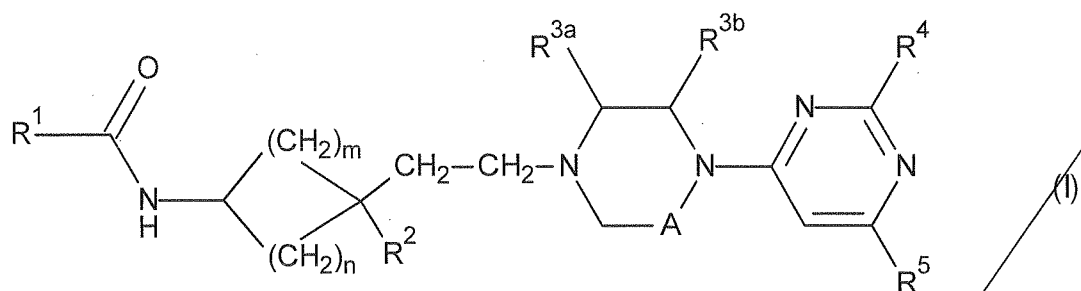


4a(i)



where

m is 1 or 2,

n is 1 or 2,

5 A is selected from the group consisting of CH₂, CH₂CH₂, CHFCH₂ and CF₂CH₂,

R¹ is hydrogen or C₁-C₃-alkyl,

R² is selected from the group consisting of hydrogen and fluorine,

R^{3a} is selected from the group consisting of hydrogen and methyl,

10 R^{3b} is selected from the group consisting of hydrogen and methyl,

R⁴ is branched C₄-C₆ alkyl or branched fluorinated C₄-C₆ alkyl, and

R⁵ is an oxygen containing radical selected from the group consisting of C₁-C₂-alkoxy-C₁-C₄-alkyl, fluorinated C₁-C₂-alkoxy-C₁-C₄-alkyl, hydroxy-C₁-C₄-alkyl, fluorinated hydroxy-C₁-C₄-alkyl, oxetanyl, fluorinated oxetanyl, oxolanyl, fluorinated oxolanyl,

C₃-C₅ cycloalkyl, fluorinated C₃-C₅ cycloalkyl, where the cycloalkyl moiety in the last two mentioned radicals carries 1 or 2 radicals selected from

hydroxyl, C₁-C₂-alkoxy and fluorinated C₁-C₂-alkoxy and may additionally carry 1 or 2 radicals selected from C₁-C₂-alkyl and fluorinated C₁-C₂-alkyl,

20 C₃-C₅ cycloalkoxy-C₁-C₄-alkyl and fluorinated C₃-C₅ cycloalkoxy-C₁-C₄-alkyl, where the cycloalkoxy moiety in the last two mentioned radicals may carry 1 or 2 radicals selected from hydroxyl, C₁-C₂-alkoxy, fluorinated C₁-C₂-alkoxy, C₁-C₂-alkyl and fluorinated C₁-C₂-alkyl,

25 the N-oxides, the prodrugs and the pharmaceutically acceptable salts of these compounds;

4a(ii)

- where the prodrugs are selected from compounds I carrying an OH group, where the hydrogen atom of the OH group is substituted by a C₁-C₄-alkylcarbonyl group, by benzoyl, by an amino acid, selected from glycine, alanine, serine and phenylalanine, which is linked to the oxygen of the OH group via the carbonyl group of the amino acid;
- 5 or by a group of the formula $-C(=O)-O-CH(R^p)-O-C(=O)-R^q$ in which R^p and R^q are independently of one another C₁-C₄-alkyl.

In one aspect, there is provided a compound as disclosed herein for the use as a medicament.

In one aspect, there is provided a pharmaceutical composition comprising at least one compound as disclosed herein, optionally together with at least one physiologically acceptable carrier or auxiliary substance.

5 In one aspect, there is provided a use of at least one compound as disclosed herein in the manufacture of a medicament for treating a medical disorder or condition susceptible to treatment with a dopamine D₃ receptor ligand.

In one aspect, there is provided the use of at least one compound as disclosed herein in the manufacture of a medicament for treating a disorder or condition of the central nervous system.

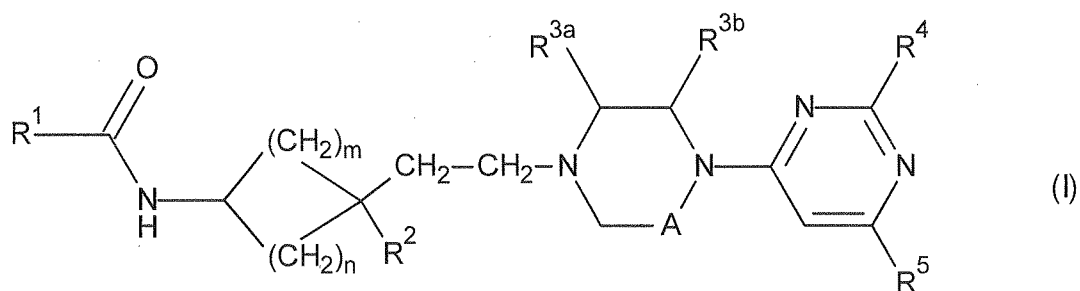
10 In one aspect, there is provided the use of at least one compound as disclosed herein in the manufacture of a medicament for treating Parkinson's disease, schizophrenia, bipolar disorder, depression, motivation disturbances, anxiety, cognitive dysfunction, pain, disorder associated with drug abuse, and eating disorders.

15 In one aspect, there is provided the use of at least one compound as disclosed herein in the manufacture of a medicament for treating renal function disorders, such as diabetic nephropathy.

The present disclosure is thus based on the object of providing compounds which selectively bind to the dopamine D₃ receptor at low concentrations.

20 The compounds are further intended to display at least one of the properties i. to viii. mentioned above, in particular high selectivity with regard to dopamine D₃ receptor

4a(i)



where

m is 1 or 2,

n is 1 or 2,

5 A is selected from the group consisting of CH₂, CH₂CH₂, CHFCH₂ and CF₂CH₂,

R¹ is hydrogen or C₁-C₃-alkyl,

R² is selected from the group consisting of hydrogen and fluorine,

R^{3a} is selected from the group consisting of hydrogen and methyl,

10 R^{3b} is selected from the group consisting of hydrogen and methyl,

R⁴ is branched C₄-C₆ alkyl or branched fluorinated C₄-C₆ alkyl, and

R⁵ is an oxygen containing radical selected from the group consisting of C₁-C₂-alkoxy-C₁-C₄-alkyl, fluorinated C₁-C₂-alkoxy-C₁-C₄-alkyl, hydroxy-C₁-C₄-alkyl, fluorinated hydroxy-C₁-C₄-alkyl, oxetanyl, fluorinated oxetanyl, oxolanyl, fluorinated oxolanyl,

15 C₃-C₅ cycloalkyl, fluorinated C₃-C₅ cycloalkyl, where the cycloalkyl moiety in the last two mentioned radicals carries 1 or 2 radicals selected from hydroxyl, C₁-C₂-alkoxy and fluorinated C₁-C₂-alkoxy and may additionally carry 1 or 2 radicals selected from C₁-C₂-alkyl and fluorinated C₁-C₂-alkyl, 20 C₃-C₅ cycloalkoxy-C₁-C₄-alkyl and fluorinated C₃-C₅ cycloalkoxy-C₁-C₄-alkyl, where the cycloalkoxy moiety in the last two mentioned radicals may carry 1 or 2 radicals selected from hydroxyl, C₁-C₂-alkoxy, fluorinated C₁-C₂-alkoxy, C₁-C₂-alkyl and fluorinated C₁-C₂-alkyl,

and the pharmaceutically acceptable salts of these compounds.

25 In one aspect, there is provided a compound as disclosed herein for use as a medicament.

In one aspect, there is provided a pharmaceutical composition comprising at least one compound as disclosed herein, optionally together with at least one physiologically acceptable carrier or auxiliary substance.

5 In one aspect, there is provided a use of at least one compound as disclosed herein in the manufacture of a medicament for treating a medical disorder or condition susceptible to treatment with a dopamine D₃ receptor ligand.

