic acid

A solution of 0.460 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(5-chlorothien-2-yl)]piperidine-3-carboxylate in 5 cm³ of dioxane to which has been added 0.51 cm³ of a 5N aqueous sodium hydroxide solution is stirred at a temperature in the region of 60°C for 48 hours. After a further addition of 1 cm³ of 5N sodium hydroxide solution, the mixture is again heated at a temperature in the region of 70°C for 72 hours. The reaction mixture is evaporated under reduced pressure (5 kPa) at a temperature in the region of 45°C and then the residue obtained is purified by chromatography under a nitrogen pressure of 40 kPa on a column of silica gel (particle size 40-63 μm; diameter 3 cm; silica height 27 cm), elution being carried out with a dichloro-

methane/methanol/28% aqueous ammonia (14/4/0.6 by volume) mixture and 15-cm³ fractions being collected. Fractions 7 to 16 are evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 0.30 g
 5 of (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(5-chlorothiophen-2-yl)]piperidine-3-carboxylic acid is obtained in the form of a foam with a white color.

¹H NMR spectrum (300 MHz, d₆-(CD₃)₂SO, δ in ppm). A
 10 mixture of two diastereoisomers is observed:
 from 1.40 to 3.10 (mts, 16H), 3.92 and 3.95 (2 s, 3H in all), 5.23 (mt, 1H), 5.50 (mt, 1H), from 7.05 to 7.15 (mt, 2H), from 7.30 to 7.45 (mt, 2H), 7.52 and 7.54 (2 d, J = 5 Hz, 1H in all), 7.94 (mt, 1H), 8.70 (d,
 15 J = 5 Hz, 1H).

Methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(5-chlorothiophen-2-yl)]piperidine-3-carboxylate

A solution of 1 g of methyl (3R,4R)-4-[3-
 20 (R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-piperidine-3-carboxylate in 40 cm³ of acetonitrile and 10 cm³ of methanol is stirred at a temperature in the region of 20°C and then 1.16 g of potassium carbonate and 0.5 g of potassium iodide are added. 1 g of
 25 2-chloro-5-(2-chloroethylthio)thiophene and 10 cm³ of acetonitrile are added to the suspension obtained. The

mixture is stirred for 72 hours at a temperature in the region of 80°C. The reaction mass is poured onto 75 cm³ of ethyl acetate and then washed with 3 times 70 cm³ of water. The organic phase is dried over sodium sulfate, 5 filtered and evaporated under reduced pressure (5 kPa) at a temperature in the region of 45°C. The residue obtained is purified by chromatography under a nitrogen pressure of 40 kPa on a column of silica gel (particle size 20-40 µm; diameter 3.5 cm; silica height 31 cm), 10 elution being carried out with ethyl acetate and 30-cm³ fractions being collected. Fractions 24 to 52 are combined and concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 0.48 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6- 15 methoxyquinolin-4-yl)propyl]-1-[2-(5-chlorothiophen-2-yl)]piperidine-3-carboxylate is obtained in the form of an oil with a brown color.

Mass spectrum: (CI) m/z, 535 MH⁺

2-Chloro-5-(2-chloroethylthio)thiophene

20 28 cm³ of a 5N aqueous sodium hydroxide solution are added, with stirring, to a solution, cooled to a temperature in the region of 5°C, of 17.9 g of 2-chloro-5-thiophenethiol in 30 cm³ of 1-chloro-2-bromoethane and then the temperature is allowed to 25 return to the region of 20°C, while stirring is continued for 16 hours. The reaction mixture is diluted

with 300 cm³ of ethyl acetate and washed with 3 times
150 cm³ of water. The organic solution is dried over
sodium sulfate, filtered and evaporated under reduced
pressure (5 kPa) at a temperature in the region of
5 45°C. 20.6 g of 2-chloro-5-(2-chloroethylthio)thiophene
are obtained in the form of an oil with a brown color.
Mass spectrum: DCI m/z = 535 MH⁺

2-Chloro-5-thiophenethiol can be prepared
according to E. Jones and M. Moodie, Tetrahedron, 1965,
10 vol. 21, 1333-1336.

Example 46

**(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-
fluoro-3-phenylpropyl]piperidine-3-carboxylic acid**

A mixture of 0.4 g of methyl (3R,4R)-4-[3-(6-
15 methoxyquinolin-4-yl)propyl]-1-[3-(R,S)-fluoro-3-
phenylpropyl]piperidine-3-carboxylate and 0.18 g of
lithium hydroxide monohydrate in 2 cm³ of water and
10 cm³ of acetone is stirred for 3 days at a temperature
in the region of 20°C and then evaporated under reduced
20 pressure (5 kPa) at a temperature in the region of
40°C. The residue obtained is purified by
chromatography under an argon pressure of 50 kPa on a
column of silica gel (particle size 20-45 µm; diameter
3 cm; 50 g), elution being carried out with a
25 dichloromethane/methanol (95/5 by volume) mixture and a
fraction of 910 cm³ being first collected. Elution is

then carried out with a dichloromethane/methanol (90/10 by volume) mixture and 13-cm³ fractions being collected. Fractions 47 to 69 are combined and then evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. The evaporation residue is taken up in dichloromethane, filtered and concentrated under the same conditions as above. The product obtained is stirred for 10 minutes in 10 cm³ of diisopropyl ether. The crystals are filtered off and washed with 1 times 5 cm³ of diisopropyl ether and 3 times 5 cm³ of pentane. 0.102 g of (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[3-fluoro-3-phenylpropyl]piperidine-3-carboxylic acid is obtained in the form of a solid with a gray color melting at 60°C which corresponds to one of the diastereoisomers.

$[\alpha]_D^{20} = +37.5 \pm 0.9$, in methanol at 0.5%.

¹H NMR spectrum (300 MHz, d₆-(CD₃)₂SO, δ in ppm): from 1.45 to 3.10 (mts, 16H), 3.02 (broad t, J = 7 Hz, 2H), 4.04 (s, 3H), 5.59 (mt, J_{HF} = 48 Hz, 1H), 7.32 (d, J = 4.5 Hz, 1H), from 7.35 to 7.50 (mt, 7H), 7.42 (d, J = 9 Hz, 1H), 8.62 (d, J = 4.5 Hz, 1H).

Methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(R,S)-fluoro-3-phenylpropyl]piperidine-3-carboxylate

0.425 cm³ of diethylaminosulfur trifluoride is added, under an inert atmosphere at a temperature in the region of 20°C, to a stirred solution of 1.18 g of

methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(R,S)-hydroxy-3-phenylpropyl]piperidine-3-carboxylate in 17.7 cm³ of dichloromethane. After stirring for 3 hours, the mixture is poured onto 32 cm³ of a saturated aqueous sodium hydrogencarbonate solution. 15 cm³ of dichloromethane are added and then the mixture is stirred for a further 10 minutes. After separating by settling, the organic phase is separated off, while the aqueous is extracted with 3 times 10 cm³ of dichloromethane. The organic extracts are combined, washed with 3 times 20 cm³ of water, dried over sodium sulfate, filtered and concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 1.11 g of residue are obtained, which product is purified by chromatography under an argon pressure of 50 kPa on a silica column (particle size 20-45 µm; diameter 2.8 cm; 45 g of silica), elution being carried out with an ethyl acetate/methanol (98/2 by volume) mixture and 15-cm³ fractions being collected. Fractions 10 to 20 are combined and then evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 0.6 g of methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(R,S)-fluoro-3-phenylpropyl]-piperidine-3-carboxylate is obtained in the form of thick oil with a light yellow color.

Infrared spectrum (CH₂Cl₂): 2951, 1732, 1621, 1509,

1473, 1227, 1167, 1031 and 848 cm^{-1}

Methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(R,S)-hydroxy-3-phenylpropyl]piperidine-3-carboxylate can be prepared by analogy with the method described in Example 2.

Example 47

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(pyridin-2-ylthio)ethyl]piperidine-3-carboxylic acid trihydrochloride

1.33 cm^3 of a 5N aqueous sodium hydroxide solution are added, with stirring and under a nitrogen atmosphere, to a solution, maintained at a temperature in the region of 20°C , of 0.33 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(pyridin-2-ylthio)ethyl]piperidine-3-carboxylate in 6.66 cm^3 of methanol. The solution obtained is heated in the region of 60°C for 16 hours. The reaction mass is evaporated to dryness under reduced pressure (5 kPa) at a temperature in the region of 60°C . The residue obtained is taken up in 3.4 cm^3 of distilled water and then 3.43 cm^3 of 36% concentrated aqueous hydrochloric acid are added. A solution with a yellow color is obtained, which solution is evaporated under the same conditions as above. The evaporation residue is taken up in 10 cm^3 of a dichloromethane/methanol (80/20 by volume) mixture. The insoluble material which results

therefrom is filtered off and washed with 2 times 2.5 cm³ of a dichloromethane/methanol (90/10 by volume) mixture. The filtrate is evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 0.40 g of (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(pyridin-2-ylthio)ethyl]piperidine-3-carboxylic acid trihydrochloride is obtained in the form of a solid with a beige color melting at 155°C.

¹H NMR spectrum (400 MHz, d₆-(CD₃)₂SO, at a temperature of 383 K, δ in ppm). A mixture of two diastereoisomers is observed:

from 1.50 to 2.30 and from 3.15 to 3.65 (mts, 16H), 4.00 (s, 3H), 5.38 (mt, 1H), 7.18 (broad dd, J = 8 and 5 Hz, 1H), 7.38 (d, J = 8 Hz, 1H), from 7.55 to 7.65 (mt, 2H), 7.69 (t, J = 8 and 2 Hz, 1h), 7.80 (mt, 1H), 8.20 (broad d, J = 10 Hz, 1H), 8.48 (dmt, J = 5 Hz, 1H), 8.35 (broad d, J = 5 Hz, 1H).

Methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(pyridin-2-ylthio)ethyl]piperidine-3-carboxylate

A stirred solution of 0.77 g of methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(pyridin-2-ylthio)ethyl]piperidine-3-carboxylate in 15 cm³ of methanol is cooled to a temperature in the region of 0°C under an inert atmosphere. 0.063 g of

sodium borohydride is added and then, after 15 minutes, the temperature is brought back to the region of 20°C for 16 hours. After adding 5 cm³ of a saturated aqueous ammonium chloride solution, the mixture is stirred for 5 10 minutes and then evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. The residue obtained is taken up in 10 cm³ of a dichloromethane/methanol (95/5 by volume) mixture and then filtered. The insoluble material is washed with 10 2 times 5 cm³ of the same mixture. The filtrate is evaporated under the same conditions as above. A foam is obtained, which product is purified by chromatography under a nitrogen pressure of 100 kPa on a column of silica gel (particle size 40-63 µm; 15 diameter 3.5 cm; silica height 35 cm), elution being carried out first with a dichloromethane/methanol (96/4 by volume) mixture and 35-cm³ fractions being collected. After the first 50 fractions, elution is carried out with a dichloromethane/methanol (90/10 by volume) 20 mixture. Fractions 61 to 90 are combined and then evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 0.33 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(pyridin-2-ylthio)ethyl]piperidine-3- 25 carboxylate is obtained in the form of a lacquer with a beige color.

Infrared spectrum (CH_2Cl_2): 2596, 2951, 1622, 1579, 1508, 1455, 1415, 1242, 1228, 1125, 1031, 856 and 831 cm^{-1}

Methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(pyridin-2-ylthio)ethyl]piperidine-3-carboxylate

A mixture of 1.35 g of methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]-1-(2-chloroethyl)piperidine-3-carboxylate dihydrochloride in 20 cm^3 of acetonitrile is stirred at a temperature in the region of 20°C under an inert atmosphere. 1.37 g of potassium carbonate and 0.456 g of potassium iodide are added, followed by 0.367 g of 2-mercaptopyridine and 1 cm^3 of methanol. A red suspension is obtained, which suspension is heated at a temperature in the region of 80°C for 1 hour 30 minutes. After cooling the reaction mass to a temperature in the region of 20°C , the insoluble material is filtered off and washed with acetonitrile. The filtrate is evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C . The evaporation residue is purified by chromatography under a nitrogen pressure of 100 kPa on a column of silica gel (particle size $40\text{-}63\text{ }\mu\text{m}$; diameter 3.5 cm; silica height 35 cm), elution being carried out with an ethyl acetate/methanol (95/5 by volume) mixture and 35-cm^3 fractions being collected.

Fractions 19 to 40 are combined and then evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 0.77 g of methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(pyridin-2-

5 ylthio)ethyl]piperidine-3-carboxylate is obtained in the form of a viscous oil with a red color.

Infrared spectrum (CH₂Cl₂): 2952, 2809, 1733, 1692, 1620, 1580, 1455, 1415, 1243, 1125, 1029 and 853 cm⁻¹

Methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(pyridin-2-ylthio)ethyl]piperidine-3-carboxylate is prepared by analogy with the method described in Example 21.

Example 48

(3R,4R)-4-[3-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetic acid dihydrochloride, diastereoisomer A, and (3R,4R)-4-[3-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetic acid, diastereoisomer B

20 1.2 g of (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)-ethyl]piperidine-3-acetic acid is chromatographed on a column with a length of 35 cm and a diameter of 6 cm packed with 700 g of Kromasil®-CN silica (particle size 25 10 µm). Elution is carried out using a dichloromethane/ethanol/triethylamine (98/2/0.1 by volume)

mixture. The flow rate is 70 cm³ per minute. Detection is carried out using ultraviolet radiation at 265 nm. After several preparative injections, the fractions corresponding to the diastereoisomer A are collected.

- 5 These fractions are concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 0.34 g of a product is obtained, which product is salified in the following way: 0.3 g of this product is taken up in 30 cm³ of ether, filtered and then dissolved in 25 cm³
- 10 of acetone. The solution obtained is poured onto 5 cm³ of a 5N solution of hydrochloric acid in ether. After concentrating the mixture under reduced pressure under the same conditions as above, the residue obtained is taken up in 20 cm³ of water and the solution is
- 15 lyophilized. 0.190 g of (3R,4R)-4-[3-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)-ethyl]piperidine-3-acetic acid dihydrochloride, diastereoisomer A, is obtained in the form of a lyophilizate with an orange color. During the
- 20 preparative separation of the two diastereoisomers, the mixture fractions are concentrated as above for retreatment. The separating conditions are as follows: column with a length of 35 cm and diameter of 6 cm packed with 700 g of Kromasil® silica (particle size
- 25 10 µm). Elution is carried out using a dichloromethane/acetonitrile/methanol/triethylamine

(60/40/4/0.1 by volume) mixture. The flow rate is 80 cm³/minute. After 3 preparative injections, the fractions corresponding to the diastereoisomer B are collected. These fractions are concentrated under the same conditions as above. 0.34 g of (3R,4R)-4-[3-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetic acid, diastereoisomer B, is obtained in the form of a foam with a yellow color ($[\alpha]_D^{20} = +55.4 \pm 1.1$, in dichloro-
methane at 0.5%).

Diastereoisomer A: ¹H NMR spectrum (400 MHz, d6-(CD₃)₂SO with addition of a few drops of d4-CD₃COOD at a temperature of 373 K, δ in ppm): from 1.40 to 1.90 and from 2.20 to 2.55 (mts, 10H), from 2.95 to 3.35 (mt, 8H), 3.99 (s, 3H), 5.40 (mt, 1H), 7.07 (dd, J = 5.5 and 3.5 Hz, 1H), 7.27 (broad d, J = 3.5 Hz, 1H), from 7.55 to 7.65 (mt, 3H), 7.85 (d, J = 4.5 Hz, 1H), 8.17 (d, J = 9 Hz, 1H), 8.88 (d, J = 4.5 Hz, 1H).

Diastereoisomer B: ¹H NMR spectrum (250 MHz, d6-(CD₃)₂SO, δ in ppm): from 1.20 to 2.80 (mts, 16H), 2.88 (broad t, J = 7 Hz, 2H), 3.92 (s, 3H), 5.27 (mt, 1H), 7.04 (dd, J = 5.5 and 3.5 Hz, 1H), 7.17 (dd, J = 3.5 and 1.5 Hz, 1H), from 7.30 to 7.45 (mt, 2H), 7.54 (d, J = 4.5 Hz, 1H), 7.60 (dd, J = 5.5 and 1.5 Hz, 1H), 7.94 (d, J = 9.5 Hz, 1H), 8.71 (d, J = 4.5 Hz, 1H).

