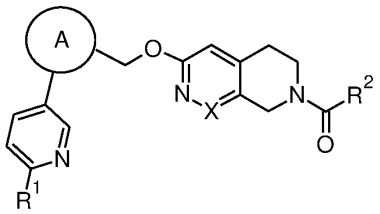
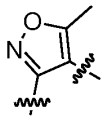
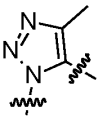
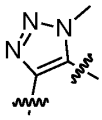
## Claims

1. A compound of formula (I)



wherein

A is represented by

 group,  group, or  group,

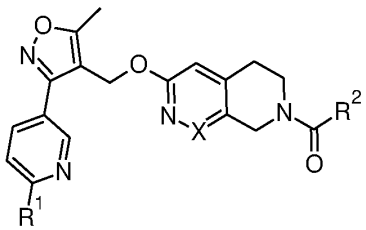
$R^1$ is a $C_{1-4}$alkyl or halo-$C_{1-4}$alkyl group,

$R^2$ is a $C_{1-4}$alkyl, halo-$C_{1-4}$alkyl, $C_{1-4}$alkyl-$S(O)_2$-$C_{1-4}$alkyl, $C_{1-4}$alkoxy, $C_{3-7}$cycloalkyl, $C_{6-10}$aryl, optionally substituted $C_{3-10}$heterocycle, $C_{5-10}$heteroaryl, or $NR^3R^4$ group wherein $R^3$ and $R^4$ is each independently H, $C_{1-4}$alkyl, $C_{3-7}$cycloalkyl or $C_{3-10}$heterocycle group,

X is CH or N

and/or salts thereof and/or stereoisomers thereof and/or enantiomers thereof and/or racemates thereof and/or diastereomers thereof and/or biologically active metabolites thereof and/or prodrugs thereof and/or solvates thereof and/or hydrates thereof and/or polymorphs thereof.

2. A compound according to claim 1,



(I-a)

wherein

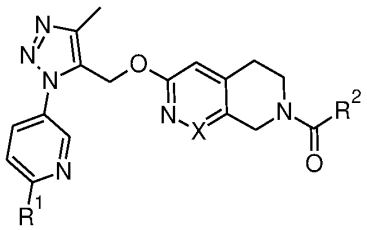
$R^1$ is a $C_{1-4}$alkyl or halo-$C_{1-4}$alkyl group,

$R^2$ is a $C_{1-4}$alkyl, halo-$C_{1-4}$alkyl, $C_{1-4}$alkyl-$S(O)_2$-$C_{1-4}$alkyl, $C_{1-4}$alkoxy, $C_{3-7}$cycloalkyl, $C_{6-10}$aryl, optionally substituted $C_{3-10}$heterocycle, $C_{5-10}$heteroaryl, or $NR^3R^4$ group wherein $R^3$ and $R^4$ is each independently H, $C_{1-4}$alkyl, $C_{3-7}$cycloalkyl or $C_{3-10}$heterocycle group,

X is CH or N

and/or salts thereof and/or stereoisomers thereof and/or enantiomers thereof and/or racemates thereof and/or diastereomers thereof and/or biologically active metabolites thereof and/or prodrugs thereof and/or solvates thereof and/or hydrates thereof and/or polymorphs thereof.

3. A compound according to claim 1,



(I-b)

wherein

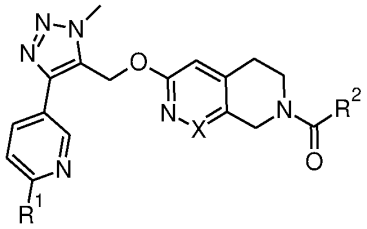
$R^1$ is a $C_{1-4}$alkyl or halo-$C_{1-4}$alkyl group,

$R^2$ is a $C_{1-4}$alkyl, halo-$C_{1-4}$alkyl, $C_{1-4}$alkyl-$S(O)_2$-$C_{1-4}$alkyl, $C_{1-4}$alkoxy, $C_{3-7}$cycloalkyl, $C_{6-10}$aryl, optionally substituted $C_{3-10}$heterocycle, $C_{5-10}$heteroaryl, or $NR^3R^4$ group wherein $R^3$ and $R^4$ is each independently H, $C_{1-4}$alkyl, $C_{3-7}$cycloalkyl or $C_{3-10}$heterocycle group,

X is CH or N

and/or salts thereof and/or stereoisomers thereof and/or enantiomers thereof and/or racemates thereof and/or diastereomers thereof and/or biologically active metabolites thereof and/or prodrugs thereof and/or solvates thereof and/or hydrates thereof and/or polymorphs thereof.