In one aspect, there is provided the use of at least one compound as disclosed herein in the manufacture of a medicament for treating a disorder or condition of the central nervous system.

10 In one aspect, there is provided the use of at least one compound as disclosed herein in the manufacture of a medicament for treating Parkinson's disease, schizophrenia, bipolar disorder, depression, motivation disturbances, anxiety, cognitive dysfunction, pain, substance dependence, substance abuse, substance tolerance, substance withdrawal, anorexia and weight loss.

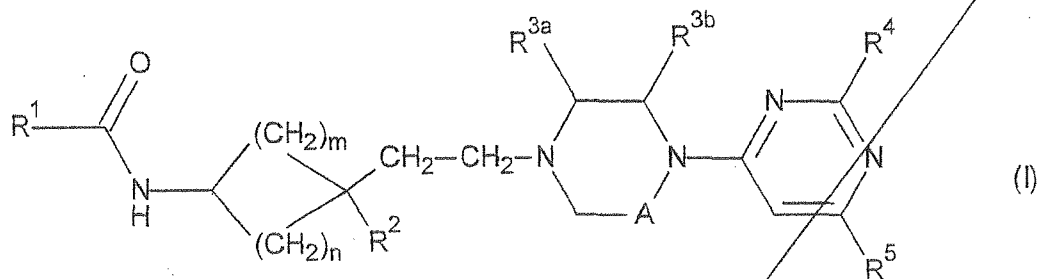
15 In one aspect, there is provided the use of at least one compound as disclosed herein in the manufacture of a medicament for treating diabetic nephropathy.

The present disclosure is thus based on the object of providing compounds which selectively bind to the dopamine D₃ receptor at low concentrations.

20 The compounds are further intended to display at least one of the properties i. to viii. mentioned above, in particular high selectivity with regard to dopamine D₃ receptor

We claim:

1. A compound of the formula I



where

m is 1 or 2,

n is 1 or 2,

A is selected from the group consisting of CH₂, CH₂CH₂, CHFCH₂ and CF₂CH₂,

R¹ is hydrogen or C₁-C₃-alkyl,

R² is selected from the group consisting of hydrogen and fluorine,

R^{3a} is selected from the group consisting of hydrogen and methyl,

R^{3b} is selected from the group consisting of hydrogen and methyl,

R⁴ is branched C₄-C₆ alkyl or branched fluorinated C₄-C₆ alkyl, and

R⁵ is an oxygen containing radical selected from the group consisting of C₁-C₂-alkoxy-C₁-C₄-alkyl, fluorinated C₁-C₂-alkoxy-C₁-C₄-alkyl, hydroxy-C₁-C₄-alkyl, fluorinated hydroxy-C₁-C₄-alkyl, oxetanyl, fluorinated oxetanyl, oxolanyl, fluorinated oxolanyl,

C₃-C₅ cycloalkyl, fluorinated C₃-C₅ cycloalkyl, where the cycloalkyl moiety in the last two mentioned radicals carries 1 or 2 radicals selected from hydroxyl, C₁-C₂-alkoxy and fluorinated C₁-C₂-alkoxy and may additionally carry 1 or 2 radicals selected from C₁-C₂-alkyl and fluorinated C₁-C₂-alkyl, C₃-C₅ cycloalkoxy-C₁-C₄-alkyl and fluorinated C₃-C₅ cycloalkoxy-C₁-C₄-alkyl, where the cycloalkoxy moiety in the last two mentioned radicals may carry 1 or 2 radicals selected from hydroxyl, C₁-C₂-alkoxy, fluorinated C₁-C₂-alkoxy, C₁-C₂-alkyl and fluorinated C₁-C₂-alkyl,

the N-oxides, the prodrugs and the pharmaceutically acceptable salts of these compounds;

where the prodrugs are selected from compounds I carrying an OH group, where the hydrogen atom of the OH group is substituted by a C₁-C₄-alkylcarbonyl group, by benzoyl, by an amino acid, selected from glycine, alanine, serine and phenylalanine, which is linked to the oxygen of the OH group via the carbonyl group of the amino acid; or by a group of the formula -C(=O)-O-CHR^p-O-C(=O)-R^q in which R^p and R^q are independently of one another C₁-C₄-alkyl.

10

2. The compound of claim 1, wherein R¹ is hydrogen or methyl.

3. The compound of claim 1, wherein R¹ is methyl.

15

4. The compound of claim 1, wherein R¹ is hydrogen.

5. The compound of any of the preceding claims, wherein R² is hydrogen.

6. The compound of any of the preceding claims, wherein m is 2.

20

7. The compound of any of the preceding claims, wherein n is 2.

8. The compound of any of claims 1 to 7, wherein both m and n are 1.

25

9. The compound of any of the preceding claims, wherein R^{3a} and R^{3b} are hydrogen.

10. The compound of any claims 1 to 8, wherein either R^{3a} is methyl and R^{3b} is hydrogen or R^{3a} is hydrogen and R^{3b} is methyl.

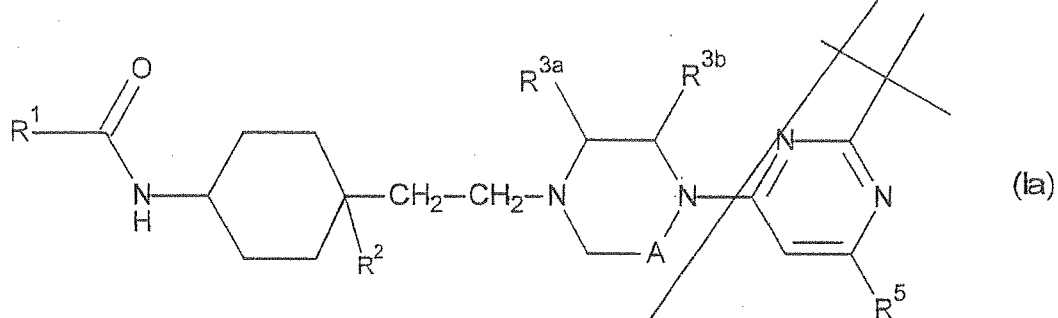
30

11. The compound of any of the preceding claims, wherein A is CH₂.

12. The compound of any of claims 1 to 10, wherein A is CH_2CH_2 , CHFCH_2 or CF_2CH_2 .
13. The compound of any of the preceding claims, wherein R^4 is branched C_4 - C_6 alkyl
5 and in particular tert.-butyl.
14. The compound of any of the preceding claims, wherein R^5 is selected from the group consisting of C_1 - C_2 -alkoxy- C_1 - C_2 -alkyl, fluorinated C_1 - C_2 -alkoxy- C_1 - C_2 -alkyl and hydroxy- C_1 - C_4 -alkyl.
15. The compound of claim 14, wherein R^5 is selected from the group consisting of methoxymethyl, ethoxymethyl, 2-methoxyethyl, difluoromethoxymethyl, 2-(difluoromethoxy)ethyl, trifluoromethoxymethyl, 2-(trifluoromethoxy)ethyl, methoxydifluoromethyl, ethoxydifluoromethyl, 2-methoxy-1,1-difluoroethyl,
10 hydroxymethyl, 2-hydroxyethyl, 2-hydroxypropyl and 2-hydroxy-2-methylpropyl.
16. The compound of claim 14, wherein R^5 is C_1 - C_2 -alkoxy- C_1 - C_2 -alkyl.
17. The compound of any of the claims 1 to 13, wherein R^5 is selected from the group
20 consisting of oxetanyl, fluorinated oxetanyl, oxolanyl, fluorinated oxolanyl, and C_3 - C_5 cycloalkyl, which carries 1 or 2 radicals selected from hydroxy and C_1 - C_2 -alkoxy.
18. The compound of claim 17, wherein R^5 is selected from the group consisting of 2-oxetanyl, 3-oxetanyl, 2-oxolanyl, 3-oxolanyl, 3-methoxycyclobutyl and 3-hydroxycyclobutyl.
25
19. The compound of any of the preceding claims, wherein
30 A is CH_2 , CH_2CH_2 , CHFCH_2 or CF_2CH_2 ;
 R^1 is hydrogen or methyl;
 R^2 is hydrogen;

R^{3a} and R^{3b} are hydrogen or either R^{3a} is methyl and R^{3b} is hydrogen or R^{3a} is hydrogen and R^{3b} is methyl; and
 R^4 is tert-butyl.