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-

yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetic acid

A mixture of 0.22 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetate dihydrochloride in 5 cm³ of dioxane, to which had been added 0.683 cm³ of 5N aqueous sodium hydroxide solution, is stirred for 20 hours at a temperature in the region of 60°C. After evaporating under reduced pressure (5 kPa) at a temperature in the region of 40 °C, the residue obtained is purified by chromatography at atmospheric pressure on a column of silica gel (particle size 20-45 µm; diameter 1 cm; silica volume 20 cm³), elution being carried out with a chloroform/methanol/aqueous ammonia (12/3/1 by volume) mixture. Fractions 1 to 3 are combined and concentrated under the above conditions. A product is obtained, which product is dried in an oven to constant weight under reduced pressure (10 Pa) at a temperature in the region of 40°C. 0.179 g of (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetic acid is obtained in the form of a white foam which is a mixture of two diastereoisomers.

¹H NMR spectrum (300 MHz, d6-(CD₃)₂SO, δ in ppm). A mixture of two diastereoisomers is observed:

from 1.15 to 2.80 (mts, 16H), 2.88 (broad t, $J = 7$ Hz, 2H), 3.91 and 3.92 (2s, 3H in all), 5.26 (unresolved peak, 1H), 7.04 (dd, $J = 5.5$ and 3.5 Hz, 1H), 7.16 (dd, $J = 3.5$ and 1 Hz, 1H), from 7.30 to 7.45 (mt, 2H), 7.54
 5 (mt, 1H), 7.60 (broad d, $J = 5.5$ Hz, 1H), 7.94 (d, $J = 9$ Hz, 1H), 8.70 (d, $J = 4.5$ Hz, 1H).

Methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetate dihydrochloride

10 1 drop of 5N aqueous sodium hydroxide solution and then, portionwise, 0.17 g of sodium borohydride are added, with stirring, to a solution, maintained at a temperature in the region of 20°C , of 0.84 g of methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-
 15 4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetate in 12 cm^3 of methanol. The mixture is stirred for 3 hours at a temperature in the region of 20°C . After adding 10 cm^3 of water, the methanol is evaporated under reduced pressure (5 kPa) at a temperature in the
 20 region of 40°C . The residue obtained is extracted with 2 times 20 cm^3 of dichloromethane and then the combined extracts are washed with 2 times 30 cm^3 of water, dried over magnesium sulfate, filtered and concentrated under reduced pressure (5 kPa) at a temperature in the region
 25 of 40°C . An oil was obtained, which oil is purified by chromatography at atmospheric pressure on a column of

silica gel (particle size 20-45 μm ; diameter 2.5 cm; silica volume 150 cm^3), elution being carried out with a dichloromethane/methanol (99/1 by volume) mixture. Fractions 56 to 115 are combined and then concentrated as above. An oil is obtained, the hydrochloride of which is prepared in the following way: the oil is dissolved in 20 cm^3 of diethyl ether and then poured onto 2 cm^3 of a 1N solution of hydrochloric acid in ether. The precipitate formed is filtered off and dried in an oven under reduced pressure (10 Pa) at a temperature in the region of 40°C. 0.3 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetate dihydrochloride is obtained in the form of a white solid.

^1H NMR spectrum (400 MHz, $\text{d}_6\text{-(CD}_3)_2\text{SO}$ at a temperature of 383 K, δ in ppm). A mixture of two diastereoisomers is observed:

from 1.40 to 2.00 and from 2.25 to 2.70 (mts, 10H in all), from 2.90 to 3.40 (unresolved peak, 4H), 3.27 (mt, 4H), 3.61 and 3.63 (2s, 3H in all), 4.00 (s, 3H), 5.38 (mt, 1H), 7.10 (dd, $J = 5$ and 3.5 Hz, 1H), 7.29 (broad d, $J = 3.5$ Hz, 1H), from 7.55 to 7.60 (mt, 2H), 7.65 (d, $J = 5$ Hz, 1H), 7.76 (mt, 1H), 8.16 (d, $J = 9.5$ Hz, 1H), 8.85 (d, $J = 4.5$ Hz, 1H).

Methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-

yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetate

1.5 g of 2-(2-chloroethylthio)thiophene, followed by 5.2 g of potassium carbonate and 2.5 g of potassium iodide, are added with stirring, at a temperature in the region of 20°C, to a solution of 2.8 g of methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetate in 60 cm³ of acetonitrile. The mixture is heated for 20 hours at a temperature in the region of the reflux temperature and then cooled to approximately 20°C. 130 cm³ of water and 50 cm³ of ethyl acetate are added to the reaction mixture. After separating the mixture by settling, the organic phase is washed with 150 cm³ of water, dried over magnesium sulfate, filtered and then concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. An oil is obtained, which oil is purified by chromatography at atmospheric pressure on a column of silica gel (particle size 20-45 µm; diameter 2.5 cm; silica volume 100 cm³), elution being carried out with a dichloromethane/methanol (95/5 by volume) mixture. A fraction of 30 cm³ is first collected, followed by approximately 10-cm³ fractions. Fractions 1 to 4 are combined and then evaporated as above. 2.3 g of a brown oil are obtained, which product is subjected a second time to purification by

chromatography at atmospheric pressure on a column of silica gel (particle size 20-45 μm ; diameter 2.5 cm; silica volume 300 cm^3), elution being carried out with a dichloromethane/methanol (99/1 by volume) mixture and approximately 10- cm^3 fractions being collected.

Fractions 21 to 30 are combined and then concentrated under the above conditions. 0.84 g of methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetate is obtained in the form of a pale yellow oil.

Infrared spectrum (CH_2Cl_2): 2937, 2806, 2765, 1731, 1693, 1620, 1505, 1243 and 849 cm^{-1}

Methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetate

A solution of 10.8 g of (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]-1-(tert-butyloxy-carbonyl)piperidine-3-acetic acid in 460 cm^3 of anhydrous methanol to which 4.3 cm^3 of concentrated sulfuric acid ($d = 1.83$) have been added is heated at a temperature in the region of 65°C with stirring for 2 hours. After cooling to approximately 20°C, the reaction mixture is evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C and then the residue obtained is taken up in 200 cm^3 of water and rendered alkaline by addition of sodium hydrogen-carbonate until a pH in the region of 8-9 is obtained.

The mixture is extracted with 4 times 200 cm³ of ethyl acetate. The aqueous phase is basified to a pH in the region of 11 by addition of the necessary amount of sodium carbonate. The mixture is extracted with 2 times
 5 200 cm³ of ethyl acetate. The organic extracts are combined, dried over magnesium sulfate, filtered and evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 6.84 g of methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]-
 10 piperidine-3-acetate are obtained in the form of an oil with a brown color.

Infrared spectrum (CCl₄): 2935, 2812, 1738, 1692, 1620, 1504, 1242, 1032 and 851 cm⁻¹

**(3R,4R)-4-[3-Oxo-3-(6-methoxyquinolin-4-yl)propyl]-1-
 15 (tert-butyloxycarbonyl)piperidine-3-acetic acid**

A solution of 0.85 g of potassium permanganate in 25 cm³ of water and 120 cm³ of acetone is added over approximately 1 hour, with stirring and at a temperature in the region of 25°C, to a solution
 20 of 1.2 g of (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]-1-(tert-butyloxycarbonyl)piperidine-3-acetaldehyde in 60 cm³ of acetone. The mixture is stirred for 3 hours at this same temperature and then cooled to approximately 10°C. A solution of 5 g of
 25 sodium sulfite in 200 cm³ of water is added to the reaction mixture and then the mixture obtained is

filtered through celite. The acetone of the filtrate is evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C and then the evaporation residue is taken up in 200 cm³ of water and washed with 200 cm³ of diethyl ether. The aqueous phase is separated by settling, acidified with citric acid in the solid state to a pH in the region of 3-4 and extracted with 200 cm³ of diethyl ether. The ethereal solution, separated by settling, is dried over magnesium sulfate, filtered and evaporated under the above conditions. 0.74 g of (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]-1-(tert-butyloxycarbonyl)piperidine-3-acetic acid is obtained in the form of a yellow solid.

Infrared spectrum (KBr): 2932, 2588, 1730, 1690, 1620, 1431, 1246, 1165 and 857 cm⁻¹

(3R,4R)-4-[3-Oxo-3-(6-methoxyquinolin-4-yl)propyl]-1-(tert-butyloxycarbonyl)piperidine-3-acetaldehyde

A mixture of 13.7 g of dimethyl sulfoxide in 65 cm³ of dichloromethane is slowly added, with stirring and under an inert atmosphere, to a solution, cooled to a temperature in the region of -60°C, of 8.3 cm³ of oxalyl chloride in 65 cm³ of dichloromethane. After stirring the mixture for 15 minutes, 10 g of (3R,4R)-3-(2-hydroxyethyl)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-(tert-butyloxycarbonyl)-

piperidine, dissolved in 65 cm³ of dichloromethane, are slowly added. After stirring the mixture for 30 minutes, 61.7 cm³ of triethylamine, dissolved in 65 cm³ of dichloromethane, are finally added dropwise. The
 5 mixture is stirred for a further 3 hours at approximately -60°C and then poured onto 400 cm³ of ice-cold water. After separating the mixture by settling, the organic phase is washed with 400 cm³ of a 10% (by mass) aqueous citric acid solution and then dried over
 10 magnesium sulfate, filtered and evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 9.95 g of (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]-1-(tert-butyloxycarbonyl)-piperidine-3-acetaldehyde are obtained in the form of
 15 an oil with a brown color.

Infrared spectrum (CCl₄): 2932, 2720, 1729, 1694, 1430, 1244, 1164 and 850 cm⁻¹

(3R,4R)-3-(2-Hydroxyethyl)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-(tert-butyloxycarbonyl)-
 20 **piperidine**

33.4 cm³ of triethylamineborane complex are added with stirring, at a temperature in the region of 20°C, to a solution of 52.6 g of (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]-1-(tert-butyloxycarbonyl)-
 25 3-vinylpiperidine in 500 cm³ of toluene and then the mixture is heated for 18 hours at a temperature in the

region of 110°C. After having concentrated the reaction mixture under reduced pressure (5 kPa) at a temperature in the region of 45°C, the residue obtained is taken up in 500 cm³ of tetrahydrofuran. The solution which

5 results therefrom has approximately 63 cm³ of water added over 20 minutes and then 47.5 g of sodium perborate are added portionwise over approximately 1 hour. The mixture is stirred for 4 hours at a temperature in the region of 20°C and then 300 cm³ of a

10 saturated ammonium chloride solution are added. The organic solution is separated by settling, dried over magnesium sulfate and concentrated under the same conditions as above. The residue obtained is purified by chromatography on a column of silica gel (particle

15 size 20-45 µm; diameter 9 cm; silica volume 2500 cm³), elution being carried out first with a dichloromethane/methanol (97.5/2.5 by volume) mixture and 1-liter fractions being collected. Fractions 1 to 17 are separated and then elution is carried out with a

20 dichloromethane/methanol (95/5 by volume) mixture, 1-liter fractions being collected. Fractions 30 to 35 are combined and, finally, elution is carried out with a dichloromethane/methanol (90/10 by volume) mixture, 1-liter fractions being collected. Fractions 36 to 41

25 are combined, while the combination of fractions 30 to 41 is evaporated under reduced pressure (5 kPa) at a

temperature in the region of 40°C. 20 g of (3R,4R)-3-(2-hydroxyethyl)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-(tert-butyloxycarbonyl)-piperidine are obtained in the form of an oil.

- 5 Infrared spectrum (CH₂Cl₂): 3612, 2480, 2937, 1680, 1432, 1243, 1163 and 859 cm⁻¹

(3R,4R)-4-[3-Oxo-3-(6-methoxyquinolin-4-yl)propyl]-1-(tert-butyloxycarbonyl)-3-vinylpiperidine

- 162 cm³ of triethylamine are added over
- 10 approximately 20 minutes, at a temperature in the region of 20°C, followed, over 2 hours, by 85 g of di-tert-butyl dicarbonate, dissolved in 300 cm³ of dichloromethane, to a stirred solution of 126 g of (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]-3-
- 15 vinylpiperidine in 1700 cm³ of dichloromethane. The mixture is stirred for 16 hours at a temperature in the region of 20°C and then 400 cm³ of water are added thereto. The organic phase is separated by settling, dried over magnesium sulfate, filtered and evaporated
- 20 under reduced pressure (5 kPa) at a temperature in the region of 40°C. An oily residue is obtained, which product is taken up in 1000 cm³ of ethyl acetate and is washed with 2 times 200 cm³ of water, once with 250 cm³ of a saturated aqueous citric acid solution and 2 times
- 25 with 200 cm³ of water. The organic solution is dried over magnesium sulfate, filtered and concentrated under

the above conditions. 148 g of (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]-1-(tert-butyloxycarbonyl)-3-vinylpiperidine are obtained in the form of an oil with a brown color.

- 5 Infrared spectrum (CH_2Cl_2): 2979, 1683, 1431, 1246, 1164 and 853 cm^{-1}

(3R,4R)-4-[3-Oxo-3-(6-methoxyquinolin-4-yl)propyl]-3-vinylpiperidine can be obtained by application of the method disclosed in Patent

- 10 Application FR 2,354,771.

Example 49

- (3R,4R)-1-[2-(3-Fluorophenylthio)ethyl]-4-[3-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetic acid, diastereoisomer A, and (3R,4R)-1-[2-(3-fluorophenylthio)ethyl]-4-[3-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetic acid, diastereoisomer B
- 15

- 0.7 g of (3R,4R)-1-[2-(3-fluorophenylthio)ethyl]-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetic acid is chromatographed on a column with a length of 35 cm and a diameter of 6 cm packed with 700 g of Kromasil® silica (particle size $10\text{ }\mu\text{m}$). Elution is carried out using a dichloromethane/acetonitrile/methanol/triethylamine
- 20
- (56/40/4/0.5 by volume) mixture. The flow rate is $70\text{ cm}^3/\text{min}$. Detection is carried out using ultraviolet
- 25

radiation at 265 nm. Several preparative injections have led to the separation of the 2 diastereoisomers. The fractions corresponding to the first, diastereoisomer A, are concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. The crystalline mass obtained is dried in an oven under reduced pressure (10 Pa) at a temperature in the region of 20°C. 0.185 g of (3R,4R)-1-[2-(3-fluorophenylthio)ethyl]-4-[3-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetic acid, diastereoisomer A, is obtained in the form of a solid with an off-white color ($[\alpha]_D^{20} = -55.9 \pm 1.2$, in methanol at 0.5%). The mixture fractions are concentrated under the same conditions as above for retreatment. Fresh injections are carried out in order to obtain the second diastereoisomer. Three preparative injections make it possible to obtain the fractions corresponding to diastereoisomer B. These fractions are concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. The crystalline mass obtained is dried in an oven under reduced pressure (10 Pa) at a temperature in the region of 20°C. 0.200 g of (3R,4R)-1-[2-(3-fluorophenylthio)ethyl]-4-[3-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetic acid, diastereoisomer B, is obtained in the form of a solid with an off-white color ($[\alpha]_D^{20} = +41.0 \pm 1.0$, in

methanol at 0.5%).

Diastereoisomer A: ^1H NMR spectrum (400 MHz, $\text{d}_6\text{-(CD}_3)_2\text{SO}$, δ in ppm): from 1.15 to 1.85 and from 1.95 to 2.20 (2 series of mts, 11H in all), from 2.40 to 2.60 (mt, 3H), 2.65 to 2.80 (mt, 2H), 3.08 (t, $J = 7$ Hz, 2H), 3.92 (s, 3H), 5.27 (mt, 1H), 5.52 (unresolved peak, 1H), 6.98 (double t, $J = 8.5$ and 2.5 Hz, 1H), from 7.10 to 7.20 (mt, 2H), from 7.25 to 7.45 (mt, 3H), 7.55 (d, $J = 4.5$ Hz, 1H), 7.94 (d, $J = 9$ Hz, 1H), 8.71 (d, $J = 4.5$ Hz, 1H).