4. A compound according to claim 1,



(I-c)

wherein

$R^1$ is a $C_{1-4}$alkyl or halo-$C_{1-4}$alkyl group,

$R^2$ is a $C_{1-4}$alkyl, halo-$C_{1-4}$alkyl, $C_{1-4}$alkyl-$S(O)_2$-$C_{1-4}$alkyl, $C_{1-4}$alkoxy, $C_{3-7}$cycloalkyl, $C_{6-10}$aryl, optionally substituted $C_{3-10}$heterocycle, $C_{5-10}$heteroaryl, or $NR^3R^4$ group wherein $R^3$ and $R^4$ is each independently H, $C_{1-4}$alkyl, $C_{3-7}$cycloalkyl or $C_{3-10}$heterocycle group,

X is CH or N

and/or salts thereof and/or stereoisomers thereof and/or enantiomers thereof and/or racemates thereof and/or diastereomers thereof and/or biologically active metabolites thereof and/or prodrugs thereof and/or solvates thereof and/or hydrates thereof and/or polymorphs thereof.

5. A compound according to any one of claims 1 to 4, wherein $R^1$ is a $C_{1-2}$alkyl or halo-methyl group,

6. A compound according to any one of claims 1 to 5, wherein $R^1$ is a methyl, difluoromethyl or trifluoromethyl group.

7. A compound according to any one of claims 1 to 6, wherein $R^2$ is a $C_{1-4}$alkyl, halo-methyl, $C_{1-2}$alkyl-$S(O)_2CH_3$, $C_{1-4}$alkoxy, $C_{3-5}$cycloalkyl, phenyl, optionally substituted $C_{4-6}$heterocycle, $C_{5-6}$heteroaryl, or $NR^3R^4$ group wherein $R^3$ and $R^4$ is each independently H, $C_{1-2}$alkyl, $C_{3-5}$cycloalkyl or $C_{4-7}$heterocycle group.

8. A compound according to any one of claims 1 to 7, wherein $R^2$ is a methyl, fluoromethyl, trifluoromethyl, methylsulfonylmethane, *tert*-butoxy, $C_{3-4}$cycloalkyl, phenyl, optionally substituted $C_{4-6}$heterocycle comprising 1 or 2 ring heteroatoms independently selected from N, O and S, $C_{5-6}$heteroaryl comprising 1 or 2 ring heteroatoms independently selected from N, O and S, or $NR^3R^4$ group wherein $R^3$ and $R^4$ is each independently H, methyl, $C_{3-4}$cycloalkyl or $C_{4-6}$heterocycle group.

9. A compound according to any one of claims 1 to 8, wherein X is CH.

10. A compound according to any one of claims 1 to 8, wherein X is N.

11. A compound according to any one of claims 1 to 10 selected from the group consisting of

1-[6-{[5-methyl-3-(6-methylpyridin-3-yl)-1,2-oxazol-4-yl]methoxy}-3,4-dihydro-2,7-naphthyridin-2(1*H*)-yl]ethanone,

*tert*-butyl 6-{[5-methyl-3-(6-methylpyridin-3-yl)-1,2-oxazol-4-yl]methoxy}-1,2,3,4-tetrahydro-2,7-naphthyridine-2-carboxylate,

*tert*-butyl 6-({5-methyl-3-[6-(trifluoromethyl)pyridin-3-yl]-1,2-oxazol-4-yl}methoxy)-1,2,3,4-tetrahydro-2,7-naphthyridine-2-carboxylate,

1-[6-({5-methyl-3-[6-(trifluoromethyl)pyridin-3-yl]-1,2-oxazol-4-yl}methoxy)-3,4-dihydro-2,7-naphthyridin-2(1*H*)-yl]ethanone,