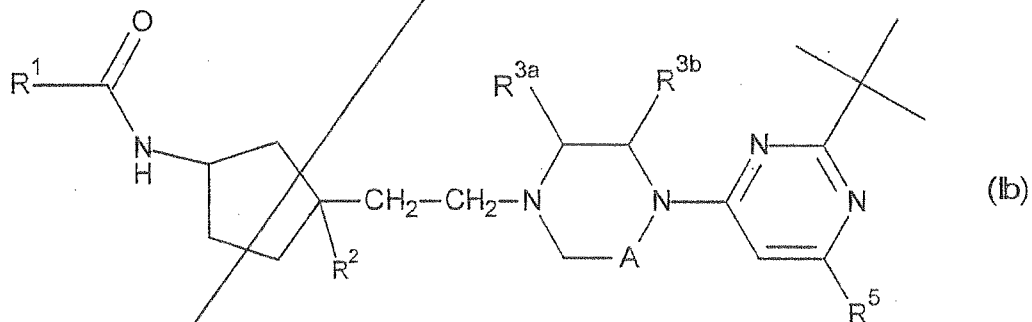
20. The compound of any of the preceding claims, which is a compound of the formula Ia,



where R^2 is H and R^1 , R^{3a} , R^{3b} , R^5 and A are as defined in any one of the preceding claims, the N-oxides, the prodrugs and the pharmaceutically acceptable salts of these compounds.

10

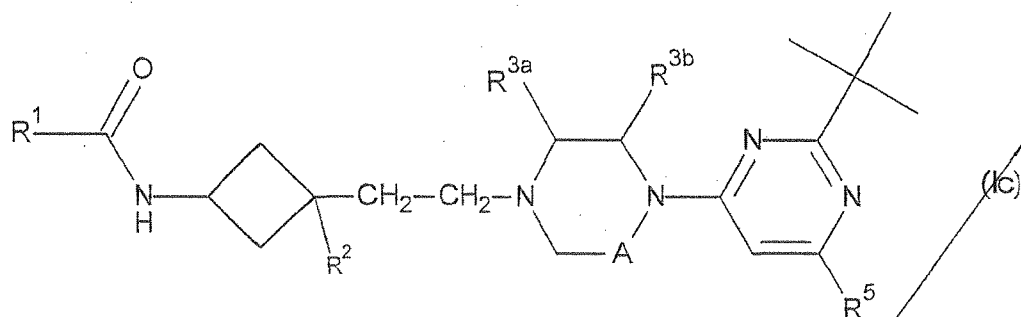
21. The compound of any of claims 1 to 19, which is a compound of the formula Ib,



where R^2 is H and R^1 , R^{3a} , R^{3b} , R^5 and A are as defined in any one of the preceding claims, the N-oxides, the prodrugs and the pharmaceutically acceptable salts of these compounds.

15

22. The compound of any of claims 1 to 19, which is a compound of the formula Ic,



where R^2 is H and R^1 , R^{3a} , R^{3b} , R^5 and A are as defined in any one of the preceding claims, the N-oxides, the prodrugs and the pharmaceutically acceptable salts of these compounds.

5

23. The compound of any of the preceding claims, where in formulae I or Ia or Ic the radical $R^1-C(=O)-NH$ and the radical R^2 predominately adopt cis-configuration.

10

24. The compound of any of claims 1 to 22, where formulae in I or Ia or Ic the radical $R^1-C(=O)-NH$ and the radical R^2 predominately adopt trans-configuration.

25. The compound according to claim 1, selected from the group consisting of:

15

N-[4-[2-[4-[2-tert-butyl-6-(ethoxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]acetamide,

N-[4-[2-[4-[2-tert-butyl-6-(ethoxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]formamide,

N-[4-[2-[4-[2-tert-butyl-6-(methoxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]acetamide,

20

N-[4-[2-[4-[2-tert-butyl-6-(methoxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]formamide,

N-[4-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]acetamide,

N-[4-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]formamide,

25

N-[4-[2-[4-[2-tert-butyl-6-(ethoxydifluoromethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]acetamide,

- N-[4-[2-[4-[2-tert-butyl-6-(ethoxydifluoromethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]formamide,
N-[4-[2-[4-[2-tert-butyl-6-(1,1-difluoro-2-methoxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]acetamide,
5 N-[4-[2-[4-[2-tert-butyl-6-(1,1-difluoro-2-methoxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]formamide,
N-[4-[2-[4-[2-tert-butyl-6-(2-difluoromethoxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]acetamide,
N-[4-[2-[4-[2-tert-butyl-6-(2-difluoromethoxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]formamide,
10 N-[4-[2-[4-[2-tert-butyl-6-(2-trifluoromethoxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]acetamide,
N-[4-[2-[4-[2-tert-butyl-6-(2-trifluoromethoxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]formamide,
15 N-[4-[2-[4-[2-tert-butyl-6-(oxetan-3-yl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]acetamide,
N-[4-[2-[4-[2-tert-butyl-6-(oxetan-3-yl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]formamide,
N-[4-[2-[4-[2-tert-butyl-6-(oxetan-2-yl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]acetamide,
20 N-[4-[2-[4-[2-tert-butyl-6-(oxetan-2-yl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]formamide,
N-[4-[2-[4-[2-tert-butyl-6-(oxolan-3-yl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]acetamide,
25 N-[4-[2-[4-[2-tert-butyl-6-(oxolan-3-yl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]formamide,
N-[4-[2-[4-[2-tert-butyl-6-(3-methoxycyclobutyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]acetamide,
N-[4-[2-[4-[2-tert-butyl-6-(3-methoxycyclobutyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]formamide,
30 N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]acetamide,

- N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxypropyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]acetamide,
- 5 N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxypropyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxy-2-methylpropyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxy-2-methylpropyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]formamide,
- 10 N-[4-[2-[4-[2-tert-butyl-6-(3-hydroxycyclobutyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(3-hydroxycyclobutyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]formamide,
- 15 N-[4-[2-[4-[2-tert-butyl-6-(ethoxymethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(ethoxymethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(methoxymethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- 20 N-[4-[2-[4-[2-tert-butyl-6-(methoxymethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- 25 N-[4-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(ethoxydifluoromethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(ethoxydifluoromethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- 30 N-[4-[2-[4-[2-tert-butyl-6-(1,1-difluoro-2-methoxyethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,

- N-[4-[2-[4-[2-tert-butyl-6-(1,1-difluoro-2-methoxyethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-difluoromethoxyethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- 5 N-[4-[2-[4-[2-tert-butyl-6-(2-difluoromethoxyethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-trifluoromethoxyethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-trifluoromethoxyethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- 10 N-[4-[2-[4-[2-tert-butyl-6-(oxetan-3-yl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(oxetan-3-yl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- 15 N-[4-[2-[4-[2-tert-butyl-6-(oxetan-2-yl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(oxetan-2-yl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- 20 N-[4-[2-[4-[2-tert-butyl-6-(oxolan-3-yl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(oxolan-3-yl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(3-methoxycyclobutyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- 25 N-[4-[2-[4-[2-tert-butyl-6-(3-methoxycyclobutyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxyethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxyethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- 30 N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxypropyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,

- N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxypropyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxy-2-methylpropyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- 5 N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxy-2-methylpropyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(3-hydroxycyclobutyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(3-hydroxycyclobutyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- 10 N-[4-[2-[4-[2-tert-butyl-6-(ethoxymethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(ethoxymethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- 15 N-[4-[2-[4-[2-tert-butyl-6-(methoxymethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(methoxymethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- 20 N-[4-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(ethoxydifluoromethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- 25 N-[4-[2-[4-[2-tert-butyl-6-(ethoxydifluoromethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(1,1-difluoro-2-methoxyethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(1,1-difluoro-2-methoxyethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- 30 N-[4-[2-[4-[2-tert-butyl-6-(2-difluoromethoxyethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,