Diastereoisomer B: ^1H NMR spectrum (400 MHz, $\text{d}_6\text{-(CD}_3)_2\text{SO}$, δ in ppm): from 1.30 to 1.90 and from 1.95 to 2.15 (2 series of mts, 10H in all), from 2.40 to 2.60 (mt, 3H), 2.75 (mt, 1H), from 2.95 to 3.15 (unresolved peak, 2H), 3.10 (t, $J = 7$ Hz, 2H), 3.93 (s, 3H), 5.28 (mt, 1H), 5.53 (d, $J = 5$ Hz, 1H), (double t, $J = 8.5$ and 2.5 Hz, 1H), from 7.10 to 7.20 (mt, 2H), 7.35 (mt, 1H), from 7.35 to 7.45 (mt, 2H), 7.55 (d, $J = 4.5$ Hz, 1H), 7.95 (d, $J = 9.5$ Hz, 1H), 8.72 (d, $J = 4.5$ Hz, 1H), from 11.00 to 12.5 (very broad unresolved peak, 1H).

(3R,4R)-1-[2-(3-Fluorophenylthio)ethyl]-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetic acid

25 A solution of 1.3 g of methyl (3R,4R)-1-[2-(3-fluorophenylthio)ethyl]-4-[3-(R,S)-hydroxy-3-(6-

methoxyquinolin-4-yl)propyl]piperidine-3-acetate in 20 cm³ of dioxane, to which 2 cm³ of 5N aqueous sodium hydroxide solution have been added, is heated with stirring for 20 hours at a temperature in the region of 60°C. The reaction mixture is evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C and then the residue obtained is taken up in 30 cm³ of water and 5 cm³ of methanol, acidified with citric acid. The solvents are evaporated under the same conditions as above and then the residue obtained is taken up in 70 cm³ of a dichloromethane/methanol (80/20 by volume) mixture. The citric acid crystals are filtered off; the filtrate is evaporated as above and the evaporation residue is taken up in 30 cm³ of diethyl ether, filtered off and dried in the air. 1.1 g of (3R,4R)-1-[2-(3-fluorophenylthio)ethyl]-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetic acid are obtained in the form of a solid with a cream color. ¹H NMR spectrum (300 MHz, d₆-(CD₃)₂SO, δ in ppm). A mixture of two diastereoisomers is observed: from 1.15 to 1.90, from 2.00 to 2.25 and from 2.35 to 2.90 (mts, 16H in all), 3.13 (broad t, J = 7 Hz, 2H), 3.92 (s, 3H), 5.27 (mt, 1H), 5.54 (mt, 1H), 7.00 (double t, J = 8.5 Hz, 1H), from 7.10 to 7.25 (mt, 2H), from 7.30 to 7.50 (mt, 3H), 7.55 (mt, 1H), 7.94 (d, J = 9 Hz, 1H), 8.71 (d, J = 4.5 Hz, 1H), from 11.50 to

13.50 (very broad unresolved peak, 1H).

Example 49A

Methyl (3R,4R)-1-[2-(3-fluorophenylthio)ethyl]-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-
5 piperidine-3-acetate

0.28 g of sodium borohydride is added portionwise with stirring to a solution, maintained at a temperature in the range of 20°C of 3.2 g of methyl (3R,4R)-1-[2-(3-fluorophenylthio)ethyl]-4-[3-oxo-3-(6-
10 methoxyquinolin-4-yl)propyl]piperidine-3-acetate in 50 cm³ of methanol to which have been added 2 drops of 5N aqueous sodium hydroxide solution. The mixture is stirred for 4 hours at a temperature in the region of 20°C. After adding 30 cm³ of water, the mixture is
15 extracted with 2 times 30 cm³ of dichloromethane. The combined organic phases are washed with 60 cm³ of water, dried over magnesium sulfate, filtered and evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. The residual oil is purified by
20 chromatography at atmospheric pressure on a column of silica gel (particle size 20-45 µm; diameter 4 cm; silica volume 520 cm³), elution being carried out with a dichloromethane/methanol (99/1) mixture and approximately 60-cm³ fractions being collected.
25 Fractions 40 to 72 are combined and then evaporated as under the above conditions. 1.7 g of an oil are

obtained, the hydrochloride of which is prepared in the following way: a solution of 0.30 g of oil in 5 cm³ of diethyl ether is poured onto 5 cm³ of a 5N solution of hydrochloric acid in ether. The gel obtained is diluted
 5 with 10 cm³ of ether, stirred for 15 minutes at a temperature in the region of 20°C and then evaporated under reduced pressure (5 kPa) at a temperature in the region of 30°C. The residue obtained is dissolved in 30 cm³ of water and then lyophilized. 0.26 g of methyl
 10 (3R,4R)-1-[2-(3-fluorophenylthio)ethyl]-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetate is obtained in the form of a lyophilizate with a cream color.

¹H NMR spectrum (400 MHz, d6-(CD₃)₂SO with addition of a
 15 few drops of d4-CD₃COOD at a temperature of 373 K, δ in ppm). A mixture of two diastereoisomers is observed: from 1.45 to 2.00 and from 2.25 to 2.60 (mts, 10H in all), from 3.05 to 3.45 (mts, 8H), 3.60 and 3.63 (2s, 3H in all), 3.97 and 3.98 (2s, 3H in all), 5.39 (mt,
 20 1H), 7.03 (mt, 1H), 7.23 (mt, 2H), 7.37 (mt, 1H), from 7.50 to 7.65 (mt, 2H), 7.80 (mt, 1H), 8.12 (d, J = 9.5 Hz, 1H), 8.84 (d, J = 5 Hz, 1H).

Methyl (3R,4R)-1-[2-(3-fluorophenylthio)ethyl]-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-
 25 **acetate**

2.26 g of methyl(3R,4R)-4-[3-oxo-3-(6-

methoxyquinolin-4-yl)propyl]piperidine-3-acetate, dissolved beforehand in 50 cm³ of acetonitrile, are added dropwise, with stirring and at a temperature in the region of 20°C, followed by 6.91 g of potassium carbonate and 2 g of potassium iodide, to a solution of 4 g of 1-[(2-chloroethyl)thio]-3-fluorobenzene in 50 cm³ of acetonitrile. The mixture is heated for 18 hours at a temperature in the region of 70°C. After a further addition of 0.3 g of potassium iodide and additional heating at a temperature in the region of 70°C for 4 hours, the reaction mass is cooled to approximately 20°C, 200 cm³ of water are added and extraction is carried out with 2 times 150 cm³ of ethyl acetate. The combined extracts are washed with 300 cm³ of water, dried over magnesium sulfate, filtered and evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. The residue obtained is purified by chromatography at atmospheric pressure on a column of silica gel (particle size 20-45 µm; diameter 5.2 cm; silica volume 950 cm³), elution being carried out with a dichloromethane/methanol (99/1 by volume) mixture and approximately 6-cm³ fractions being collected. Fractions 24 to 36 are combined and concentrated under the above conditions. 3.3 g of methyl (3R,4R)-1-[2-(3-fluorophenylthio)ethyl]-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetate are obtained in the form

of an oil with a yellow color.

Infrared spectrum (CH_2Cl_2): 2936, 2806, 1731, 1692, 1620, 1505, 1474, 1243, 881 and 853 cm^{-1}

Methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetate was obtained in Example 48.

Example 50

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3,5-difluorophenyl)prop-2-ynyl]piperidine-3-carboxylic acid

A mixture of 0.89 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3,5-difluorophenyl)prop-2-ynyl]piperidine-3-carboxylate in 9 cm^3 of dioxane to which have been added 1.41 cm^3 of 5N aqueous sodium hydroxide solution is stirred for 18 hours at a temperature in the region of 60°C . After cooling to approximately 20°C , the reaction mixture is evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C . The residue obtained is purified by chromatography under a nitrogen pressure of 50 kPa on a column of silica gel (particle size 20-45 μm ; diameter 3.3 cm; mass 56 g), elution first being carried out with a dichloromethane/methanol (95/5 by volume) mixture. A fraction of 100 cm^3 is first collected and then 16- cm^3 fractions. Fractions 1 to 36 are separated. Elution is subsequently carried out with

a dichloromethane/methanol (75/25 by volume) mixture. A first fraction of 200 cm³, a second of 150 cm³ and then a third of 100 cm³ are obtained. The latter two are combined and concentrated as above. The residue
 5 obtained is taken up in dichloromethane and filtered. The filtrate is evaporated as above and then the new residue obtained is triturated in 25 cm³ of a diisopropyl ether/pentane (50/50 by volume) mixture. The product which crystallizes is filtered off and
 10 washed with 2 times 10 cm³ of the same mixture and then 3 times 10 cm³ of pentane. 0.53 g of (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3,5-difluorophenyl)prop-2-ynyl]piperidine-3-carboxylic acid is obtained in the form of solid with a cream color
 15 melting at 106°C.

¹H NMR spectrum (300 MHz, d₆-(CD₃)₂SO, δ in ppm). A mixture of two diastereoisomers is observed:
 from 1.40 to 1.95 (mt, 7H), from 2.30 to 3.00 (mt, 5H), 3.57 and 3.59 (2s, 2H in all), 3.90 and 3.93 (2s, 3H in
 20 all), 5.25 (mt, 1H), 5.55 (unresolved peak, 1H), 7.22 (mt, 2H), from 7.25 to 7.45 (mt, 3H), 7.56 (mt, 1H), 7.94 (d, J = 9 Hz, 1H), 8.70 (d, J = 4.5 Hz, 1H), from 12.10 to 12.80 (broad unresolved peak, 1H).

Methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3,5-difluorophenyl)prop-2-ynyl]piperidine-3-carboxylate
 25

0.138 g of tetrakis(triphenylphosphine)-palladium, 0.046 g of cuprous iodide and 0.42 cm³ of 1-bromo-3,5-difluorobenzene are added to a mixture, stirred at a temperature in the region of 20°C under an inert atmosphere, of 0.95 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-(prop-2-ynyl)piperidine-3-carboxylate in 9.5 cm³ of triethylamine. The mixture is heated at a temperature in the region of 80°C for 3 hours. After cooling to approximately 20°C, the reaction mixture is taken up in 30 cm³ of ethyl acetate and 30 cm³ of water and stirred for 5 minutes. The organic phase is separated by settling, while the aqueous layer is extracted with 2 times 30 cm³ of ethyl acetate. The organic extracts are combined, washed with 3 times 30 cm³ of water, dried over sodium sulfate, filtered and concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. The residue obtained is purified by chromatography under a nitrogen pressure of 50 kPa on a column of silica gel (particle size 20-45 µm; diameter 2.3 cm; 40 g), elution being carried out with pure ethyl acetate. 2 fractions of 100 cm³ are first collected and then 20-cm³ fractions are obtained. Fractions 8 to 40 are combined and evaporated under the above conditions. 0.967 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3,5-

difluorophenyl)prop-2-ynyl]piperidine-3-carboxylate is obtained in the form of a foam with an orange color.

Infrared spectrum (KBr): 3424, 2948, 1734, 1618, 1586, 1432, 1242, 1122, 1028, 990 and 373 cm^{-1}

- 5 Methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-(prop-2-ynyl)piperidine-3-carboxylate can be prepared as described in Example 32.

Example 51

- 10 **(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,5-difluorophenyl)prop-2-ynyl]piperidine-3-carboxylic acid**

- A mixture of 0.874 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,5-difluorophenyl)prop-2-ynyl]piperidine-3-carboxylate in 8.8 cm^3 of dioxane to which have been added 1.37 cm^3 of 5N aqueous sodium hydroxide solution is stirred for 17 hours at a temperature in the region of 60°C. After cooling to approximately 20°C, the
- 15 reaction mixture is evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. An oil is obtained, which product is purified by chromatography under a nitrogen pressure of 50 kPa on a column of silica gel (particle size 20-45 μm ; diameter 3 cm; 25 g), elution being carried out with a
- 25 dichloromethane/methanol (85/15 by volume) mixture,

first a fraction of 100 cm³ being collected and then 50-cm³ fractions being collected. Fractions 3 and 4 are combined and concentrated as above. The evaporation residue is taken up in dichloromethane and filtered.

- 5 The filtrate is concentrated as under the above conditions and then the product obtained is taken up with stirring in 40 cm³ of a pentane/diisopropyl ether (50/50 by volume) mixture for 16 hours at a temperature in the region of 20°C. The crystals obtained are
- 10 filtered off and washed with 2 times 10 cm³ of the same mixture as above and then 3 times 20 cm³ of pentane.

0.392 g of (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,5-difluorophenyl)prop-2-ynyl]piperidine-3-carboxylic acid

15 is obtained in the form of a pale yellow solid melting at 109°C which is a mixture of two diastereoisomers.

¹H NMR spectrum (300 MHz, d6-(CD₃)₂SO, δ in ppm). A mixture of two diastereoisomers is observed:

- from 1.40 to 2.00 (mts, 7H), from 2.30 to 3.00 (mt, 5H), 3.64 and 3.65 (2s, 2H in all), 3.90 and 3.92 (2s, 3H in all), 5.26 (unresolved peak, 1H), 5.56 (unresolved peak, 1H), from 7.25 to 7.50 (mt, 5H), 7.56 (mt, 1H), 7.94 (d, J = 9 Hz, 1H), 8.71 (d, J = 4.5 Hz, 1H), from 12.40 to 12.70 (unresolved peak, 1H).
- 20

- 25 **Methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,5-difluorophenyl)prop-2-**

ynyl]piperidine-3-carboxylate

A mixture of 1.1 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-(prop-2-ynyl)piperidine-3-carboxylate, 11 cm³ of triethylamine, 0.16 cm³ of tetrakis(triphenylphosphine)palladium, 0.053 g of cuprous iodide and 0.47 cm³ of 1-bromo-2,5-difluorobenzene is stirred for 3 hours 15 minutes under an inert atmosphere at a temperature in the region of 80°C. After cooling to approximately 20°C, the reaction mixture has 30 cm³ of ethyl acetate and 30 cm³ of water added with stirring. The organic phase is separated, while the aqueous phase is extracted with 2 times 30 cm³ of ethyl acetate. The organic extracts are combined, washed with 3 times 25 cm³ of water, dried over sodium sulfate and concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. A product is obtained, which product is purified by chromatography under a nitrogen pressure of 50 kPa on a column of silica gel (particle size 20-45 µm; diameter 3.3 cm; 50 g), elution being carried out with ethyl acetate and a fraction of 300 cm³ first being collected, followed by 32-cm³ fractions. Fractions 7 to 22 are combined and then concentrated under the above conditions. 0.91 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,5-difluorophenyl)prop-2-

ynyl]piperidine-3-carboxylate is obtained in the form of a foam with an off-white color.

Infrared spectrum (CCl_4): 3614, 2950, 1738, 1622, 1497, 1249, 1163, 1033 and 873 cm^{-1}

- 5 Methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-(prop-2-ynyl)piperidine-3-carboxylate was prepared in the Example 43.