2-methanesulfonyl-1-(6-{[5-methyl-3-(6-methylpyridin-3-yl)-1,2-oxazol-4-yl]methoxy}-1,2,3,4-tetrahydro-2,7-naphthyridin-2-yl)ethan-1-one,

2-cyclopropanecarbonyl-6-{[5-methyl-3-(6-methylpyridin-3-yl)-1,2-oxazol-4-yl]methoxy}-1,2,3,4-tetrahydro-2,7-naphthyridine,

6-{[5-methyl-3-(6-methylpyridin-3-yl)-1,2-oxazol-4-yl]methoxy}-2-(pyridine-3-carbonyl)-1,2,3,4-tetrahydro-2,7-naphthyridine,

4-(6-{[5-methyl-3-(6-methylpyridin-3-yl)-1,2-oxazol-4-yl]methoxy}-1,2,3,4-tetrahydro-2,7-naphthyridine-2-carbonyl)-1lambda6-thiane-1,1-dione,

6-{[5-methyl-3-(6-methylpyridin-3-yl)-1,2-oxazol-4-yl]methoxy}-2-(pyridine-4-carbonyl)-1,2,3,4-tetrahydro-2,7-naphthyridine,

6-{[5-methyl-3-(6-methylpyridin-3-yl)-1,2-oxazol-4-yl]methoxy}-2-(oxane-4-carbonyl)-1,2,3,4-tetrahydro-2,7-naphthyridine,

2-cyclobutanecarbonyl-6-{[5-methyl-3-(6-methylpyridin-3-yl)-1,2-oxazol-4-yl]methoxy}-1,2,3,4-tetrahydro-2,7-naphthyridine,

6-{[5-methyl-3-(6-methylpyridin-3-yl)-1,2-oxazol-4-yl]methoxy}-2-(oxolane-3-carbonyl)-1,2,3,4-tetrahydro-2,7-naphthyridine,

6-{[5-methyl-3-(6-methylpyridin-3-yl)-1,2-oxazol-4-yl]methoxy}-2-(pyrrolidine-1-carbonyl)-1,2,3,4-tetrahydro-2,7-naphthyridine,

N,N-dimethyl-6-{[5-methyl-3-(6-methylpyridin-3-yl)-1,2-oxazol-4-yl]methoxy}-1,2,3,4-tetrahydro-2,7-naphthyridine-2-carboxamide,

1-methyl-4-(6-{[5-methyl-3-(6-methylpyridin-3-yl)-1,2-oxazol-4-yl]methoxy}-1,2,3,4-tetrahydro-2,7-naphthyridine-2-carbonyl)pyrrolidin-2-one,

4-(6-{[5-methyl-3-(6-methylpyridin-3-yl)-1,2-oxazol-4-yl]methoxy}-1,2,3,4-tetrahydro-2,7-naphthyridine-2-carbonyl)-1-(propan-2-yl)pyrrolidin-2-one,

2-(4-methyl-1,2-oxazole-5-carbonyl)-6-{[5-methyl-3-(6-methylpyridin-3-yl)-1,2-oxazol-4-yl]methoxy}-1,2,3,4-tetrahydro-2,7-naphthyridine,

2-(3-methyl-1,2-oxazole-5-carbonyl)-6-{[5-methyl-3-(6-methylpyridin-3-yl)-1,2-oxazol-4-yl]methoxy}-1,2,3,4-tetrahydro-2,7-naphthyridine,

6-{[5-methyl-3-(6-methylpyridin-3-yl)-1,2-oxazol-4-yl]methoxy}-2-(oxane-3-carbonyl)-1,2,3,4-tetrahydro-2,7-naphthyridine,

1-methyl-5-(6-{[5-methyl-3-(6-methylpyridin-3-yl)-1,2-oxazol-4-yl]methoxy}-1,2,3,4-tetrahydro-2,7-naphthyridine-2-carbonyl)piperidin-2-one,

(5R)-1-methyl-5-(6-{[5-methyl-3-(6-methylpyridin-3-yl)-1,2-oxazol-4-yl]methoxy}-1,2,3,4-tetrahydro-2,7-naphthyridine-2-carbonyl)pyrrolidin-2-one,