- N-[4-[2-[4-[2-tert-butyl-6-(2-difluoromethoxyethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-trifluoromethoxyethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- 5 N-[4-[2-[4-[2-tert-butyl-6-(2-trifluoromethoxyethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(oxetan-3-yl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(oxetan-3-yl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- 10 N-[4-[2-[4-[2-tert-butyl-6-(oxetan-2-yl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(oxetan-2-yl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(oxolan-3-yl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- 15 N-[4-[2-[4-[2-tert-butyl-6-(oxolan-3-yl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(3-methoxycyclobutyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- 20 N-[4-[2-[4-[2-tert-butyl-6-(3-methoxycyclobutyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxyethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- 25 N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxyethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxypropyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxypropyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- 30 N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxy-2-methylpropyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,

- N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxy-2-methylpropyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(3-hydroxycyclobutyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- 5 N-[4-[2-[4-[2-tert-butyl-6-(3-hydroxycyclobutyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(ethoxymethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(ethoxymethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]formamide,
- 10 N-[4-[2-[4-[2-tert-butyl-6-(methoxymethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(methoxymethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]formamide,
- 15 N-[4-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(ethoxydifluoromethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]acetamide,
- 20 N-[4-[2-[4-[2-tert-butyl-6-(ethoxydifluoromethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(1,1-difluoro-2-methoxyethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]acetamide,
- 25 N-[4-[2-[4-[2-tert-butyl-6-(1,1-difluoro-2-methoxyethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-difluoromethoxyethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-difluoromethoxyethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]formamide,
- 30 N-[4-[2-[4-[2-tert-butyl-6-(2-trifluoromethoxyethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]acetamide,

- N-[4-[2-[4-[2-tert-butyl-6-(2-trifluoromethoxyethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(oxetan-3-yl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]acetamide,
- 5 N-[4-[2-[4-[2-tert-butyl-6-(oxetan-3-yl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(oxetan-2-yl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(oxetan-2-yl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]formamide,
- 10 N-[4-[2-[4-[2-tert-butyl-6-(oxolan-3-yl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(oxolan-3-yl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]formamide,
- 15 N-[4-[2-[4-[2-tert-butyl-6-(3-methoxycyclobutyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(3-methoxycyclobutyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxyethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]acetamide,
- 20 N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxyethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxypropyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]acetamide,
- 25 N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxypropyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxy-2-methylpropyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxy-2-methylpropyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]formamide,
- 30 N-[4-[2-[4-[2-tert-butyl-6-(3-hydroxycyclobutyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]acetamide,

- N-[4-[2-[4-[2-tert-butyl-6-(3-hydroxycyclobutyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]formamide,
- N-[3-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclopentyl]acetamide,
- 5 N-[3-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclopentyl]formamide,
- N-[3-[2-[4-[2-tert-butyl-6-(methoxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclopentyl]acetamide,
- N-[3-[2-[4-[2-tert-butyl-6-(methoxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclopentyl]formamide
- 10 N-[3-[2-[4-[2-tert-butyl-6-(ethoxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclopentyl]acetamide,
- N-[3-[2-[4-[2-tert-butyl-6-(ethoxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclopentyl]formamide,
- 15 N-[3-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclobutyl]acetamide,
- N-[3-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclobutyl]formamide,
- N-[3-[2-[4-[2-tert-butyl-6-(methoxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclobutyl]acetamide,
- 20 N-[3-[2-[4-[2-tert-butyl-6-(methoxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclobutyl]formamide,
- N-[3-[2-[4-[2-tert-butyl-6-(ethoxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclobutyl]acetamide,
- 25 N-[3-[2-[4-[2-tert-butyl-6-(ethoxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclobutyl]formamide,
- the cis-isomers thereof, the trans-isomers thereof,
- and the N-oxides, the prodrugs and the pharmaceutically acceptable salts of these compounds.

30

26. The compound according to claim 1, selected from the group consisting of:

- N-[4-[2-[4-[2-tert-butyl-6-(hydroxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]acetamide,
N-[4-[2-[4-[2-tert-butyl-6-(hydroxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]formamide,
5 N-[4-[2-[4-[2-tert-butyl-6-(hydroxymethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
N-[4-[2-[4-[2-tert-butyl-6-(hydroxymethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
N-[4-[2-[4-[2-tert-butyl-6-(hydroxymethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
10 N-[4-[2-[4-[2-tert-butyl-6-(hydroxymethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
N-[4-[2-[4-[2-tert-butyl-6-(hydroxymethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]acetamide,
15 N-[4-[2-[4-[2-tert-butyl-6-(hydroxymethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]formamide,
N-[3-[2-[4-[2-tert-butyl-6-(hydroxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclopentyl]acetamide,
N-[3-[2-[4-[2-tert-butyl-6-(hydroxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclopentyl]formamide,
20 N-[3-[2-[4-[2-tert-butyl-6-(hydroxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclobutyl]acetamide,
N-[3-[2-[4-[2-tert-butyl-6-(hydroxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclobutyl]formamide,
25 N-[3-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclobutyl]acetamide,
N-[3-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclobutyl]formamide,
N-[3-[2-[4-[2-tert-butyl-6-(methoxymethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclobutyl]acetamide,
30 N-[3-[2-[4-[2-tert-butyl-6-(methoxymethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclobutyl]formamide,

N-[3-[2-[4-[2-tert-butyl-6-(ethoxymethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclobutyl]acetamide,

N-[3-[2-[4-[2-tert-butyl-6-(ethoxymethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclobutyl]formamide,

5 N-[3-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclobutyl]acetamide,

N-[3-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclobutyl]formamide,

10 N-[3-[2-[4-[2-tert-butyl-6-(methoxymethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclobutyl]acetamide,

N-[3-[2-[4-[2-tert-butyl-6-(methoxymethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclobutyl]formamide,

N-[3-[2-[4-[2-tert-butyl-6-(ethoxymethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclobutyl]acetamide,

15 N-[3-[2-[4-[2-tert-butyl-6-(ethoxymethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclobutyl]formamide,

the cis-isomers thereof, the trans-isomers thereof,

and the N-oxides, the prodrugs and the pharmaceutically acceptable salts of these compounds.

20

27. The compound according to claim 1, selected from the group consisting of:

trans-N-[4-(2-{4-[2-tert-butyl-6-(2-methoxy-ethyl)-pyrimidin-4-yl]-piperazin-1-yl}-ethyl)-cyclohexyl]-acetamide

trans-N-[4-(2-{4-[2-tert-butyl-6-(methoxymethyl)-pyrimidin-4-yl]-piperazin-1-yl}-ethyl)-cyclohexyl]-acetamide

25

cis-N-[4-(2-{4-[2-tert-butyl-6-(2-methoxy-ethyl)-pyrimidin-4-yl]-piperazin-1-yl}-ethyl)-cyclohexyl]-acetamide

cis-N-[3-(2-{4-[2-tert-butyl-6-(2-methoxy-ethyl)-pyrimidin-4-yl]-piperazin-1-yl}-ethyl)-cyclobutyl]-acetamide

30

trans-N-[3-(2-{4-[2-tert-butyl-6-(2-methoxy-ethyl)-pyrimidin-4-yl]-piperazin-1-yl}-ethyl)-cyclobutyl]-acetamide