Example 52

- (3R,4R)-1-[2-(Cyclohexylthio)ethyl]-4-[3-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetic acid, diastereoisomer A, and (3R,4R)-1-[2-(cyclohexylthio)-ethyl]-4-[3-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-piperidine-3-acetic acid, diastereoisomer B
- 10

- 1.3 g of (3R,4R)-1-[2-(cyclohexylthio)ethyl]-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-piperidine-3-acetic acid are chromatographed on a column with a length of 35 cm and a diameter of 6 cm packed with 700 g of Kromasil® silica (particle size $10\text{ }\mu\text{m}$). Elution is carried out using a dichloro-
- 15 methane/acetonitrile/methanol/triethylamine (56/40/4/0.5 by volume) mixture. The flow rate is $70\text{ cm}^3/\text{min}$. Detection is carried out using ultraviolet radiation at 265 nm. Two preparative injections led to the separation of the two diastereoisomers. The
- 20 fractions corresponding to the first, diastereoisomer A, are concentrated under reduced pressure (5 kPa) at a
- 25

temperature in the region of 40°C. The evaporation residue obtained is dried in an oven under reduced pressure (10 Pa) at a temperature in the region of 20°C. 0.310 g of (3R,4R)-1-[2-(cyclohexylthio)ethyl]-4-
 5 [3-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetic acid, diastereoisomer A, is obtained in the form of a foam with a beige color ($[\alpha]_D^{20} = -43.6 \pm 1.0$, in dichloromethane at 0.5%). The fractions corresponding to the second, diastereoisomer B, are
 10 concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. The evaporation residue obtained is dried in an oven under reduced pressure (10 Pa) at a temperature in the region of 20°C. 0.260 g of (3R,4R)-1-[2-(cyclohexylthio)ethyl]-4-
 15 [3-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetic acid, diastereoisomer B, is obtained in the form of a foam with a beige color ($[\alpha]_D^{20} = +55.4 \pm 1.1$, in dichloromethane at 0.5%).

Diastereoisomer A: ^1H NMR spectrum (300 MHz, d_6 -
 20 $(\text{CD}_3)_2\text{SO}$, δ in ppm): from 1.10 to 2.20 and from 2.30 to 2.80 (2 series of mts, 29H in all), 3.93 (s, 3H), 5.28 (broad dd, $J = 7.5$ and 3 Hz, 1H), from 5.30 to 5.70 (broad unresolved peak, 1H), from 7.35 to 7.45 (mt, 2H), 7.56 (d, $J = 4.5$ Hz, 1H), 7.94 (d, $J = 9.5$ Hz, 1H), 8.72 (d, $J = 4.5$ Hz, 1H).
 25

Diastereoisomer B: ^1H NMR spectrum (300 MHz, d_6 -

(CD₃)₂SO, δ in ppm): from 1.10 to 2.10 and from 2.30 to 2.80 (2 series of mts, 29H in all), 3.92 (s, 3H), 5.27 (broad dd, J = 7.5 and 3 Hz, 1H), from 5.30 to 5.75 (broad unresolved peak, 1H), from 7.35 to 7.45 (mt, 2H), 7.54 (d, J = 4.5 Hz, 1H), 7.94 (d, J = 9.5 Hz, 1H), 8.71 (d, J = 4.5 Hz, 1H).

(3R,4R)-1-[2-(Cyclohexylthio)ethyl]-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetic acid

10 2.96 cm³ of 5N aqueous sodium hydroxide solution are added, with stirring at a temperature in the region of 20°C, to a solution of 1.9 g of methyl (3R,4R)-1-[2-(cyclohexylthio)ethyl]-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetate
15 in 35 cm³ of dioxane. The solution is heated for 16 hours at a temperature in the region of 60°C. The reaction mixture is evaporated under reduced pressure (5 kPa) at a temperature in the region of 50°C and then the residue obtained is taken up in 50 cm³ of acetone
20 and reevaporated as above. After having taken up the residue obtained in 50 cm³ of diethyl ether and having concentrated as under the above conditions, the yellow solid obtained has 20 cm³ of water added and is acidified with an amount of citric acid sufficient to
25 obtain a pH in the region of 4-5. The mixture is extracted with 50 cm³ of dichloromethane. The organic

extract is concentrated under reduced pressure (5 kPa) at a temperature in the region of 50°C. The evaporation residue is taken up in 2 times 100 cm³ of a dichloromethane/methanol (90/10 by volume) mixture, the insoluble material being filtered off each time after the residue has been taken up. The combined filtrates are concentrated as above and then the residue obtained is taken in 50 cm³ of diethyl ether and evaporated as under the above conditions. The crystals obtained are taken up in 50 cm³ of diethyl ether, filtered off and washed with 2 times 50 cm³ of ether. The product is finally dried under reduced pressure, first under 5 kPa and then in an oven under 10 Pa at a temperature in the region of 60 °C. 1.9 g of (3R,4R)-1-[2-(cyclohexylthio)ethyl]-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetic acid are obtained in the form of a solid with a yellow color.

¹H NMR spectrum (300 MHz, d₆-(CD₃)₂SO, δ in ppm). A mixture of two diastereoisomers is observed.

from 1.00 to 2.95 (mts, 29H), 3.92 (s, 3H), 5.27 (mt, 1H), 5.54 (unresolved peak, 1H), from 7.30 to 7.45 (mt, 2H), 7.55 (mt, 1H), 7.95 (d, J = 9.5 Hz, 1H), 8.72 (d, J = 4.5 Hz, 1H), from 10.80 to 11.90 (very broad unresolved peak, 1H).

Example 52A

Methyl (3R,4R)-1-[2-(cyclohexylthio)ethyl]-4-[3-(R,S)-

hydroxy-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetate dihydrochloride

0.42 g of sodium borohydride is added portionwise for approximately 1 hour with stirring and
5 under an inert atmosphere, to a solution cooled to a temperature in the region of 15°C, of 3.5 g of methyl (3R,4R)-1-[2-(cyclohexylthio)ethyl]-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetate in 50 cm³ of methanol to which has been added 1 drop of 5N
10 sodium hydroxide solution. The mixture is stirred for 2 hours at this temperature and then cooled to approximately 10°C. 10 cm³ of water are then added dropwise. The mixture is concentrated under reduced pressure (5 kPa) at a temperature in the region of
15 45°C. After adding 100 cm³ of water to the residue obtained, the mixture is extracted with 2 times 100 cm³ of ethyl acetate. The combined extracts are dried over sodium sulfate, filtered and concentrated as above. An oil is obtained, which product is purified by
20 chromatography under a nitrogen pressure of 50 kPa on a column of silica gel (particle size 20-45 µm; diameter 3 cm; height 35 cm), elution being carried out with ethyl acetate and 30-cm³ fractions being collected. Fractions 19 to 42 are combined and concentrated as
25 under the above conditions. 2.44 g of a product are obtained, the hydrochloride of which is prepared in the

following way: 0.5 g of product is dissolved in 10 cm³ of diethyl ether and then the solution is poured into 5 cm³ of a 1N solution of hydrochloric acid in ether. 10 cm³ of ether are added and then the mixture is left
5 to act for 1 hour at a temperature in the region of 20°C. The mixture is filtered and the cake is washed with 2 times 10 cm³ of diethyl ether and dried under reduced pressure (5 kPa) at a temperature in the region of 20°C and then in an oven under reduced pressure
10 (10 Pa) at a temperature in the region of 60°C. 0.46 g of methyl (3R,4R)-1-[2-(cyclohexylthio)ethyl]-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-piperidine-3-acetate dihydrochloride is obtained in the form of a solid with a pale pink color melting at 80°C
15 while softening.

¹H NMR spectrum (400 MHz, d₆-(CD₃)₂SO at a temperature of 383 K, δ in ppm). A mixture of two diastereoisomers is observed.
from 1.20 to 2.05 and from 2.30 to 2.65 (mts, 20H in
20 all), 2.82 (mt, 1H), from 2.85 to 3.50 (broad unresolved peak, 4H), 2.96 (mt, 2H), 3.19 (mt, 2H), 3.62 and 3.63 (2s, 3H in all), 4.00 (s, 3H), 5.37 (mt, 1H), from 7.50 to 7.65 (mt, 2H), 7.73 (unresolved peak, 1H), 8.15 (broad d, J = 9 Hz, 1H), 8.83 (d, J = 4.5 Hz,
25 1H).

Methyl (3R,4R)-1-[2-(cyclohexylthio)ethyl]-4-[3-oxo-3-

(6-methoxyquinolin-4-yl)propylpiperidine-3-acetate

2.06 g of 2-chloroethyl cyclohexyl sulfide, 50 cm³ of acetonitrile, followed by 1.78 g of potassium iodide and 7.25 g of potassium carbonate, are added
5 with stirring, at a temperature in the region of 20°C and under an inert atmosphere, to a solution of 3.9 g of methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetate in 50 cm³ of acetonitrile. The mixture is heated for 18 hours at a
10 temperature in the region of 80°C. After cooling to approximately 20°C, the mixture has 100 cm³ of water and 100 cm³ of ethyl acetate added. The organic phase is separated by settling, while the aqueous phase is extracted with 200 cm³ of ethyl acetate. The organic
15 extracts are combined, dried over sodium sulfate, filtered and concentrated under reduced pressure (5 kPa) at a temperature in the region of 45°C. An oil is obtained, which product is purified by chromatography under a nitrogen pressure of 50 kPa on a
20 column of silica gel (particle size 20-45 µm; diameter 3.5 cm; height 46 cm), elution being carried out with a dichloromethane/methanol (95/5 by volume) mixture and 50-cm³ fractions being collected. Fractions 18 to 37 are combined and concentrated as above. A product is
25 obtained, which product is purified a second time by chromatography under a nitrogen pressure of 50 kPa on a

column of silica gel (particle size 20-45 μm ; diameter 4 cm; height 40 cm), elution being carried out with an ethyl acetate/cyclohexane (7/3 by volume) mixture and 100- cm^3 fractions being collected. Fractions 24 to 54 are combined and then concentrated under the same conditions as above. 3.7 g of methyl (3R,4R)-1-[2-(cyclohexylthio)ethyl]-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetate are obtained in the form of an oil with a brown color.

10 Infrared spectrum (CH_2Cl_2): 2933, 2855, 1732, 1693, 1620, 105, 1244, 1029 and 853 cm^{-1}

Methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetate was obtained in Example 48.

15 **Example 53**

(3R,4R)-4-[3-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-acetic acid, diastereoisomer A, and (3R,4R)-4-[3-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-acetic acid, diastereoisomer B

1.2 g of (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-acetic acid are chromatographed on a column with a length of 35 cm and a diameter of 6 cm packed with 700 g of Kromasil® silica (particle size 10 μm). Elution is carried out using a dichloro-

methane/acetonitrile/methanol/triethylamine
(70/15/15/0.05 by volume) mixture. The flow rate is
90 cm³/min. Detection is carried out using ultraviolet
radiation at 265 nm. Two preparative injections led to
5 the separation of the two diastereoisomers. The
fractions corresponding to the first, diastereoisomer
A, are concentrated under reduced pressure (5 kPa) at a
temperature in the region of 40°C. The crystalline mass
obtained is dried in an oven under reduced pressure
10 (10 Pa) at a temperature in the region of 20°C. 0.408 g
of (3R,4R)-4-[3-hydroxy-3-(6-methoxyquinolin-4-
yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-
acetic acid, diastereoisomer A, is obtained in the form
of a solid with a yellow color ($[\alpha]_D^{20} = -62.9 \pm 1.3$, in
15 methanol at 0.5%). The fractions corresponding to the
second, diastereoisomer B, are concentrated under
reduced pressure (5 kPa) at a temperature in the region
of 40°C. The crystalline mass obtained is dried in an
oven under reduced pressure (10 Pa) at a temperature in
20 the region of 20°C. 0.376 g of (3R,4R)-4-[3-hydroxy-3-
(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)prop-
2-ynyl]piperidine-3-acetic acid, diastereoisomer B, is
obtained in the form of a solid with a yellow color
($[\alpha]_D^{20} = +46.9 \pm 1.1$, in methanol at 0.5%).
25 Diastereoisomer A: ¹H NMR spectrum (300 MHz, d₆-(CD₃)₂SO
with addition of a few drops of d₄-CD₃COOD, δ in ppm):

from 1.20 to 2.00 and from 2.05 to 2.50 (2 series of
mts, 12H in all), from 2.60 to 2.85 (mt, 2H), 3.55
(limit AB, $J = 17$ Hz, 2H), 3.90 (s, 3H), 5.27 (dd, $J =$
8 and 3 Hz, 1H), 7.04 (mt, 1H), 7.26 (broad d, $J =$
5 4 Hz, 1H), from 7.30 to 7.45 (mt, 2H), 7.52 (d, $J =$
5.5 Hz, 1H), 7.56 (d, $J = 4.5$ Hz, 1H), 7.93 (d, $J =$
10 Hz, 1H), 8.70 (d, $J = 4.5$ Hz, 1H).

Diastereoisomer B: ^1H NMR spectrum (300 MHz, $\text{d}_6\text{-(CD}_3)_2\text{SO}$
with addition of a few drops of $\text{d}_4\text{-CD}_3\text{COOD}$, δ in ppm):

10 from 1.20 to 1.90 and from 2.00 to 2.45 (2 series of
mts, 12H in all), from 2.60 to 2.85 (mt, 2H), 3.50 (AB,
 $J = 17$ Hz, 2H), 3.91 (s, 3H), 5.27 (dd, $J = 8$ and
3.5 Hz, 1H), 7.05 (dd, $J = 5.5$ and 4 Hz, 1H), 7.26
(broad d, $J = 4$ Hz, 1H), from 7.35 to 7.45 (mt, 2H),
15 from 7.50 to 7.60 (mt, 2H), 7.95 (d, $J = 10$ Hz, 1H),
8.71 (d, $J = 4.5$ Hz, 1H).

**(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-
yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-
acetic acid**

20 A solution of 3 g of methyl (3R,4R)-4-[3-
(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-
(thien-2-yl)prop-2-ynyl]piperidine-3-acetate in 50 cm^3
of dioxane to which have been added 5 cm^3 of 5N aqueous
sodium hydroxide solution is heated for 17 hours, with
25 stirring and under an inert atmosphere, at a
temperature in the region of 60°C . After cooling to

approximately 20°C, the mixture is concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C and then the residue is taken up in 100 cm³ of dichloromethane and 5 cm³ of water. The mixture is

5 acidified with an amount of citric acid sufficient to obtain a pH in the region of 4-5 and then dried over magnesium sulfate, filtered and concentrated as above. The residual water is entrained by azeotropeing in chloroform. After concentrating as above, the residue

10 obtained is purified by chromatography at atmospheric pressure on a column of silica gel (particle size 20-45 µm; diameter 3.5 cm; silica volume 200 cm³), elution being carried out with a chloroform/methanol/28% aqueous ammonia (12/2/0.5 by volume) mixture and

15 approximately 60-cm³ fractions being collected. The fractions comprising the expected product are combined and then concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. The residue obtained is taken up in 40 cm³ of diethyl ether,

20 filtered off, washed with 2 times 5 cm³ of ether and dried under reduced pressure (5 kPa) at a temperature in the region of 20°C and then in an oven under reduced pressure (10 Pa) at a temperature in the region of 40°C. 1.9 g of (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-

25 methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-acetic acid are obtained in the form

of a white solid.

¹H NMR spectrum (300 MHz, d₆-(CD₃)₂SO, δ in ppm). A mixture of two diastereoisomers is observed:

from 1.20 to 2.45 (mts, 12H), from 2.60 to 2.85 (mt, 2H), 3.48 (mt, 2H), 3.92 (s, 3H), 5.28 (mt, 1H), 7.06 (dd, J = 5.5 and 3.5 Hz, 1H), 7.27 (dd, J = 3.5 and 1 Hz, 1H), from 7.30 to 7.45 (mt, 2H), from 7.50 to 7.60 (mt, 2H), 7.94 (d, J = 9 Hz, 1H), 8.70 (d, J = 4.5 Hz, 1H).

10 Example 53A

Methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-acetate

0.317 g of sodium borohydride is added over approximately 40 minutes at a temperature of less than 30°C, with stirring and under an inert atmosphere, to a solution of 4.0 g of methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-acetate in 65 cm³ of methanol to which has been added one drop of 5N aqueous sodium hydroxide solution. After stirring for 3 hours at a temperature in the region of 20°C, the mixture has 100 cm³ of water added and is then extracted with 4 times 50 cm³ of dichloromethane. The extracts are washed with 3 times 50 cm³ of water, dried over magnesium sulfate, filtered and concentrated under reduced pressure (5 kPa) at a

temperature in the region of 40°C. An oil is obtained, which product is purified by chromatography at atmospheric pressure on a column of silica gel (particle size 20-45 μm ; diameter 3.2 cm; silica volume 5 300 cm^3), elution being carried out with ethyl acetate and approximately 100- cm^3 fractions being collected. The fractions corresponding to the expected product are combined. These fractions are concentrated as above. 3.5 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-10 methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-acetate are obtained in the form of an oil with a yellow color.