(5S)-1-methyl-5-(6-{[5-methyl-3-(6-methylpyridin-3-yl)-1,2-oxazol-4-yl]methoxy}-1,2,3,4-tetrahydro-2,7-naphthyridine-2-carbonyl)pyrrolidin-2-one,

1-ethyl-4-(6-{[5-methyl-3-(6-methylpyridin-3-yl)-1,2-oxazol-4-yl]methoxy}-1,2,3,4-tetrahydro-2,7-naphthyridine-2-carbonyl)pyrrolidin-2-one,

1-(3-{[5-methyl-3-(6-methylpyridin-3-yl)-1,2-oxazol-4-yl]methoxy}-5H,6H,7H,8H-pyrido[3,4-c]pyridazin-7-yl)ethan-1-one,

3-{[5-methyl-3-(6-methylpyridin-3-yl)-1,2-oxazol-4-yl]methoxy}-N-(oxan-4-yl)-5H,6H,7H,8H-pyrido[3,4-c]pyridazine-7-carboxamide,

4-(3-{[5-methyl-3-(6-methylpyridin-3-yl)-1,2-oxazol-4-yl]methoxy}-5H,6H,7H,8H-pyrido[3,4-c]pyridazine-7-carbonyl)morpholine,

2-methyl-5-[5-methyl-4-({[7-(oxane-4-carbonyl)-5H,6H,7H,8H-pyrido[3,4-c]pyridazin-3-yl]oxy}methyl)-1,2-oxazol-3-yl]pyridine,

5-{4-[({7-cyclopropanecarbonyl-5H,6H,7H,8H-pyrido[3,4-c]pyridazin-3-yl}oxy)methyl]-5-methyl-1,2-oxazol-3-yl}-2-methylpyridine,

1-(3-{[5-methyl-3-(6-methylpyridin-3-yl)-1,2-oxazol-4-yl]methoxy}-5H,6H,7H,8H-pyrido[3,4-c]pyridazin-7-yl)propan-1-one,

2-fluoro-1-(3-{[5-methyl-3-(6-methylpyridin-3-yl)-1,2-oxazol-4-yl]methoxy}-5H,6H,7H,8H-pyrido[3,4-c]pyridazin-7-yl)ethan-1-one,

2-methyl-1-(3-{[5-methyl-3-(6-methylpyridin-3-yl)-1,2-oxazol-4-yl]methoxy}-5H,6H,7H,8H-pyrido[3,4-c]pyridazin-7-yl)propan-1-one,

5-{4-[({7-cyclobutanecarbonyl-5H,6H,7H,8H-pyrido[3,4-c]pyridazin-3-yl}oxy)methyl]-5-methyl-1,2-oxazol-3-yl}-2-methylpyridine,

N-cyclopropyl-3-{[5-methyl-3-(6-methylpyridin-3-yl)-1,2-oxazol-4-yl]methoxy}-5H,6H,7H,8H-pyrido[3,4-c]pyridazine-7-carboxamide,

1-[3-({5-methyl-3-[6-(trifluoromethyl)pyridin-3-yl]-1,2-oxazol-4-yl}methoxy)-5H,6H,7H,8H-pyrido[3,4-c]pyridazin-7-yl]ethan-1-one,

2-methanesulfonyl-1-[6-({5-methyl-3-[6-(trifluoromethyl)pyridin-3-yl]-1,2-oxazol-4-yl}methoxy)-1,2,3,4-tetrahydro-2,7-naphthyridin-2-yl]ethan-1-one,

2,2,2-trifluoro-1-[6-({5-methyl-3-[6-(trifluoromethyl)pyridin-3-yl]-1,2-oxazol-4-yl}methoxy)-1,2,3,4-tetrahydro-2,7-naphthyridin-2-yl]ethan-1-one,

1-(6-{[4-methyl-1-(6-methylpyridin-3-yl)-1H-1,2,3-triazol-5-yl]methoxy}-1,2,3,4-tetrahydro-2,7-naphthyridin-2-yl)ethan-1-one,