- trans-N-[4-(2-((2R)-4-[2-tert-butyl-6-(2-methoxy-ethyl)-pyrimidin-4-yl]-2-methyl-piperazin-1-yl)-ethyl)-cyclohexyl]-acetamide
- trans-N-[4-(2-((3R)-4-[2-tert-butyl-6-(2-methoxy-ethyl)-pyrimidin-4-yl]-3-methyl-piperazin-1-yl)-ethyl)-cyclohexyl]-acetamide
- 5 cis-N-[4-(2-((2S)-4-[2-tert-butyl-6-(2-methoxy-ethyl)-pyrimidin-4-yl]-2-methyl-piperazin-1-yl)-ethyl)-cyclohexyl]-acetamide
- trans-N-[4-(2-((3S)-4-[2-tert-butyl-6-(2-methoxy-ethyl)-pyrimidin-4-yl]-3-methyl-piperazin-1-yl)-ethyl)-cyclohexyl]-acetamide
- trans-N-[4-(2-((2S)-4-[2-tert-butyl-6-(2-methoxy-ethyl)-pyrimidin-4-yl]-2-methyl-piperazin-1-yl)-ethyl)-cyclohexyl]-acetamide
- 10 cis-N-[4-(2-(4-[2-tert-butyl-6-(2-trifluoromethoxy-ethyl)-pyrimidin-4-yl]-piperazin-1-yl)-ethyl)-cyclohexyl]-acetamide
- trans-N-[4-(2-(4-[2-tert-butyl-6-(2-trifluoromethoxy-ethyl)-pyrimidin-4-yl]-piperazin-1-yl)-ethyl)-cyclohexyl]-acetamide
- 15 trans-N-[4-(2-(4-[2-tert-butyl-6-(2-methoxy-ethyl)-pyrimidin-4-yl]-piperazin-1-yl)-ethyl)-cyclohexyl]-formamide
- N-[3-(2-(4-[2-tert-butyl-6-(2-methoxy-ethyl)-pyrimidin-4-yl]-piperazin-1-yl)-ethyl)-cyclobutyl]-formamide
- trans-N-[4-(2-(4-[2-tert-butyl-6-(2-hydroxy-ethyl)-pyrimidin-4-yl]-piperazin-1-yl)-ethyl)-cyclohexyl]-acetamide
- 20 trans-N-[(1R,3S)-3-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclopentyl]acetamide
- trans-N-[(1S,3R)-3-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclopentyl]acetamide
- 25 cis-N-[(1S,3S)-3-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclopentyl]acetamide
- N-[cis-3-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclobutyl]formamide
- 30 N-[trans-3-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclobutyl]formamide
- trans-N-[4-[2-[(3R)-4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]-3-methyl-piperazin-1-yl]ethyl]cyclohexyl]formamide

- trans-N-[4-[2-[(3S)-4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]-3-methyl-
piperazin-1-yl]ethyl]cyclohexyl]formamide
- trans-N-[4-[2-[4-[2-tert-butyl-6-(methoxymethyl)pyrimidin-4-yl]piperazin-1-
yl]ethyl]cyclohexyl]formamide
- 5 trans-N-[4-[2-[4-[2-tert-butyl-6-(hydroxymethyl)pyrimidin-4-yl]piperazin-1-
yl]ethyl]cyclohexyl]acetamide
- trans-N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxyethyl)pyrimidin-4-yl]piperazin-1-
yl]ethyl]cyclohexyl]formamide
- trans-N-[4-[2-[(2R)-4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]-2-methyl-
10 piperazin-1-yl]ethyl]cyclohexyl]formamide
- trans-N-[4-[2-[(3S)-4-[2-tert-butyl-6-(2-hydroxyethyl)pyrimidin-4-yl]-3-methyl-
piperazin-1-yl]ethyl]cyclohexyl]acetamide
- trans-N-[4-[2-[(2R)-4-[2-tert-butyl-6-(2-hydroxyethyl)pyrimidin-4-yl]-2-methyl-
piperazin-1-yl]ethyl]cyclohexyl]acetamide
- 15 trans-N-[4-[2-[4-(2-tert-butyl-6-tetrahydrofuran-3-yl-pyrimidin-4-yl)piperazin-1-
yl]ethyl]cyclohexyl]formamide
- N-[3-[2-[(3S)-4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]-3-methyl-
piperazin-1-yl]ethyl]cyclobutyl]formamide
- trans-N-[4-[2-[(3R)-4-[2-tert-butyl-6-(2-hydroxyethyl)pyrimidin-4-yl]-3-methyl-
20 piperazin-1-yl]ethyl]cyclohexyl]acetamide
- trans-N-[3-[2-[(3S)-4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]-3-methyl-
piperazin-1-yl]ethyl]cyclobutyl]acetamide
- cis-N-[3-[2-[(3S)-4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]-3-methyl-
piperazin-1-yl]ethyl]cyclobutyl]acetamide
- 25 trans-N-[4-[2-[(3S)-4-[2-tert-butyl-6-[2-(difluoromethoxy)ethyl]pyrimidin-4-yl]-3-
methyl-piperazin-1-yl]ethyl]cyclohexyl]acetamide

and the N-oxides, the prodrugs and the pharmaceutically acceptable salts of these
compounds.

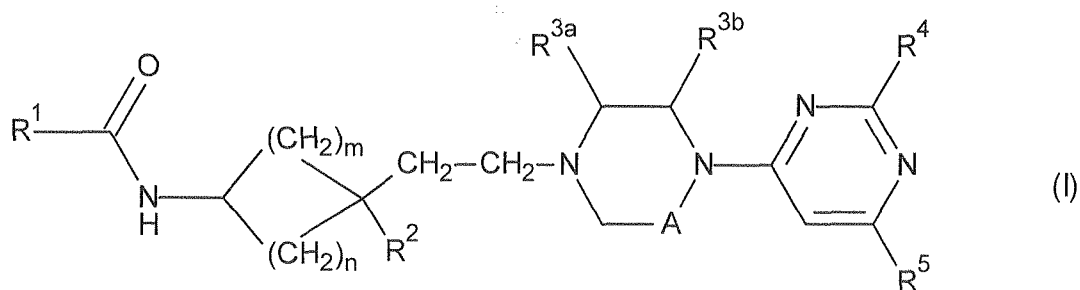
30

28. A compound of any of claims 1 to 27 for the use as a medicament.

29. A pharmaceutical composition comprising at least one compound as claimed in any of claims 1 to 27, optionally together with at least one physiologically acceptable carrier or auxiliary substance.
- 5 30. Use of at least one compound as claimed in any of claims 1 to 27 in the manufacture of a medicament for treating a disorder or condition of the central nervous system.
- 10 31. Use of at least one compound as claimed in any of claims 1 to 27 in the manufacture of a medicament for treating Parkinson's disease, schizophrenia, bipolar disorder, depression, motivation disturbances, anxiety, cognitive dysfunction, pain, disorder associated with drug abuse, and eating disorders.
- 15 32. Use of at least one compound as claimed in any of claims 1 to 27 in the manufacture of a medicament for treating renal function disorders, such as diabetic nephropathy.

We claim:

1. A compound of the formula I



5 where

m is 1 or 2,

n is 1 or 2,

A is selected from the group consisting of CH₂, CH₂CH₂, CHFCH₂ and CF₂CH₂,

10 R¹ is hydrogen or C₁-C₃-alkyl,

R² is selected from the group consisting of hydrogen and fluorine,

R^{3a} is selected from the group consisting of hydrogen and methyl,

R^{3b} is selected from the group consisting of hydrogen and methyl,

R⁴ is branched C₄-C₆ alkyl or branched fluorinated C₄-C₆ alkyl, and

15 R⁵ is an oxygen containing radical selected from the group consisting of C₁-C₂-alkoxy-C₁-C₄-alkyl, fluorinated C₁-C₂-alkoxy-C₁-C₄-alkyl, hydroxy-C₁-C₄-alkyl, fluorinated hydroxy-C₁-C₄-alkyl, oxetanyl, fluorinated oxetanyl, oxolanyl, fluorinated oxolanyl,