Infrared spectrum (CCl_4): 2939, 1739, 1622, 1509, 1434, 1241, 850 and 696 cm^{-1}

15 The hydrochloride was prepared in the following way: a solution of 0.5 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-acetate in 20 cm^3 of dichloromethane is added with stirring to 20 30 cm^3 of diethyl ether to which have been added 4 cm^3 of a 1N solution of hydrochloric acid in ether. After 2 hours, the white solid formed is filtered off, washed with 2 times 5 cm^3 of diethyl ether and dried under partial pressure (5 kPa) and then, to constant weight, 25 in an oven under reduced pressure (10 Pa) at a temperature in the region of 40°C. 0.35 g of methyl

(3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-acetate dihydrochloride is obtained in the form of a white solid.

- 5 Infrared spectrum (KBr): 3278, 2932, 2524, 1730, 1619, 1601, 1427, 1248, 1021, 849 and 714 cm^{-1}

Methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-acetate

- 10 0.263 g of triphenylphosphine and then 0.85 g of tetrakis(triphenylphosphine)palladium, 0.4 g of cuprous iodide and 1.75 cm^3 of 2-iodothiophene are added with stirring, at a temperature in the region of 20°C and under an inert atmosphere, to a solution of 4.3 g
- 15 of methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]-1-(prop-2-ynyl)piperidine-3-acetate in 100 cm^3 of acetonitrile. The mixture is stirred for 10 minutes and then 2.95 cm^3 of triethylamine are added. After stirring for 48 hours at a temperature in the
- 20 region of 20°C, the mixture is filtered through celite and the insoluble material is washed with 2 times 50 cm^3 of acetonitrile. The filtrate is concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. The evaporation residue is purified by
- 25 chromatography at atmospheric pressure on a column of silica gel (particle size 20-45 μm ; diameter 4.5 cm;

silica volume 500 cm³), elution being carried out with pure ethyl acetate and approximately 60-cm³ fractions being collected. The fractions corresponding to the expected product are combined. These fractions are
5 concentrated under the above conditions. 4 g of methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(thien-2-yl)prop-2-ynyl]piperidine-3-acetate are obtained in the form of an oil with a yellow color. Infrared spectrum (CCl₄): 2935, 1740, 1692, 1431, 1242,
10 1032, 849 and 698 cm⁻¹

Methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]-1-(prop-2-ynyl)piperidine-3-acetate

4.8 cm³ of triethylamine are added with stirring, at a temperature in the region of 20°C and
15 under an inert atmosphere, to a solution of 5 g of methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetate in 60 cm³ of dimethylformamide. After stirring for 15 minutes at this temperature, 1.5 cm³ of propargyl bromide are added
20 over approximately 15 minutes and then, after 15 minutes, the mixture is heated at a temperature in the region of 45°C for 4 hours. After cooling to approximately 20°C, the reaction mixture is poured onto approximately 700 cm³ of water and then the mixture is
25 extracted with 4 times 80 cm³ of diethyl ether. The combined extracts are washed with 3 times 80 cm³ of

water, dried, filtered and concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. The evaporation residue is purified by chromatography at atmospheric pressure on a column of silica gel (particle size 20-45 μm ; diameter 4 cm; silica volume 500 cm^3), elution being carried out with pure ethyl acetate and 60- cm^3 fractions being collected. Fractions 9 to 20 are combined and then concentrated as under the above conditions. 4.3 g of methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]-1-(prop-2-ynyl)piperidine-3-acetate are obtained in the form of an oil with a yellow color.

Infrared spectrum (CCl_4): 3311, 2936, 1739, 1692, 1620, 1431, 1242, 1032, 849, 654 and 627 cm^{-1}

Methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetate was prepared in Example 48.

Example 54

(3R,4R)-4-[3-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclopentylthio)ethyl]piperidine-3-acetic acid, diastereoisomer A, and (3R,4R)-4-[3-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclopentylthio)ethyl]piperidine-3-acetic acid, diastereoisomer B, dihydrochloride

By proceeding as described in Example 52, the two diastereoisomers of (3R,4R)-4-[3-(R,S)-hydroxy-3-

(6-methoxyquinolin-4-yl)propyl]-1-[2-cyclopentylthio)ethyl]piperidine-3-acetic acid were separated.

(3R,4R)-4-[3-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclopentylthio)ethyl]piperidine-3-acetic acid,

- 5 diastereoisomer B, is thus isolated in the form of a solid with a white color, the dihydrochloride of which is prepared ($[\alpha]_D^{20} = -89.6 \pm 1.6$, in methanol at 0.5%), and (3R,4R)-4-[3-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclopentylthio)ethyl]piperidine-3-
- 10 acetic acid, diastereoisomer A, is thus isolated in the form of a thick oil with a yellow color ($[\alpha]_D^{20} = +57.4 \pm 0.9$, in methanol at 0.5%).

Diastereoisomer A: ^1H NMR spectrum (300 MHz,

- d6-(CD_3) $_2\text{SO}$, δ in ppm): from 1.15 to 2.10 and from 2.25
- 15 to 2.60 (mts, 24H in all), 2.70 (mt, 2H), 3.11 (mt, 1H), 3.92 (s, 3H), 5.26 (dd, $J = 8$ and 4 Hz, 1H), from 7.35 to 7.45 (mt, 2H), 7.54 (d, $J = 4.5$ Hz, 1H), 7.94 (d, $J = 10$ Hz, 1H), 8.71 (d, $J = 4.5$ Hz, 1H).

Diastereoisomer B: ^1H NMR spectrum (300 MHz,

- 20 d6-(CD_3) $_2\text{SO}$, δ in ppm): from 1.30 to 2.10, from 2.15 to 2.40 and from 2.65 to 3.50 (mts, 27H in all), 4.00 and 4.01 (2s, 3H in all), 5.50 (mt, 1H), 7.54 and 7.58 (2d, $J = 2.5$ Hz, 1H in all), 7.71 (very broad d, $J = 9$ Hz, 1H), 7.96 (mt, 1H), 8.23 (very broad d, $J = 9$ Hz, 1H),
- 25 9.00 (very broad d, $J = 4.5$ Hz, 1H), from 9.70 to 9.85 and from 10.15 to 10.35 (2 unresolved peaks, 1H in

all).

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclopentylthio)ethyl]piperidine-3-acetic acid

- 5 A solution of 1.6 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclopentylthio)ethyl]piperidine-3-acetate dihydrochloride in 30 cm³ of dioxane, to which have been added 2.6 cm³ of 5N aqueous sodium hydroxide solution,
- 10 is stirred for 6 hours at a temperature in the region of 65°C. After concentrating the reaction mixture under reduced pressure (5 kPa) at a temperature in the region of 40°C, a residue is obtained, which residue is taken up in 2 times 30 cm³ of chloroform and which is
- 15 concentrated as under the above conditions. The residue is purified by chromatography at atmospheric pressure on a column of silica gel (particle size 20-45 µm; diameter 3 cm; silica volume 100 cm³), elution being carried out with a chloroform/methanol/28% aqueous
- 20 ammonia (12/3/0.5 by volume) mixture and 30-cm³ fractions being collected. The fractions comprising the expected product are combined and concentrated as above. 1.5 g of a colorless lacquer are obtained, which product is taken up in 20 cm³ of diethyl ether, filtered
- 25 and washed with 2 times 10 cm³ of diethyl ether. The product is dried under partial pressure (5 kPa) and

then to constant weight in an oven under reduced pressure (10 Pa) at a temperature in the region of 40°C. 1.35 g of (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-

5 (cyclopentylthio)ethyl]piperidine-3-acetic acid are obtained in the form of a white solid.

¹H NMR spectrum (300 MHz, d₆-(CD₃)₂SO, δ in ppm). A mixture of two diastereoisomers is observed:

from 1.00 to 2.20 and from 2.25 to 2.80 (mts, 25H in
10 all), 3.10 (mt, 2H), 3.92 (broad s, 3H), 5.26
(unresolved peak, 1H), from 7.20 to 7.60 (mt, 3H), 7.93
(broad d, J = 9 Hz, 1H), 8.71 (mt, 1H).

Example 54A

**Methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-
15 4-yl)propyl]-1-[2-(cyclopentylthio)ethyl]piperidine-3-
acetate dihydrochloride**

0.227 g of sodium borohydride is added portionwise over approximately 30 minutes at a temperature of less than 30°C, with stirring and under
20 an inert atmosphere, to a mixture of 2.5 g of methyl
(3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]-1-
[2-(cyclopentylthio)ethyl]piperidine-3-acetate in 40 cm³
of methanol to which has been added one drop of 5N
aqueous sodium hydroxide solution. After stirring the
25 reaction mixture for 3 hours at a temperature in the
region of 20°C, 100 cm³ of water are added and then the

mixture is extracted with 4 times 50 cm³ of ethyl acetate. The combined extracts are washed with 3 times 50 cm³ of water, dried over magnesium sulfate, filtered and concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. The residual oil obtained is purified by chromatography at atmospheric pressure on a column of silica gel (particle size 20-45 µm; diameter 3.2 cm; silica volume 100 cm³), elution being carried out with pure ethyl acetate and 25-cm³ fractions being collected. The fractions comprising the expected product are combined and then concentrated as above. 2.1 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclopentylthio)-ethyl]piperidine-3-acetate are obtained in the form of an oil with a pale yellow color. The hydrochloride was prepared in the following way: a solution of 0.5 g of the oil obtained above, dissolved in 15 cm³ of dichloromethane, is poured with stirring into 4 cm³ of a 1N solution of hydrochloric acid in diethyl ether. A product precipitates and then crystallizes by addition of 25 cm³ of diethyl ether. The solid is filtered off, washed with 2 times 10 cm³ of ether and dried under vacuum over potassium hydroxide (5 kPa) and then, to constant weight, in an oven under reduced pressure (10 Pa) at a temperature in the region of 40°C. 0.35 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxy-

quinolin-4-yl)propyl]-1-[2-(cyclopentylthio)-ethyl]piperidine-3-acetate dihydrochloride is obtained in the form of a solid with an off-white color.

Infrared spectrum (KBr): 3355, 2950, 2560, 2051, 1982,
5 1731, 1619, 1601, 1428, 1248, 1206, 1020, 849 and
714 cm^{-1}

Methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclopentylthio)ethyl]piperidine-3-acetate

10 A mixture of 4.9 g of methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetate, 2.9 g of 2-chloroethyl cyclopentyl sulfide, 9 g of potassium carbonate and 2.7 g of potassium iodide in 130 cm^3 of acetonitrile is stirred for 17
15 hours at a temperature in the region of 65°C. After cooling to a temperature in the region of 20°C, the reaction mixture has 150 cm^3 of water added and is extracted with 3 times 60 cm^3 of ethyl acetate. The organic extracts are combined, washed with 2 times
20 50 cm^3 [lacuna], dried over magnesium sulfate, filtered and concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. An oil is obtained, which product is purified by chromatography at atmospheric pressure on a column of silica gel
25 (particle size 20-45 μm ; diameter 4 cm; silica volume 300 cm^3), elution being carried out with pure ethyl

acetate and approximately 70-cm³ fractions being collected. The fractions comprising the expected product are combined and then concentrated under the above conditions. 2.6 g of methyl (3R,4R)-4-[3-oxo-3-

5 (6-methoxyquinolin-4-yl)propyl]-1-[2-(cyclopentylthio)-ethyl]piperidine-3-acetate are obtained in the form of an oil with a yellow color.

Infrared spectrum (CCl₄): 2952, 2802, 1738, 1692, 1620, 1504, 1242, 1165, 1032 and 850 cm⁻¹

10 Methyl (3R,4R)-4-[3-oxo-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetate was obtained in Example 48.

2-Chloroethyl cyclopentyl sulfide can be prepared by application of the method disclosed in

15 Patent Application FR 2,395,260.

Example 55

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,6-difluorophenyl)prop-2-ynyl]piperidine-3-carboxylic acid

20 A solution of 0.531 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,6-difluorophenyl)prop-2-ynyl]piperidine-3-carboxylate in 5.3 cm³ of dioxane to which has been added 0.84 cm³ of 5N aqueous sodium hydroxide solution

25 is stirred for 15 hours at a temperature in the region of 60°C. After cooling to a temperature in the region

of 20°C, the reaction mixture is concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. The residue obtained is purified by chromatography under a nitrogen pressure of 50 kPa on a column of silica gel (particle size 20-45 µm; diameter 3 cm; 20 g), elution being carried out with a dichloromethane/methanol (90/10 by volume) mixture and first a fraction of 100 cm³ being collected, followed by 25-cm³ fractions. Fractions 1 to 12 are combined and then concentrated as above. A foam is obtained, which product is taken up with stirring in 15 cm³ of diisopropyl ether for 15 minutes. After adding 15 cm³ of pentane and stirring for an additional 10 minutes, the crystallized product formed is filtered off, washed with 2 times 10 cm³ of a diisopropyl ether/pentane (50/50 by volume) mixture and then 3 times 20 cm³ of pentane, and dried in the air. 0.293 g of (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,6-difluorophenyl)prop-2-ynyl]piperidine-3-carboxylic acid is obtained in the form of a solid with a cream color melting at 107°C.

¹H NMR spectrum (300 MHz, d₆-(CD₃)₂SO, δ in ppm). A mixture of two diastereoisomers is observed: from 1.40 to 1.95 and from 2.30 to 3.00 (mts, 12H in all), 3.67 and 3.68 (2s, 2H in all), 3.88 and 3.92 (2s, 3H in all), 5.24 (mt, 1H), 5.55 (unresolved peak, 1H),

7.22 (mt, 2H), from 7.30 to 7.60 (mt, 4H), 7.39 (d, J = 9 Hz, 1H), 8.70 (mt, 1H), from 12.20 to 12.80 (broad unresolved peak, 1H).

Methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,6-difluorophenyl)prop-2-ynyl]piperidine-3-carboxylate

A mixture of 1.07 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-(prop-2-ynyl)piperidine-3-carboxylate in 10 cm³ of triethylamine is stirred for 5 minutes under an inert atmosphere at a temperature in the region of 20°C. 0.156 g of tetrakis(triphenylphosphine)palladium, 0.051 g of cuprous iodide and 0.78 g of 1-bromo-2,6-difluorobenzene are added. The mixture is stirred for 3 hours 30 minutes at a temperature in the region of 80°C. After cooling to approximately 20°C, the reaction mixture has 30 cm³ of ethyl acetate and 30 cm³ of water added. After stirring for 10 minutes, the mixture is separated by settling. After separating off the organic phase, the aqueous layer is extracted with 2 times 30 cm³ of ethyl acetate. The organic extracts are combined, washed with 3 times 30 cm³ of water, dried over sodium sulfate, filtered and concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. The residue obtained is purified by chromatography under a nitrogen pressure of 50 kPa on a

column of silica gel (particle size 20-45 μm ; diameter 3 cm; 50 g), elution being carried out with pure ethyl acetate and first a fraction of 300 cm^3 being collected, followed by 38- cm^3 fractions. Fractions 6 to 16 are combined and concentrated as above. 0.55 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,6-difluorophenyl)prop-2-ynyl]piperidine-3-carboxylate is obtained in the form of a foam with a pale yellow color.

Infrared spectrum (CCl_4): 3615, 2950, 1738, 1622, 1470, 1241, 1007, 854 and 719 cm^{-1}

Methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-(prop-2-ynyl)piperidine-3-carboxylate can be prepared as described in Example 32.