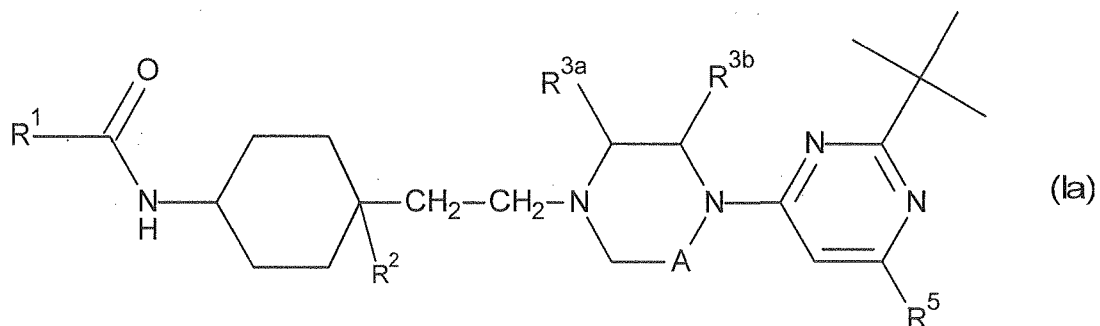
20 C₃-C₅ cycloalkyl, fluorinated C₃-C₅ cycloalkyl, where the cycloalkyl moiety in the last two mentioned radicals carries 1 or 2 radicals selected from hydroxyl, C₁-C₂-alkoxy and fluorinated C₁-C₂-alkoxy and may additionally carry 1 or 2 radicals selected from C₁-C₂-alkyl and fluorinated C₁-C₂-alkyl, C₃-C₅ cycloalkoxy-C₁-C₄-alkyl and fluorinated C₃-C₅ cycloalkoxy-C₁-C₄-alkyl, where the cycloalkoxy moiety in the last two mentioned radicals may

25 carry 1 or 2 radicals selected from hydroxyl, C₁-C₂-alkoxy, fluorinated C₁-C₂-alkoxy, C₁-C₂-alkyl and fluorinated C₁-C₂-alkyl,

and the pharmaceutically acceptable salts of these compounds.

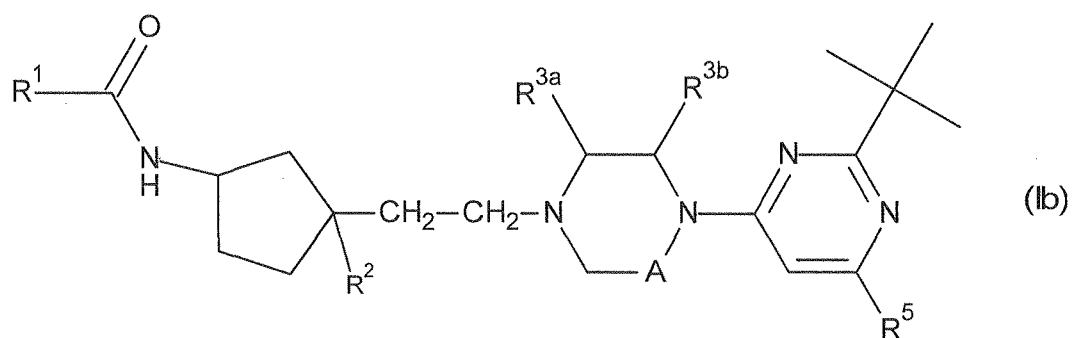
2. The compound of claim 1, wherein R^1 is hydrogen or methyl.
- 5 3. The compound of claim 1, wherein R^1 is methyl.
4. The compound of claim 1, wherein R^1 is hydrogen.
5. The compound of any of the preceding claims, wherein R^2 is hydrogen.
- 10 6. The compound of any of the preceding claims, wherein m is 2.
7. The compound of any of the preceding claims, wherein n is 2.
- 15 8. The compound of any of claims 1 to 7, wherein both m and n are 1.
9. The compound of any of the preceding claims, wherein R^{3a} and R^{3b} are hydrogen.
10. The compound of any claims 1 to 8, wherein either R^{3a} is methyl and R^{3b} is
20 hydrogen or R^{3a} is hydrogen and R^{3b} is methyl.
11. The compound of any of the preceding claims, wherein A is CH_2 .
12. The compound of any of claims 1 to 10, wherein A is CH_2CH_2 , $CHFCH_2$ or
25 CF_2CH_2 .
13. The compound of any of the preceding claims, wherein R^4 is branched C_4 - C_6 alkyl
and in particular tert.-butyl.
- 30 14. The compound of any of the preceding claims, wherein R^5 is selected from the
group consisting of C_1 - C_2 -alkoxy- C_1 - C_2 -alkyl, fluorinated C_1 - C_2 -alkoxy- C_1 - C_2 -
alkyl and hydroxy- C_1 - C_4 -alkyl.

15. The compound of claim 14, wherein R^5 is selected from the group consisting of methoxymethyl, ethoxymethyl, 2-methoxyethyl, difluoromethoxymethyl, 2-(difluoromethoxy)ethyl, trifluoromethoxymethyl, 2-(trifluoromethoxy)ethyl, methoxydifluoromethyl, ethoxydifluoromethyl, 2-methoxy-1,1-difluoroethyl, hydroxymethyl, 2-hydroxyethyl, 2-hydroxypropyl and 2-hydroxy-2-methylpropyl.
16. The compound of claim 14, wherein R^5 is C_1 - C_2 -alkoxy- C_1 - C_2 -alkyl.
17. The compound of any of the claims 1 to 13, wherein R^5 is selected from the group consisting of oxetanyl, fluorinated oxetanyl, oxolanyl, fluorinated oxolanyl, and C_3 - C_5 cycloalkyl, which carries 1 or 2 radicals selected from hydroxy and C_1 - C_2 -alkoxy.
18. The compound of claim 17, wherein R^5 is selected from the group consisting of 2-oxetanyl, 3-oxetanyl, 2-oxolanyl, 3-oxolanyl, 3-methoxycyclobutyl and 3-hydroxycyclobutyl.
19. The compound of any of the preceding claims, wherein
 - A is CH_2 , CH_2CH_2 , $CHFCH_2$ or CF_2CH_2 ;
 - R^1 is hydrogen or methyl;
 - R^2 is hydrogen;
 - R^{3a} and R^{3b} are hydrogen or either R^{3a} is methyl and R^{3b} is hydrogen or R^{3a} is hydrogen and R^{3b} is methyl; and
 - R^4 is tert-butyl.
20. The compound of any of the preceding claims, which is a compound of the formula Ia,



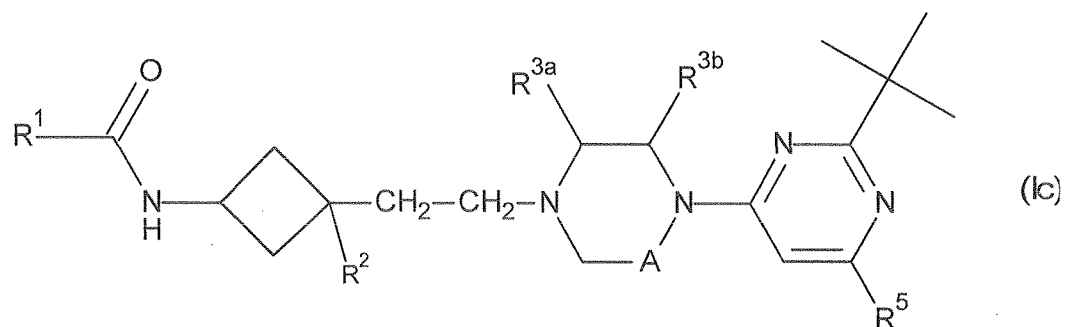
where R^2 is H and R^1 , R^{3a} , R^{3b} , R^5 and A are as defined in any one of the preceding claims, and the pharmaceutically acceptable salts of these compounds.

- 5 21. The compound of any of claims 1 to 19, which is a compound of the formula Ib,



where R^2 is H and R^1 , R^{3a} , R^{3b} , R^5 and A are as defined in any one of the preceding claims, and the pharmaceutically acceptable salts of these compounds.

- 10 22. The compound of any of claims 1 to 19, which is a compound of the formula Ic,



where R^2 is H and R^1 , R^{3a} , R^{3b} , R^5 and A are as defined in any one of the preceding claims, and the pharmaceutically acceptable salts of these compounds.