Example 56

(3R,4R)-4-[3-(6-Methoxyquinolin-4-yl)propyl]-1-[3-(3,5-difluorophenyl)prop-2-ynyl]piperidine-3-acetic acid

0.83 cm^3 of 5N aqueous sodium hydroxide solution is introduced with stirring, at a temperature in the region of 20°C, into a solution of 0.525 g of methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3,5-difluorophenyl)prop-2-ynyl]piperidine-3-acetate in 5 cm^3 of dioxane and then the mixture is heated for 3 hours at a temperature in the region of 60°C. After cooling to approximately 20°C, the mixture is stirred for 3 days and then concentrated under reduced pressure

(5 kPa) at a temperature in the region of 40°C. The residue obtained is taken up in 15 cm³ of water and then the solution is extracted with 5 cm³ of ethyl acetate. The aqueous phase is brought to a pH in the region of 5-6 by addition of 4.1 cm³ of 1N aqueous hydrochloric acid and then extracted, first with 30 cm³ of dichloromethane and then with 10 cm³ of the same solvent. The organic extracts are combined, washed with 2 times 5 cm³ of water, dried over magnesium sulfate, filtered and concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. The residue obtained is taken up in diethyl ether and then concentrated under the same conditions as above until a constant weight is obtained. 0.45 g of (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3,5-difluorophenyl)prop-2-ynyl]piperidine-3-acetic acid is obtained in the form of a solid with a light beige color.

¹H NMR spectrum (300 MHz, d₆-(CD₃)₂SO, δ in ppm):

from 1.20 to 1.80 (mt, 7H), from 2.10 to 2.35 (mt, 4H), 2.43 (dd, J = 16.5 and 10.5 Hz, 1H), 2.75 (mt, 2H), 3.05 (mt, 2H), 3.47 (s, 2H), 3.93 (s, 3H), 7.18 (mt, 2H), from 7.25 to 7.35 (mt, 1H), 7.33 (d, J = 4 Hz, 1H), from 7.35 to 7.45 (mt, 2H), 7.92 (d, J = 9 Hz, 1H), 8.62 (d, J = 4 Hz, 1H).

25 Methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3,5-difluorophenyl)prop-2-ynyl]piperidine-3-acetate

0.35 cm³ of 1-bromo-3,5-difluorobenzene and then 0.112 g of tetrakis(triphenylphosphine)palladium and 0.037 g of cuprous iodide are added at a temperature in the region of 20°C, under an inert atmosphere, to a stirred mixture of 0.77 g of methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-(prop-2-ynyl)piperidine-3-acetate in 7.7 cm³ of triethylamine. The suspension obtained is heated at a temperature in the region of 80°C for 3 hours and then concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. The residue obtained is taken up in 50 cm³ of ethyl acetate in 20 cm³ of water. After stirring the mixture for 15 minutes, the remaining insoluble material is filtered through clarcel and then the filtrate is separated by settling: the organic phase is separated off, then washed with 3 times 3 cm³ of water and a saturated aqueous sodium chloride solution, dried over magnesium sulfate, filtered and concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. The oily residue obtained is purified by chromatography under a nitrogen pressure of 50 kPa on a column of silica gel (particle size 40-63 µ; diameter 3 cm; 45 g), elution being carried out with a dichloromethane/methanol (97/3 by volume) mixture. The fractions comprising the expected product are collected. These fractions are concentrated

under reduced pressure (5 kPa) at a temperature in the region of 40°C. 0.345 g of methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(3,5-difluorophenyl)-prop-2-ynyl]piperidine-3-acetate is obtained in the
 5 form of an oil with a pale yellow color.

Mass spectrum (EI): $m/z = 506 M^+$

Methyl (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-(prop-2-ynyl)piperidine-3-acetate was prepared according to the procedure described in
 10 Example 39.

Example 57

(3R,4R)-1-[2-(3,5-Difluorophenylthio)ethyl]-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylic acid dihydrochloride

15 1.6 cm³ of 5N aqueous sodium hydroxide solution are added at a temperature in the region of 20°C, with stirring and under an inert atmosphere, to a solution of 0.42 g of methyl (3R,4R)-1-[2-(3,5-difluorophenylthio)ethyl]-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylate in
 20 5.5 cm³ of methanol. The mixture is heated for 16 hours at a temperature in the region of 60°C. The solution obtained is evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C and then 5 cm³ of
 25 distilled water and 2.66 cm³ of 6N aqueous hydrochloric acid are added to the residue obtained. The mixture is

then heated in the region of 60°C until a homogeneous solution is obtained, which solution is subsequently evaporated under the above conditions. The residue obtained is triturated in 10 cm³ of a
 5 dichloromethane/methanol (90/10 by volume) mixture and then the resulting insoluble material is filtered off and washed with 2 times 2.5 cm³ of the same mixture. The filtrate is concentrated under the same conditions as above. 0.465 g of (3R,4R)-1-[2-(3,5-difluorophenyl-
 10 thio)ethyl]-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylic acid dihydrochloride is obtained in the form of a foam with a yellow color melting at 160°C while decomposing.

¹H NMR spectrum (300 MHz, d₆-(CD₃)₂SO, δ in ppm). A
 15 mixture of two diastereoisomers is observed:
 from 1.35 to 2.35 and from 2.60 to 4.00 (mts, 16H in all), 4.01 and 4.02 (2s, 3H in all), from 5.45 to 5.65 (mt, 1H), 7.10 (mt, 1H), 7.21 (mt, 2H), from 7.50 to 7.70 (mt, 1H), 7.76 (mt, 1H), 8.00 (mt, 1H), 8.33 (mt,
 20 1H), 9.04 (d, J = 5.5 Hz, 1H), from 11.10 to 11.55 (2 unresolved peaks, 1H in all).

Methyl (3R,4R)-1-[2-(3,5-difluorophenylthio)ethyl]-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-carboxylate

25 0.332 g of potassium carbonate, then 0.4 g of potassium iodide and, finally, 0.675 g of 1-[(2-

bromoethyl)thio]-3,5-difluorobenzene, dissolved
beforehand in 5 cm³ of acetonitrile, are added at a
temperature in the region of 20°C, with stirring and
under an inert atmosphere, to a solution of 0.717 g of
5 methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-
4-yl)propyl]piperidine-3-carboxylate in 15 cm³ of
acetonitrile and 1 cm³ of methanol. The mixture is
heated for 3 hours at a temperature in the region of
80°C. After cooling to a temperature in the region of
10 20°C, the reaction mixture is filtered and the cake is
washed with 2 times 5 cm³ of acetonitrile. The filtrate
is evaporated under reduced pressure (5 kPa) at a
temperature in the region of 40°C. The residue obtained
is purified by chromatography under a nitrogen pressure
15 of 50 kPa on a column of silica gel (particle size
40-63 µm; diameter 3.5 cm; height 35 cm), elution being
carried out with a dichloromethane/methanol (95/5 by
volume) mixture and 35-cm³ fractions being collected.
Fractions 18 to 21 are combined and then evaporated as
20 above. 0.47 g of methyl (3R,4R)-1-[2-(3,5-
difluorophenylthio)ethyl]-4-[3-(R,S)-hydroxy-3-(6-
methoxyquinolin-4-yl)propyl]piperidine-3-carboxylate is
obtained in the form of a viscous oil with an orange-
yellow color.

25 Infrared spectrum (CH₂Cl₂): 3597, 2951, 2814, 1733,
1611, 1586, 1242, 1119, 985, 877, 840 and 667 cm⁻¹

1-[(2-Bromoethyl)thio]-3,5-difluorobenzene

A solution of 2.59 g of sodium hydroxide pellets in 27 cm³ of distilled water and then 0.27 cm³ of aliquat 336 (tricaprylylmethylammonium chloride) are added, with stirring and under an inert atmosphere, to a mixture, maintained at a temperature in the region of 23°C, of 7.5 g of 3,5-difluorothiophenol in 9.01 cm³ of 1,2-dibromoethane. After stirring for 15 minutes at a temperature in the region of 20°C, 50 cm³ of dichloromethane are added to the mixture and then, after a few minutes, the organic phase is separated by settling, washed with 25 cm³ of water and 25 cm³ of a saturated 10% sodium chloride solution, dried over magnesium sulfate, filtered and evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. The evaporation residue is purified by chromatography under a nitrogen pressure of 50 kPa on a column of silica gel (particle size 40-63 µm; diameter 5 cm; height 30 cm), elution being carried out with cyclohexane and first a fraction of 500 cm³ being collected, followed by 50-cm³ fractions. Fractions 9 to 26 are combined and then concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 5.9 g of 1-[(2-bromoethyl)thio]-3,5-difluorobenzene are obtained in the form of a colorless liquid.

Infrared spectrum (CCl₄): 3094, 1607, 1587, 1429, 1192, 1122, 988, 876, 841 and 667 cm⁻¹

3,5-Difluorothiophenol can be prepared according to Dae-Kee Kim, Jongsik Gam et al., J. Med. Chem., 1997, p. 2371.

Example 58

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3-difluorophenyl)prop-2-ynyl]piperidine-3-carboxylic acid

10 A mixture of 0.810 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3-difluorophenyl)prop-2-ynyl]piperidine-3-carboxylate in 8 cm³ of dioxane to which have been added 1.3 cm³ of 5N aqueous sodium hydroxide solution is

15 stirred for 17 hours at a temperature in the region of 60°C. After cooling to approximately 20°C, the reaction mixture is evaporated under reduced pressure (5 kPa) at a temperature in the region of 50°C. The residue obtained is purified by chromatography under a nitrogen

20 pressure of 50 kPa on a column of silica gel (particle size 20-45 µm; diameter 3 cm; mass 45 g), elution being carried out with a dichloromethane/methanol (92/8 by volume) mixture. A fraction of 275 cm³ is first collected, followed by 20-cm³ fractions. Fractions 12 to

25 46 are collected. These fractions are combined and concentrated under reduced pressure (5 kPa) at a

temperature in the region of 35°C. The residue obtained is taken up in dichloromethane and filtered. The filtrate is evaporated as above and then the new residue obtained is triturated in 10 cm³ of diisopropyl ether. The mixture is stirred for 1 hour at a temperature in the region of 20°C and then left for 16 hours. The solid precipitate is separated by filtration and washed with 2 times 10 cm³ of the same solvent and then with 2 times 10 cm³ of pentane. 0.47 g of (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3-difluorophenyl)prop-2-ynyl]piperidine-3-carboxylic acid is obtained in the form of a solid with a white color melting at 92°C.

¹H NMR spectrum (300 MHz, d6-(CD₃)₂SO, δ in ppm): a mixture of diastereoisomers is observed: from 1.40 to 1.95 and from 2.30 to 3.00 (2 series of mts, 12H in all), 3.64 and 3.65 (2s, 2H in all), 3.90 and 3.92 (2s, 3H in all), 5.25 (mt, 1H), 5.52 (unresolved peak, 1H), and 7.15 to 7.30 (mt, 1H), and 7.30 to 7.60 (mt, 5H), 7.93 (d, J = 10 Hz, 1H), 8.70 (d, J = 4.5 Hz, 1H), from 11.90 to 12.80 (very broad unresolved peak, 1H).

Methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3-difluorophenyl)prop-2-ynyl]-piperidine-3-carboxylate

0.16 g of tetrakis(triphenylphosphine)-

palladium, 0.053 g of cuprous iodide and 0.47 cm³ of 1-bromo-2,3-difluorobenzene are added to a mixture, stirred at a temperature in the region of 20°C under an inert atmosphere, of 1.1 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-(prop-2-ynyl)piperidine-3-carboxylate in 11 cm³ of triethylamine. The mixture is heated at a temperature in the region of 80°C for 3 hours 30 minutes. After cooling to approximately 20°C, the reaction mixture is taken up in 30 cm³ of ethyl acetate and 30 cm³ of water and stirred for 15 minutes. The organic phase is separated by settling, while the aqueous layer is extracted with 3 times 30 cm³ of ethyl acetate. The organic extracts are combined, washed with 3 times 30 cm³ of water, dried over sodium sulfate, filtered and concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. The residue obtained is purified by chromatography under a nitrogen pressure of 50 kPa on a column of silica gel (particle size 20-45 µm; diameter 3 cm; 50 g), elution being carried out with pure ethyl acetate. 1 fraction of 300 cm³ is first collected and then 30-cm³ fractions are obtained. Fractions 10 to 30 are combined and evaporated under the above conditions. 0.94 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3-difluorophenyl)prop-2-ynyl]piperidine-3-

carboxylate is obtained in the form of a foam with an orange color.

Infrared spectrum (CH_2Cl_2): 3598, 2951, 1733, 1622, 1489, 1475, 1243, 1227, 1031, 856 and 831 cm^{-1} .

- 5 Methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-(prop-2-ynyl)piperidine-3-carboxylate can be prepared as described in Example 32.

Example 59

- 10 **(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3,5-trifluorophenyl)prop-2-ynyl]piperidine-3-carboxylic acid**

- A solution of 1.7 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3,5-trifluorophenyl)prop-2-ynyl]piperidine-3-carboxylate in 17 cm^3 of dioxane to which have been added 2.58 cm^3 of 5N aqueous sodium hydroxide solution is stirred for 15 hours at a temperature in the region of 60°C . After cooling to a temperature in the region of 20°C , the reaction mixture is concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C . The residue obtained is purified by chromatography under a nitrogen pressure of 50 kPa on a column of silica gel (particle size 20-45 μm ; diameter 3 cm; 50 g), elution being carried out with a dichloromethane/methanol (90/10 by volume) mixture and

first a fraction of 200 cm³ being collected, followed by 23-cm³ fractions. Fractions 3 to 21 are combined and then concentrated as above. A foam is obtained, which product is subjected to a second purification by

5 chromatography under a nitrogen pressure of 50 kPa on a column of silica gel (particle size 20-45 µm; diameter 3 cm; 70 g), elution being carried out with a dichloromethane/methanol (95/5 by volume) mixture and first a fraction of 250 cm³ being collected, then a

10 fraction of 100 cm³ being collected, followed by 20-cm³ fractions. Fractions 1 to 17 are combined and then concentrated as above. A foam is obtained, which takes up in dichloromethane and then in 20 cm³ of a 50/50 mixture of diisopropyl ether and pentane. The

15 crystallized product formed is filtered off, washed with 2 times 10 cm³ of a diisopropyl ether/pentane (50/50 by volume) mixture and then 2 times 10 cm³ of pentane, and dried in the air. 0.524 g of (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-

20 (2,3,5-trifluorophenyl)prop-2-ynyl]piperidine-3-carboxylic acid is obtained in the form of a solid with a cream color melting at approximately 97°C.

¹H NMR spectrum (300 MHz, d₆-(CD₃)₂SO, δ in ppm): a mixture of diastereoisomers in the proportions 50/50 is

25 observed:

from 1.40 to 2.00 (mt, 7H), from 2.35 to 3.00 (mt, 5H),

3.65 and 3.66 (2s, 2H in all), 3.90 and 3.92 (2s, 3H in all), 5.24 (mt, 1H), 5.54 (unresolved peak, 1H), from 7.25 to 7.45 (mt, 3H), from 7.50 to 7.70 (mt, 2H), 7.94 (d, $J = 9.5$ Hz, 1H), 8.71 (d, $J = 4.5$ Hz, 1H).

5 Methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3,5-trifluorophenyl)prop-2-ynyl]piperidine-3-carboxylate

A mixture of 1.95 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-(prop-2-ynyl)piperidine-3-carboxylate in 20 cm³ of triethylamine is stirred for 5 minutes under an inert atmosphere at a temperature in the region of 20°C.

0.284 g of tetrakis(triphenylphosphine)palladium, 0.094 g of cuprous iodide and 1.56 g of 1-bromo-2,3,5-trifluorobenzene are added. The mixture is stirred for 2 hours 30 minutes at a temperature in the region of 80°C. After cooling to approximately 20°C, the reaction mixture has 60 cm³ of ethyl acetate and 60 cm³ of water added. After stirring for 30 minutes, the mixture is separated by settling. After separating off the organic phase, the aqueous layer is extracted with 3 times 30 cm³ of ethyl acetate. The organic extracts are combined, washed with 3 times 30 cm³ of water, dried over sodium sulfate, filtered and concentrated under reduced pressure (5 kPa) at a temperature in the region of 40°C. The residue obtained is purified by

chromatography under a nitrogen pressure of 50 kPa on a column of silica gel (particle size 20-45 μm ; diameter 4 cm; 80 g), elution being carried out with pure ethyl acetate and first a fraction of 100 cm^3 being collected, followed by 20- cm^3 fractions. Fractions 23 to 27 are combined and concentrated as above. 1.3 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3,5-trifluorophenyl)prop-2-ynyl]piperidine-3-carboxylate are obtained in the form of a foam.

Infrared spectrum in CCl_4 : 2950, 1740, 1624, 1496, 1231, 1133, 861 and 845 cm^{-1}

Methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-(prop-2-ynyl)piperidine-3-carboxylate can be prepared as described in Example 32.

Example 60

(3R,4R)-4-[3-(R,S)-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetic acid

A mixture of 1.28 g of methyl (3R,4R)-4-[3-(R,S)-fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetate in 25 cm^3 of dioxane to which have been added 2 cm^3 of 5N aqueous sodium hydroxide solution is stirred for 18 hours at a temperature in the region of 60°C. After evaporating

under reduced pressure (5 kPa) at a temperature in the region of 50°C, the residue is taken up in 50 cm³ of acetone. The acetone is evaporated under reduced pressure (5 kPa) at a temperature in the region of 50°C. The residue is taken up in 75 cm³ of water and 100 cm³ of dichloromethane. The organic phase is separated off. The aqueous phase is extracted twice with 100 cm³ of dichloromethane and then the organic extracts are combined, dried over sodium sulfate, filtered and evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. The solid obtained is taken up in 50 cm³ of diethyl ether and the suspension obtained is stirred for 48 hours at a temperature in the region of 20°C. The solid is filtered off, rinsed with a total of 75 cm³ of diethyl ether and then dried under reduced pressure (5 kPa) at a temperature in the region of 40°C. 1 g of solid is obtained, which product is purified by chromatography under a nitrogen pressure of 100 kPa on a column of silica gel (particle size 60-200 µm; diameter 2 cm; silica height 15 cm), elution being carried out with a chloroform/methanol/aqueous ammonia (24/6/1 by volume) mixture and 20-cm³ fractions being collected. The fractions comprising the product are combined and evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 0.97 g of (3R,4R)-4-

[3-(R,S)-fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetic acid is obtained in the form of a white foam which is a mixture of two diastereoisomers.

5 ¹H NMR spectrum (400 MHz, d6-(CD₃)₂SO with addition of a few drops of d4-CD₃COOD, δ in ppm). A mixture of two diastereoisomers in the proportions 50/50 is observed: from 1.15 to 1.65 (mt, 5H), 1.90 to 2.60 (mt, 7H), 2.61 (mt, 2H), 2.78 (mt, 2H), 2.93 (broad t, J = 7 Hz, 2H),
 10 3.92 and 3.93 (2 s, 3H in all), 6.36 (mt, J_{HF} = 48 Hz, 1H), 7.04 (dd, J = 5.5 and 3.5 Hz, 1H), 7.18 (dd, J = 3.5 and 1 Hz, 1H), 7.29 (mt, 1H), 7.44 (mt, 1H), 7.49 (broad d, J = 4.5 Hz, 1H), 7.59 (dd, J = 5.5 and 1 Hz, 1H), 7.98 (broad d, J = 9 Hz, 1H), 8.77 (d, J = 4.5 Hz,
 15 1H).

Methyl (3R,4R)-4-[3-(R,S)-fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetate

0.62 cm³ of diethylaminosulfur trifluoride is
 20 added over approximately 15 minutes, under an inert atmosphere and at a temperature in the region of 20°C, to a stirred solution of 1.96 g of methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetate in 15 cm³ of
 25 dichloromethane. Stirring is maintained for 18 hours. After adding 30 cm³ of a saturated aqueous sodium

hydrogen carbonate solution, the organic phase is separated by settling. The aqueous phase is extracted twice with 50 cm³ of dichloromethane and then the organic extracts are combined, washed twice with 50 cm³ of distilled water, dried over sodium sulfate, filtered and evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 1.95 g of a yellow oil are obtained, which product is purified by chromatography under a nitrogen pressure of 100 kPa on a column of silica gel (particle size 20-45 µm; diameter 3 cm; silica height 40 cm), elution being carried out with a cyclohexane/ethyl acetate (3/2 by volume) mixture and 80-cm³ fractions being collected. Fractions 32 to 64 are combined and are evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 1.28 g of methyl (3R,4R)-4-[3-(R,S)-fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetate are obtained in the form of a colorless oil.

¹H NMR spectrum (300 MHz, d6-(CD₃)₂SO, δ in ppm). A mixture of two diastereoisomers in the proportions of 60/40 is observed: from 1.10 to 1.60 (mt, 5H), 1.85 to 2.15 (mt, 6H), from 2.20 to 2.80 (mt, 5H), 2.88 (broad t, J = 7 Hz, 2H), 3.53 and 3.55 (2s, 3H in all), 3.93 and 3.94 (2s, 3H in all), 6.40 (mt, J_{HF} = 48 Hz, 1H), 7.03 (dd, J = 5.5 and 3.5 Hz, 1H), 7.15 (broad d, J =

3.5 Hz, 1H), 7.30 (broad d, $J = 1.5$ Hz, 1H), 7.46 (dd, $J = 9$ and 1.5 Hz, 1H), 7.49 (broad d, $J = 4.5$ Hz, 1H), 7.60 (dd, $J = 5.5$ and 1 Hz, 1H), 7.99 (broad d, $J = 9$ Hz, 1H), 8.79 (d, $J = 4.5$ Hz, 1H).

- 5 Methyl (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetate is prepared as described in Example 48.

Example 61

- 10 **(3R,4R)-4-[3-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetic acid, diastereoisomer A**

- 0.5 g of methyl (3R,4R)-4-[3-fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetate, diastereoisomer A ($[\alpha]_D^{20} = -48 \pm 3$ in methanol), in 10 cm³ of dioxane to which has been added 0.77 cm³ of 5N aqueous sodium hydroxide solution, is stirred for 18 hours at a temperature in the region of 60°C. After evaporating
- 20 under reduced pressure (5 kPa) at a temperature in the region of 50°C, 0.6 g of solid is obtained, which solid is purified by chromatography under a nitrogen pressure of 100 kPa on a column of silica gel (particle size 20-45 μ m; diameter 2 cm; silica height 30 cm), elution
- 25 being carried out with a chloroform/methanol/aqueous ammonia (24/6/1 by volume) mixture and 20-cm³ fractions

being collected. The fractions comprising the product are combined and evaporated under reduced pressure (5 kPa) at a temperature in the region of 40°C. 0.27 g of (3R,4R)-4-[3-fluoro-3-(6-methoxyquinolin-4-

5 yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetic acid, diastereoisomer A, is obtained in the form of a white foam ($[\alpha]_D^{20} = -66 \pm 1.2$ in methanol).

^1H NMR spectrum (300 MHz, $\text{d}_6\text{-(CD}_3)_2\text{SO}$, δ in ppm): from 1.20 to 1.55 (mt, 5H), from 1.85 to 2.20 and from 2.35
10 to 2.60 (2 series of mts, 9H in all), 2.68 (mt, 2H), 2.89 (broad t, $J = 7$ Hz, 2H), 3.94 (s, 3H), 6.38 (mt, $J_{\text{HF}} = 48$ Hz, 1H), 7.05 (dd, $J = 5.5$ and 3.5 Hz, 1H), 7.17 (dd, $J = 3.5$ and 1 Hz, 1H), 7.32 (d, $J = 2.5$ Hz, 1H), 7.45 (dd, $J = 9$ and 2.5 Hz, 1H), 7.51 (d, $J =$
15 4.5 Hz, 1H), 7.60 (dd, $J = 5.5$ and 1 Hz, 1H), 7.99 (d, $J = 9$ Hz, 1H), 8.78 (d, $J = 4.5$ Hz, 1H).

Methyl (3R,4R)-4-[3-fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetate, diastereoisomer A

20 **Methyl (3R,4R)-4-[3-fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetate, diastereoisomer B**

3.2 g of methyl (3R,4R)-4-[3-(R,S)-fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-
25 thienylthio)ethyl]piperidine-3-acetate is chromatographed on a column with a length of 30 cm and

a diameter of 8 cm packed with 1 200 g of Chiralcel OD silica (particle size 20 μm). Elution is carried out using a heptane/isopropanol (90/10 by volume) mixture. The flow rate is 140 $\text{cm}^3/\text{minute}$. Detection is by

5 ultraviolet at 265 nm. After several preparative injections, the fractions corresponding to the diastereoisomers A and B are collected. The fractions comprising the diastereoisomers A are concentrated under reduced pressure (5 kPa) at a temperature in the

10 region of 40°C. 1.6 g of methyl (3R,4R)-4-[3-fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetate, diastereoisomer A, are obtained in the form of a thick oil ($[\alpha]_D^{20} = -48 \pm 3$ in methanol at 0.1%). The fractions comprising the

15 diastereoisomers B are concentrated under the same conditions as above. 1.17 g [lacuna] methyl (3R,4R)-4-[3-fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetate, diastereoisomer B, are obtained in the form of a thick oil ($[\alpha]_D^{20} = +82 \pm 3$ in methanol at 0.1%).

20

Diastereoisomer A:

Infrared spectrum (KBr): 2936, 2861, 2805, 2768, 1731, 1623, 1594, 1508, 1475, 1435, 1359, 1229, 1217, 1167, 1108, 1084, 1030, 855, 847 and 830 cm^{-1} .

25 Diastereoisomer B:

Infrared spectrum (KBr): 2932, 2861, 2805, 2768, 1731,

1623, 1594, 1509, 1475, 1435, 1359, 1229, 1217, 1168, 1108, 1083, 1030, 855, 847 and 830 cm^{-1} .

Methyl (3R,4R)-4-[3-(R,S)-fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetate is prepared as described above in Example 60.

Example 62

(3R,4R)-4-[3-Fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetic acid,
10 **diastereoisomer B**

By carrying out the preparation as described in Example 60 but from 0.5 g of methyl (3R,4R)-4-[3-fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetate, diastereoisomer
15 **B** ($[\alpha]_D^{20} = +82$), 0.29 g of (3R,4R)-4-[3-fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)-ethyl]piperidine-3-acetic acid, diastereoisomer B, is obtained in the form of a white foam ($[\alpha]_D^{20} = +66.3 \pm 1.1$).

20 ^1H NMR spectrum (300 MHz, $\text{d}_6\text{-(CD}_3)_2\text{SO}$, δ in ppm): from 1.20 to 1.60 (mt, 5H), from 1.90 to 2.15 and from 2.30 to 2.60 (2 series of mts, 9H in all), 2.68 (mt, 2H), 2.89 (broad t, $J = 7$ Hz, 2H), 3.95 (s, 3H), 6.38 (mt, $J_{\text{HF}} = 48$ Hz, 1H), 7.05 (dd, $J = 5.5$ and 3.5 Hz, 1H),
25 7.18 (dd, $J = 3.5$ and 1 Hz, 1H), 7.32 (d, $J = 2.5$ Hz, 1H), 7.46 (dd, $J = 9$ and 2.5 Hz, 1H), 7.51 (d, $J =$

4.5 Hz, 1H), 7.61 (dd, $J = 5.5$ and 1 Hz, 1H), 7.99 (d, $J = 9$ Hz, 1H), 8.78 (d, $J = 4.5$ Hz, 1H).

Methyl (3R,4R)-4-[3-fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetate, diastereoisomer B, is prepared as described above in Example 61.

Example 63

(3R,4R)-4-[3-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3,5-trifluorophenyl)prop-2-ynyl]piperidine-3-carboxylic acid, diastereoisomer A, and (3R,4R)-4-[3-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3,5-trifluorophenyl)prop-2-ynyl]piperidine-3-carboxylic acid, diastereoisomer B

1.50 g of (3R,4R)-4-[3-(R,S)-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3,5-trifluorophenyl)prop-2-ynyl]piperidine-3-carboxylic acid, dissolved in 200 cm³ of dichloromethane, is chromatographed on a 30-cm column with a diameter of 6 cm packed with 700 g of Kromasil® silica (particle size 10 µm). Elution is carried out using a dichloromethane/acetonitrile/methanol mixture in proportions by volume of 90/5/5. The flow rate is 130 cm³ per minute and detection is by ultraviolet at 265 nm. This operation results, after four preparative injections, in two diastereoisomers being obtained. The fractions corresponding to the first are concentrated

to dryness under reduced pressure (5 kPa) at a temperature in the region of 40°C and then the residue obtained is dried in an oven under reduced pressure (13 Pa) at a temperature in the region of 40°C. 1.9 g of (3R,4R)-4-[3-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3,5-trifluorophenyl)prop-2-ynyl]piperidine-3-carboxylic acid, diastereoisomer A ($[\alpha]_D^{20} = -50.9^\circ \pm 1.4$, in methanol at 0.5%), are obtained in the form of a foam.

¹H NMR spectrum (300 MHz, d6-(CD₃)₂SO, δ in ppm):
 from 1.40 to 2.00 (mt, 7H), from 2.35 to 3.00 (mt, 5H), 3.66 (s, 2H), 3.92 (s, 3H in all), 5.24 (mt, 1H), 5.54 (unresolved peak, 1H), from 7.25 to 7.45 (mt, 3H), from 7.50 to 7.70 (mt, 2H), 7.94 (d, J = 9.5 Hz, 1H), 8.71 (d, J = 4.5 Hz, 1H).

The fractions corresponding to the second diastereoisomer are treated as above. 2.17 g of (3R,4R)-4-[3-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3,5-trifluorophenyl)prop-2-ynyl]piperidine-3-carboxylic acid, diastereoisomer B ($[\alpha]_D^{20} = +67.8^\circ \pm 1.2$, in methanol at 0.5%), are obtained in the form of a foam.

¹H NMR spectrum (300 MHz, d6-(CD₃)₂SO, δ in ppm):
 from 1.40 to 2.00 (mt, 7H), from 2.35 to 3.00 (mt, 5H), 3.65 (s, 2H), 3.90 (s, 3H in all), 5.24 (mt, 1H), 5.54 (unresolved peak, 1H), from 7.25 to 7.45 (mt, 3H), from

7.50 to 7.70 (mt, 2H), 7.94 (d, J = 9.5 Hz, 1H), 8.71 (d, J = 4.5 Hz, 1H).

(3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3,5-trifluorophenyl)prop-2-ynyl]piperidine-3-carboxylic acid can be prepared as described in Example 59.

The present invention also relates to pharmaceutical compositions comprising at least one quinolypropylpiperidine derivative according to the invention, if appropriate in the form of a salt, in the pure state or in the form of a combination with one or more compatible and pharmaceutically acceptable diluents or adjuvants.

The compositions according to the invention can be used orally, parenterally, topically, rectally or in aerosols.

Use may be made, as solid compositions for oral administration, of tablets, pills, hard gelatin capsules, powders or granules. In these compositions, the active product according to the invention is mixed with one or more inert diluents or adjuvants, such as sucrose, lactose or starch. These compositions can comprise substances other than diluents, for example a lubricant, such as magnesium stearate, or a coating intended for controlled release.

Use may be made, as liquid compositions for

oral administration, of solutions which are pharmaceutically acceptable, suspensions, emulsions, syrups and elixirs comprising inert diluents, such as water or liquid paraffin. These compositions can also
5 comprise substances other than diluents, for example wetting, sweetening or flavoring products.

The compositions for parenteral administration can be emulsions or sterile solutions. Use may be made, as solvent or vehicle, of water,
10 propylene glycol, a polyethylene glycol, vegetable oils, in particular olive oil, or injectable organic esters, for example ethyl oleate. These compositions can also comprise adjuvants, in particular wetting, isotonizing, emulsifying, dispersing and stabilizing
15 agents.

Sterilization can be carried out in several ways, for example using a bacteriological filter, by irradiation or by heating. They can also be prepared in the form of sterile solid compositions which can be
20 dissolved at the time of use in sterile water or any other injectable sterile medium.

The compositions for topical administration can be, for example, creams, ointments, lotions or aerosols.

25 The compositions by rectal administration are suppositories or rectal capsules which comprise, in

addition to the active principle, excipients such as cocoa butter, semi-synthetic glycerides or polyethylene glycols.