23. The compound of any of the preceding claims, where in formulae I or Ia or Ic the radical $R^1-C(=O)-NH$ and the radical R^2 predominately adopt cis-configuration.
24. The compound of any of claims 1 to 22, where formulae in I or Ia or Ic the radical $R^1-C(=O)-NH$ and the radical R^2 predominately adopt trans-configuration.
25. The compound according to claim 1, selected from the group consisting of:
 - N-[4-[2-[4-[2-tert-butyl-6-(ethoxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]acetamide,
 - N-[4-[2-[4-[2-tert-butyl-6-(ethoxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]formamide,
 - N-[4-[2-[4-[2-tert-butyl-6-(methoxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]acetamide,
 - N-[4-[2-[4-[2-tert-butyl-6-(methoxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]formamide,
 - N-[4-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]acetamide,
 - N-[4-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]formamide,
 - N-[4-[2-[4-[2-tert-butyl-6-(ethoxydifluoromethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]acetamide,
 - N-[4-[2-[4-[2-tert-butyl-6-(ethoxydifluoromethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]formamide,
 - N-[4-[2-[4-[2-tert-butyl-6-(1,1-difluoro-2-methoxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]acetamide,
 - N-[4-[2-[4-[2-tert-butyl-6-(1,1-difluoro-2-methoxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]formamide,
 - N-[4-[2-[4-[2-tert-butyl-6-(2-difluoromethoxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]acetamide,
 - N-[4-[2-[4-[2-tert-butyl-6-(2-difluoromethoxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]formamide,

- N-[4-[2-[4-[2-tert-butyl-6-(2-trifluoromethoxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-trifluoromethoxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]formamide,
- 5 N-[4-[2-[4-[2-tert-butyl-6-(oxetan-3-yl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(oxetan-3-yl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]formamide,
- 10 N-[4-[2-[4-[2-tert-butyl-6-(oxetan-2-yl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(oxetan-2-yl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(oxolan-3-yl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]acetamide,
- 15 N-[4-[2-[4-[2-tert-butyl-6-(oxolan-3-yl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(3-methoxycyclobutyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(3-methoxycyclobutyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]formamide,
- 20 N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]formamide,
- 25 N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxypropyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxypropyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]formamide,
- 30 N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxy-2-methylpropyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxy-2-methylpropyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]formamide,

- N-[4-[2-[4-[2-tert-butyl-6-(3-hydroxycyclobutyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(3-hydroxycyclobutyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]formamide,
- 5 N-[4-[2-[4-[2-tert-butyl-6-(ethoxymethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(ethoxymethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- 10 N-[4-[2-[4-[2-tert-butyl-6-(methoxymethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(methoxymethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- 15 N-[4-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(ethoxydifluoromethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(ethoxydifluoromethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- 20 N-[4-[2-[4-[2-tert-butyl-6-(1,1-difluoro-2-methoxyethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(1,1-difluoro-2-methoxyethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- 25 N-[4-[2-[4-[2-tert-butyl-6-(2-difluoromethoxyethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-difluoromethoxyethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- 30 N-[4-[2-[4-[2-tert-butyl-6-(2-trifluoromethoxyethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-trifluoromethoxyethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,

- N-[4-[2-[4-[2-tert-butyl-6-(oxetan-3-yl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(oxetan-3-yl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- 5 N-[4-[2-[4-[2-tert-butyl-6-(oxetan-2-yl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(oxetan-2-yl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- 10 N-[4-[2-[4-[2-tert-butyl-6-(oxolan-3-yl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(oxolan-3-yl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(3-methoxycyclobutyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- 15 N-[4-[2-[4-[2-tert-butyl-6-(3-methoxycyclobutyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxyethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxyethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- 20 N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxypropyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxypropyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- 25 N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxy-2-methylpropyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxy-2-methylpropyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- 30 N-[4-[2-[4-[2-tert-butyl-6-(3-hydroxycyclobutyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(3-hydroxycyclobutyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,

- N-[4-[2-[4-[2-tert-butyl-6-(ethoxymethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(ethoxymethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- 5 N-[4-[2-[4-[2-tert-butyl-6-(methoxymethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(methoxymethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- 10 N-[4-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(ethoxydifluoromethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- 15 N-[4-[2-[4-[2-tert-butyl-6-(ethoxydifluoromethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(1,1-difluoro-2-methoxyethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(1,1-difluoro-2-methoxyethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- 20 N-[4-[2-[4-[2-tert-butyl-6-(2-difluoromethoxyethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-difluoromethoxyethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- 25 N-[4-[2-[4-[2-tert-butyl-6-(2-trifluoromethoxyethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-trifluoromethoxyethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- 30 N-[4-[2-[4-[2-tert-butyl-6-(oxetan-3-yl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(oxetan-3-yl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,

- N-[4-[2-[4-[2-tert-butyl-6-(oxetan-2-yl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(oxetan-2-yl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- 5 N-[4-[2-[4-[2-tert-butyl-6-(oxolan-3-yl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(oxolan-3-yl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- 10 N-[4-[2-[4-[2-tert-butyl-6-(3-methoxycyclobutyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(3-methoxycyclobutyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxyethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- 15 N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxyethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxypropyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxypropyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- 20 N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxy-2-methylpropyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxy-2-methylpropyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- 25 N-[4-[2-[4-[2-tert-butyl-6-(3-hydroxycyclobutyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(3-hydroxycyclobutyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- 30 N-[4-[2-[4-[2-tert-butyl-6-(ethoxymethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(ethoxymethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]formamide,

- N-[4-[2-[4-[2-tert-butyl-6-(methoxymethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(methoxymethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]formamide,
- 5 N-[4-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]formamide,
- 10 N-[4-[2-[4-[2-tert-butyl-6-(ethoxydifluoromethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(ethoxydifluoromethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(1,1-difluoro-2-methoxyethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]acetamide,
- 15 N-[4-[2-[4-[2-tert-butyl-6-(1,1-difluoro-2-methoxyethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-difluoromethoxyethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-difluoromethoxyethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]formamide,
- 20 N-[4-[2-[4-[2-tert-butyl-6-(2-trifluoromethoxyethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-trifluoromethoxyethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]formamide,
- 25 N-[4-[2-[4-[2-tert-butyl-6-(oxetan-3-yl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(oxetan-3-yl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(oxetan-2-yl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]acetamide,
- 30 N-[4-[2-[4-[2-tert-butyl-6-(oxetan-2-yl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]formamide,

- N-[4-[2-[4-[2-tert-butyl-6-(oxolan-3-yl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(oxolan-3-yl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]formamide,
- 5 N-[4-[2-[4-[2-tert-butyl-6-(3-methoxycyclobutyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(3-methoxycyclobutyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]formamide,
- 10 N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxyethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxyethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxypropyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]acetamide,
- 15 N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxypropyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxy-2-methylpropyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxy-2-methylpropyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]formamide,
- 20 N-[4-[2-[4-[2-tert-butyl-6-(3-hydroxycyclobutyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(3-hydroxycyclobutyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]formamide,
- 25 N-[3-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclopentyl]acetamide,
- N-[3-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclopentyl]formamide,
- N-[3-[2-[4-[2-tert-butyl-6-(methoxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclopentyl]acetamide,
- 30 N-[3-[2-[4-[2-tert-butyl-6-(methoxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclopentyl]formamide

- N-[3-[2-[4-[2-tert-butyl-6-(ethoxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclopentyl]acetamide,
 N-[3-[2-[4-[2-tert-butyl-6-(ethoxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclopentyl]formamide,
- 5 N-[3-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclobutyl]acetamide,
 N-[3-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclobutyl]formamide,
- 10 N-[3-[2-[4-[2-tert-butyl-6-(methoxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclobutyl]acetamide,
 N-[3-[2-[4-[2-tert-butyl-6-(methoxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclobutyl]formamide,
- N-[3-[2-[4-[2-tert-butyl-6-(ethoxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclobutyl]acetamide,
- 15 N-[3-[2-[4-[2-tert-butyl-6-(ethoxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclobutyl]formamide,
 the cis-isomers thereof, the trans-isomers thereof,
 and the pharmaceutically acceptable salts of these compounds.
- 20 26. The compound according to claim 1, selected from the group consisting of:
 N-[4-[2-[4-[2-tert-butyl-6-(hydroxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]acetamide,
 N-[4-[2-[4-[2-tert-butyl-6-(hydroxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]formamide,
- 25 N-[4-[2-[4-[2-tert-butyl-6-(hydroxymethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
 N-[4-[2-[4-[2-tert-butyl-6-(hydroxymethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,
- N-[4-[2-[4-[2-tert-butyl-6-(hydroxymethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide,
- 30 N-[4-[2-[4-[2-tert-butyl-6-(hydroxymethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide,