The compositions can also be aerosols. For use in the form of liquid aerosols, the compositions can be stable sterile solutions or solid compositions dissolved at the time of use in apyrogenic sterile water, in saline or any other pharmaceutically acceptable vehicle. For use in the form of dry aerosols intended to be directly inhaled, the active principle is finely divided and combined with a water-soluble solid diluent or vehicle with a particle size of 30 to 80 μm , for example dextran, mannitol or lactose.

In human therapeutics, the novel quinolypropylpiperidine derivatives according to the invention are of particular use in the treatment of infections of bacterial origin. The doses depend on the desired effect and on the duration of the treatment. The doctor will determine the dosage which he considers the most appropriate according to the treatment and according to the age, weight, stage of the infection and other factors specific to the subject to be treated. The doses are generally between 750 mg and 3 g of active product, the taking of which doses is spread over 2 or 3 occasions, per day orally or between 400 mg and 1.2 g intravenously for an adult.

The following example illustrates a composition according to the invention.

EXAMPLE 1

5 A liquid composition intended for parenteral use is prepared according to the usual technique comprising:

- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-carboxylic acid 125 mg
- Glucose q.s. for 2.5%
- Sodium hydroxide
 q.s. for pH = 4-4.5
- Water for Injections q.s. for 20 ml

10 EXAMPLE 2

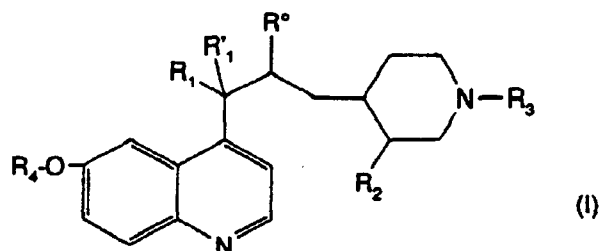
 A liquid composition intended for parenteral use is prepared according to the usual technique comprising:

- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetic acid 125 mg
- (3R,4R)-4-[3-(R,S)-Hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-

3-acetic acid		125 mg
• Glucose	q.s. for 2.5%	
• Sodium hydroxide		
	q.s. for pH = 4-4.5	
• Water for Injections		q.s. for 20 ml

CLAIMS

1. A quinolypropylpiperidine derivative of general formula:



5

in which:

R_1 is a hydrogen or halogen atom or a hydroxyl radical,
 R'_1 is a hydrogen atom or can represent halogen when R_1
 is also a halogen atom, and

10 R° is a hydrogen atom, or else

R_1 and R° together form a bond and

R'_1 is a hydrogen atom, and

15 either

R_2 represents a carboxyl, carboxymethyl or 2-carboxy-ethyl radical,

R_3 represents an alkyl radical (1 to 6 carbon atoms)

20 substituted by 1 to 3 substituents chosen from hydroxyl, halogen, oxo, carboxyl, alkyloxycarbonyl, alkyloxy or alkylthio or from a phenyl, phenylthio or phenylalkylthio radical, which can themselves carry 1 to 4 substituents [chosen from halogen, hydroxyl,

alkyl, alkyloxy, trifluoromethyl, trifluoromethoxy, carboxyl, alkyloxycarbonyl, cyano, acetamido (1 to 4C) or amino], or from a cycloalkyl or cycloalkylthio radical, the cyclic part of which comprises 3 to 7

5 members, or from a 5- to 6-membered aromatic heterocyclyl or heterocyclylthio radical comprising 1 to 4 heteroatoms chosen from nitrogen, oxygen or sulfur and optionally themselves substituted [by halogen, hydroxyl, alkyl, alkyloxy, trifluoromethyl, trifluoromethoxy, oxo, carboxyl, alkyloxycarbonyl,

10 cyano or amino], or R_3 represents a propargyl radical substituted by a phenyl radical which can itself carry 1 to 4 substituents [chosen from halogen, hydroxyl, alkyl, alkyloxy, trifluoromethyl, trifluoromethoxy, carboxyl, alkyloxycarbonyl, cyano or amino] or

15 substituted by a cycloalkyl radical comprising 3 to 7 members or substituted by a 5- to 6-membered aromatic heterocyclyl radical comprising 1 to 4 heteroatoms chosen from nitrogen, oxygen or sulfur and optionally

20 itself substituted [by halogen, hydroxyl, alkyl, alkyloxy, trifluoromethyl, trifluoromethoxy, oxo, carboxyl, alkyloxycarbonyl, cyano or amino], or R_3 represents cinnamyl or 4-phenylbuten-3-yl, and R_4 represents an alkenyl- CH_2 - or alkynyl- CH_2 -

25 radical, the alkenyl or alkynyl parts of which comprise 2 to 6 carbon atoms,

or

R_2 represents a carboxyl, carboxymethyl or 2-carboxyethyl radical, and

- 5 R_3 represents an alkyl radical (1 to 6 carbon atoms) substituted by 1 to 3 substituents chosen from halogen, oxo, carboxyl, alkyloxycarbonyl or alkylthio or from a phenylthio or phenylalkylthio radical, which can themselves carry 1 to 4 substituents [chosen from
- 10 halogen, hydroxyl, alkyl, alkyloxy, trifluoromethyl, trifluoromethoxy, carboxyl, alkyloxycarbonyl, cyano, acetamido (1 to 4C) or amino], or from a cycloalkylthio radical, the cyclic part of which comprises 3 to 7 members, or from a 5- to 6-membered aromatic
- 15 heterocyclylthio radical comprising 1 to 4 heteroatoms chosen from nitrogen, oxygen or sulphur and optionally themselves substituted [by halogen, hydroxyl, alkyl, alkyloxy, trifluoromethyl, trifluoromethoxy, oxo, carboxyl, alkyloxycarbonyl, cyano or amino], or R_3
- 20 represents a propargyl radical substituted by a phenyl radical which can itself carry 1 to 4 substituents [chosen from halogen, hydroxyl, alkyl, alkyloxy, trifluoromethyl, trifluoromethoxy, carboxyl, alkyloxycarbonyl, cyano or amino] or substituted by a
- 25 cycloalkyl radical comprising 3 to 7 members or substituted by 5- to 6-membered aromatic heterocyclyl radical comprising 1 to 4 heteroatoms chosen from nitrogen, oxygen or sulphur and optionally itself

substituted [by halogen, hydroxyl, alkyl, alkyloxy, trifluoromethyl, trifluoromethoxy, oxo, carboxyl, alkyloxycarbonyl, cyano or amino],

5 and R_4 represents an alkyl radical (comprising 1 to 6 carbon atoms), or else

R_2 represents a hydroxymethyl, alkyloxycarbonyl, alkyloxycarbonylmethyl or 2-(alkyloxycarbonyl)ethyl
10 radical (the alkyl parts of which comprise 1 to 6C) and R_3 represents an alkyl radical (1 to 6 carbon atoms) substituted by a phenylthio radical which can itself carry 1 to 4 substituents [chosen from halogen, hydroxyl, alkyl, alkyloxy, trifluoromethyl, trifluoromethoxy, carboxyl, alkyloxycarbonyl, cyano or
15 amino], by a cycloalkylthio radical, the cyclic part of which comprises 3 to 7 members, or by a 5- to 6-membered aromatic heterocyclylthio radical comprising 1 to 4 heteroatoms chosen from nitrogen, oxygen or
20 sulfur and optionally itself substituted [by halogen, hydroxyl, alkyl, alkyloxy, trifluoromethyl, trifluoromethoxy, oxo, carboxyl, alkyloxycarbonyl, cyano or amino] or R_3 represents a propargyl radical substituted by a phenyl radical which can itself carry
25 1 to 4 substituents [chosen from halogen, hydroxyl, alkyl, alkyloxy, trifluoromethyl, trifluoromethoxy, carboxyl, alkyloxycarbonyl, cyano or amino] or substituted by a cycloalkyl radical comprising 3 to 7

members or substituted by a 5- to 6-membered aromatic heterocyclyl radical comprising 1 to 4 heteroatoms chosen from nitrogen, oxygen or sulfur and optionally itself substituted [by halogen, hydroxyl, alkyl, 5 alkyloxy, trifluoromethyl, trifluoromethoxy, oxo, carboxyl, alkyloxycarbonyl, cyano or amino],

and R_4 represents an alkyl radical (comprising 1 to 6 carbon atoms), an alkenyl- CH_2 - radical or an alkynyl-
10 CH_2 - radical, the alkenyl or alkynyl parts of which comprise 2 to 6 carbon atoms,

it being understood that the alkyl radicals and portions are straight- or branched-chain radicals and
15 protions and comprise, except when specifically mentioned, 1 to 4 carbon atoms,

in its diastereoisomeric forms or their mixtures, as well as its salts.

20 2. A quinolypropylpiperidine derivative according to claim 1, characterized in that

R_1 is a hydrogen or halogen atom or a hydroxyl radical,

R'_1 is a hydrogen atom, and

25 R^0 is a hydrogen atom, or else

R_1 and R^0 together form a bond and

R'_1 is a hydrogen atom,

R_2 represents a carboxyl or carboxymethyl radical, and
 R_3 represents an alkyl radical (1 to 6 carbon atoms)
substituted by 1 to 3 substituents chosen from halogen,
5 oxo or alkylthio or from a phenylthio radical, which
can themselves carry 1 to 4 halogen atoms, or from a
cycloalkylthio radical, the cyclic part of which
comprises 3 to 7 members, or from a 5- to 6-membered
aromatic heterocyclylthio radical comprising 1 to 4
10 heteroatoms chosen from nitrogen, oxygen or sulfur and
optionally themselves substituted by halogen, or R_3
represents a propargyl radical substituted by a phenyl
radical which can itself carry 1 to 3 halogen
substituents or a propargyl radical substituted by a 5-
15 to 6-membered aromatic heterocyclyl radical comprising
1 to 4 heteroatoms chosen from nitrogen, oxygen or
sulfur, or else

R_2 represents a hydroxymethyl, alkyloxycarbonyl or
20 alkyloxycarbonylmethyl radical (the alkyl portions of
which comprise 1 to 6 carbon atoms) and
 R_3 represents an alkyl radical (1 to 6 carbon atoms)
substituted by a 5- to 6-membered aromatic
heterocyclylthio radical comprising 1 to 4 heteroatoms
25 chosen from nitrogen, oxygen or sulfur, or R_3
represents a propargyl radical substituted by a 5- to
6-membered aromatic heterocyclyl radical comprising 1
to 4 heteroatoms chosen from nitrogen, oxygen or

sulfur, and

R₄ represents an alkyl radical (comprising 1 to 6 carbon atoms),

5

the alkyl radicals and portions being straight- or branched-chain radicals and portions, in its diastereoisomeric forms or their mixtures, as well as its salts.

10

3. A quinolypropylpiperidine derivative according to either of claims 1 and 2, characterized in that it is (3R,4R)-4-[3-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetic acid, in its diastereoisomeric forms or their mixtures, as well as its salts.

15

4. A quinolypropylpiperidine derivative according to either of claims 1 and 2, characterized in that it is (3R,4R)-4-[3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-acetic acid, as well as its salts.

20

5. A quinolypropylpiperidine derivative according to either of claims 1 and 2, characterized in that it is (3R,4R)-4-[3-fluoro-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylsulfanyl)ethyl]piperidine-3-acetic acid, in its diastereoisomeric forms or their mixtures, as well as its salts.

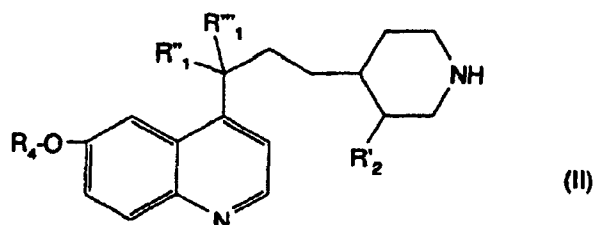
25

6. A quinolypropylpiperidine derivative according to either of claims 1 and 2, characterized in

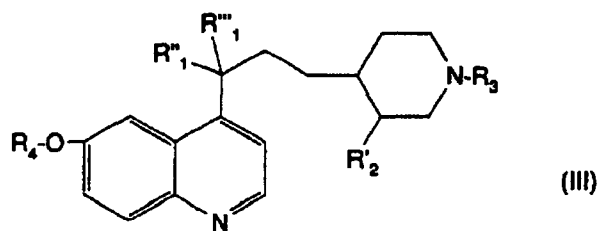
that it is (3R,4R)-1-[2-(3-fluorophenylthio)ethyl]-4-[3-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]piperidine-3-acetic acid, in its diastereoisomeric forms or their mixtures, as well as its salts.

5 7. A quinolypropylpiperidine derivative according to either of claims 1 and 2, characterized in that it is (3R,4R)-4-[3-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[3-(2,3,5-trifluorophenyl)prop-2-ynyl]piperidine-3-carboxylic acid, in its
10 diastereoisomeric forms or their mixtures, as well as its salts.

8. A process for the preparation of quinolypropylpiperidine derivative according to claim 1, characterized in that the R_3 chain defined in
15 claim 1 is condensed onto the quinolypropylpiperidine derivative of general formula:



in which R_4 is defined as in claim 1, R''_1 and R'''_1 represent hydrogen atoms or together form an oxo
20 radical and R'_2 represents a protected carboxyl, carboxymethyl or 2-carboxyethyl radical, or an alkyloxycarbonyl, alkyloxycarbonylmethyl or 2-(alkyloxycarbonyl)ethyl radical, in order to obtain a quinolypropylpiperidine derivative of general formula:



in which R''_1 , R'''_1 , R'_2 and R_4 are defined as above
and R_3 is defined as in claim 1,

5 then, if appropriate, the acid-protecting radical is removed,

or else, if appropriate, the oxo radical represented by R''_1 and R'''_1 is reduced to an alcohol in which R_1
10 represents hydroxyl, then, optionally, halogenation is carried out, if it is desired to obtain a quinolypropylpiperidine derivative in which R_1 is a halogen atom, and, optionally, dehydrohalogenation of the corresponding halogenated derivative is carried
15 out, in order to obtain a quinolypropylpiperidine derivative in which R_1 and R^0 together form a bond, or else dihalogenation of the product of general formula (III) in which R''_1 and R'''_1 together form an oxo radical is carried out, in order to obtain a
20 quinolypropylpiperidine derivative in which R_1 and R'_1 are halogen atoms,

and/or, if appropriate, the acid, protected in the form of an R'_2 radical, in the 3-position of the piperidine
25 is reduced to a hydroxymethyl radical and optionally

converted to a carboxymethyl or 2-carboxyethyl radical according to the usual methods,

then, optionally, the acid-protecting radical is
5 removed and/or, if appropriate, the diastereoisomers are separated and the product obtained is optionally converted to a salt.

9. A process according to claim 2,
characterized in that the condensation of the R_3 chain
10 onto the piperidine is carried out by the action of a derivative of general formula:



in which R_3 is defined as previously and X represents a
halogen atom, a methylsulfonyl radical, a trifluoro-
15 methylsulfonyl radical or a p-toluenesulfonyl radical.

10. A process according to either of
claims 2 and 3, characterized in that, when R_3
represents propargyl substituted by phenyl, cycloalkyl
or heterocyclyl, the reaction is preferably carried out
20 by condensation of a propargyl halide and then
substitution of the chain with a phenyl, cycloalkyl or
heterocyclyl radical.

11. Pharmaceutical composition,
characterized in that it comprises at least one
25 derivative according to claim 1 in the pure state or in
combination with one or more compatible and
pharmaceutically acceptable diluents or adjuvants.

12. A quinolylpropylpiperidine derivative according to either of claims 1 and 2, characterised in that it is (3R,4R)-4-[3-hydroxy-3-(6-methoxyquinolin-4-yl)propyl]-1-[2-(2-thienylthio)ethyl]piperidine-3-carboxylic acid, in its diastereomeric forms or their mixtures, or a salt thereof.

13. A derivative according to claim 1, substantially as herein described and illustrated.

14. A process according to claim 8, substantially as herein described and illustrated.

15. A composition according to claim 11, substantially as herein described and illustrated.

16. A new derivative, a new process for preparing a derivative, or a new composition, substantially as herein described.