- N-[4-[2-[4-[2-tert-butyl-6-(hydroxymethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]acetamide,
- N-[4-[2-[4-[2-tert-butyl-6-(hydroxymethyl)pyrimidin-4-yl]-1,4-diazepan-1-yl]ethyl]cyclohexyl]formamide,
- 5 N-[3-[2-[4-[2-tert-butyl-6-(hydroxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclopentyl]acetamide,
- N-[3-[2-[4-[2-tert-butyl-6-(hydroxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclopentyl]formamide,
- N-[3-[2-[4-[2-tert-butyl-6-(hydroxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclobutyl]acetamide,
- 10 N-[3-[2-[4-[2-tert-butyl-6-(hydroxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclobutyl]formamide,
- N-[3-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclobutyl]acetamide,
- 15 N-[3-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclobutyl]formamide,
- N-[3-[2-[4-[2-tert-butyl-6-(methoxymethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclobutyl]acetamide,
- N-[3-[2-[4-[2-tert-butyl-6-(methoxymethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclobutyl]formamide,
- 20 N-[3-[2-[4-[2-tert-butyl-6-(ethoxymethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclobutyl]acetamide,
- N-[3-[2-[4-[2-tert-butyl-6-(ethoxymethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclobutyl]formamide,
- 25 N-[3-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclobutyl]acetamide,
- N-[3-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclobutyl]formamide,
- N-[3-[2-[4-[2-tert-butyl-6-(methoxymethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclobutyl]acetamide,
- 30 N-[3-[2-[4-[2-tert-butyl-6-(methoxymethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclobutyl]formamide,

N-[3-[2-[4-[2-tert-butyl-6-(ethoxymethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclobutyl]acetamide,

N-[3-[2-[4-[2-tert-butyl-6-(ethoxymethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclobutyl]formamide,

5 the cis-isomers thereof, the trans-isomers thereof,
and the pharmaceutically acceptable salts of these compounds.

27. The compound according to claim 1, selected from the group consisting of:

10 trans-N-[4-(2-{4-[2-tert-butyl-6-(2-methoxy-ethyl)-pyrimidin-4-yl]-piperazin-1-yl}-ethyl)-cyclohexyl]-acetamide

trans-N-[4-(2-{4-[2-tert-butyl-6-(methoxymethyl)-pyrimidin-4-yl]-piperazin-1-yl}-ethyl)-cyclohexyl]-acetamide

cis-N-[4-(2-{4-[2-tert-butyl-6-(2-methoxy-ethyl)-pyrimidin-4-yl]-piperazin-1-yl}-ethyl)-cyclohexyl]-acetamide

15 cis-N-[3-(2-{4-[2-tert-butyl-6-(2-methoxy-ethyl)-pyrimidin-4-yl]-piperazin-1-yl}-ethyl)-cyclobutyl]-acetamide

trans-N-[3-(2-{4-[2-tert-butyl-6-(2-methoxy-ethyl)-pyrimidin-4-yl]-piperazin-1-yl}-ethyl)-cyclobutyl]-acetamide

20 trans-N-[4-(2-{(2R)-4-[2-tert-butyl-6-(2-methoxy-ethyl)-pyrimidin-4-yl]-2-methyl-piperazin-1-yl}-ethyl)-cyclohexyl]-acetamide

trans-N-[4-(2-{(3R)-4-[2-tert-butyl-6-(2-methoxy-ethyl)-pyrimidin-4-yl]-3-methyl-piperazin-1-yl}-ethyl)-cyclohexyl]-acetamide

cis-N-[4-(2-{(2S)-4-[2-tert-butyl-6-(2-methoxy-ethyl)-pyrimidin-4-yl]-2-methyl-piperazin-1-yl}-ethyl)-cyclohexyl]-acetamide

25 trans-N-[4-(2-{(3S)-4-[2-tert-butyl-6-(2-methoxy-ethyl)-pyrimidin-4-yl]-3-methyl-piperazin-1-yl}-ethyl)-cyclohexyl]-acetamide

trans-N-[4-(2-{(2S)-4-[2-tert-butyl-6-(2-methoxy-ethyl)-pyrimidin-4-yl]-2-methyl-piperazin-1-yl}-ethyl)-cyclohexyl]-acetamide

30 cis-N-[4-(2-{4-[2-tert-butyl-6-(2-trifluoromethoxy-ethyl)-pyrimidin-4-yl]-piperazin-1-yl}-ethyl)-cyclohexyl]-acetamide

trans-N-[4-(2-{4-[2-tert-butyl-6-(2-trifluoromethoxy-ethyl)-pyrimidin-4-yl]-piperazin-1-yl}-ethyl)-cyclohexyl]-acetamide

- trans-N-[4-(2-{4-[2-tert-butyl-6-(2-methoxy-ethyl)-pyrimidin-4-yl]-piperazin-1-yl}-ethyl)-cyclohexyl]-formamide
- N-[3-(2-{4-[2-tert-butyl-6-(2-methoxy-ethyl)-pyrimidin-4-yl]-piperazin-1-yl}-ethyl)-cyclobutyl]-formamide
- 5 trans-N-[4-(2-{4-[2-tert-butyl-6-(2-hydroxy-ethyl)-pyrimidin-4-yl]-piperazin-1-yl}-ethyl)-cyclohexyl]-acetamide
- trans-N-[(1R,3S)-3-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclopentyl]acetamide
- trans-N-[(1S,3R)-3-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclopentyl]acetamide
- 10 cis-N-[(1S,3S)-3-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclopentyl]acetamide
- N-[cis-3-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclobutyl]formamide
- 15 N-[trans-3-[2-[4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclobutyl]formamide
- trans-N-[4-[2-[(3R)-4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide
- trans-N-[4-[2-[(3S)-4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide
- 20 trans-N-[4-[2-[4-[2-tert-butyl-6-(methoxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]formamide
- trans-N-[4-[2-[4-[2-tert-butyl-6-(hydroxymethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]acetamide
- 25 trans-N-[4-[2-[4-[2-tert-butyl-6-(2-hydroxyethyl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]formamide
- trans-N-[4-[2-[(2R)-4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]formamide
- trans-N-[4-[2-[(3S)-4-[2-tert-butyl-6-(2-hydroxyethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide
- 30 trans-N-[4-[2-[(2R)-4-[2-tert-butyl-6-(2-hydroxyethyl)pyrimidin-4-yl]-2-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide

trans-N-[4-[2-[4-(2-tert-butyl-6-tetrahydrofuran-3-yl)pyrimidin-4-yl]piperazin-1-yl]ethyl]cyclohexyl]formamide

N-[3-[2-[(3S)-4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclobutyl]formamide

5 trans-N-[4-[2-[(3R)-4-[2-tert-butyl-6-(2-hydroxyethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide

trans-N-[3-[2-[(3S)-4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclobutyl]acetamide

10 cis-N-[3-[2-[(3S)-4-[2-tert-butyl-6-(2-methoxyethyl)pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclobutyl]acetamide

trans-N-[4-[2-[(3S)-4-[2-tert-butyl-6-[2-(difluoromethoxy)ethyl]pyrimidin-4-yl]-3-methylpiperazin-1-yl]ethyl]cyclohexyl]acetamide

and the pharmaceutically acceptable salts of these compounds.

15

28. A compound of any of claims 1 to 27 for use as a medicament.

29. A pharmaceutical composition comprising at least one compound as claimed in any of claims 1 to 27, optionally together with at least one physiologically acceptable carrier or auxiliary substance.

20

30. Use of at least one compound as claimed in any of claims 1 to 27 in the manufacture of a medicament for treating Parkinson's disease, schizophrenia, bipolar disorder, depression, motivation disturbances, anxiety, cognitive dysfunction, pain, substance dependence, substance abuse, substance tolerance, substance withdrawal, anorexia and weight loss.

25

31. Use of at least one compound as claimed in any of claims 1 to 27 in the manufacture of a medicament for treating diabetic nephropathy.