2-fluoro-1-(6-{[4-methyl-1-(6-methylpyridin-3-yl)-1H-1,2,3-triazol-5-yl]methoxy}-1,2,3,4-tetrahydro-2,7-naphthyridin-2-yl)ethan-1-one,

2-methyl-1-(6-{[4-methyl-1-(6-methylpyridin-3-yl)-1H-1,2,3-triazol-5-yl]methoxy}-1,2,3,4-tetrahydro-2,7-naphthyridin-2-yl)propan-1-one,

2,2-dimethyl-1-(6-{[4-methyl-1-(6-methylpyridin-3-yl)-1H-1,2,3-triazol-5-yl]methoxy}-1,2,3,4-tetrahydro-2,7-naphthyridin-2-yl)propan-1-one,

3-methyl-1-(6-{[4-methyl-1-(6-methylpyridin-3-yl)-1H-1,2,3-triazol-5-yl]methoxy}-1,2,3,4-tetrahydro-2,7-naphthyridin-2-yl)butan-1-one,

2-benzoyl-6-{[4-methyl-1-(6-methylpyridin-3-yl)-1H-1,2,3-triazol-5-yl]methoxy}-1,2,3,4-tetrahydro-2,7-naphthyridine,

1-(6-{[4-methyl-1-(6-methylpyridin-3-yl)-1H-1,2,3-triazol-5-yl]methoxy}-1,2,3,4-tetrahydro-2,7-naphthyridin-2-yl)propan-1-one,

2-cyclopropanecarbonyl-6-{[4-methyl-1-(6-methylpyridin-3-yl)-1H-1,2,3-triazol-5-yl]methoxy}-1,2,3,4-tetrahydro-2,7-naphthyridine,

2-cyclobutanecarbonyl-6-{[4-methyl-1-(6-methylpyridin-3-yl)-1H-1,2,3-triazol-5-yl]methoxy}-1,2,3,4-tetrahydro-2,7-naphthyridine,

6-{[4-methyl-1-(6-methylpyridin-3-yl)-1H-1,2,3-triazol-5-yl]methoxy}-2-(oxane-4-carbonyl)-1,2,3,4-tetrahydro-2,7-naphthyridine,

1-[6-({4-methyl-1-[6-(trifluoromethyl)pyridin-3-yl]-1H-1,2,3-triazol-5-yl}methoxy)-1,2,3,4-tetrahydro-2,7-naphthyridin-2-yl]ethan-1-one,

1-[6-({4-methyl-1-[6-(trifluoromethyl)pyridin-3-yl]-1H-1,2,3-triazol-5-yl}methoxy)-1,2,3,4-tetrahydro-2,7-naphthyridin-2-yl]propan-1-one,

2-fluoro-1-[6-({4-methyl-1-[6-(trifluoromethyl)pyridin-3-yl]-1H-1,2,3-triazol-5-yl}methoxy)-1,2,3,4-tetrahydro-2,7-naphthyridin-2-yl]ethan-1-one,

2-methyl-1-[6-({4-methyl-1-[6-(trifluoromethyl)pyridin-3-yl]-1H-1,2,3-triazol-5-yl}methoxy)-1,2,3,4-tetrahydro-2,7-naphthyridin-2-yl]propan-1-one,

2-cyclopropanecarbonyl-6-({4-methyl-1-[6-(trifluoromethyl)pyridin-3-yl]-1H-1,2,3-triazol-5-yl}methoxy)-1,2,3,4-tetrahydro-2,7-naphthyridine,

1-[3-{[4-methyl-1-(6-methylpyridin-3-yl)-1*H*-1,2,3-triazol-5-yl]methoxy}-5,8-dihydropyrido[3,4-*c*]pyridazin-7(6*H*)-yl]ethanone,

1-[3-({4-methyl-1-[6-(trifluoromethyl)pyridin-3-yl]-1*H*-1,2,3-triazol-5-yl}methoxy)-5,8-dihydropyrido[3,4-*c*]pyridazin-7(6*H*)-yl]ethanone,

1-[3-({1-[6-(difluoromethyl)pyridin-3-yl]-4-methyl-1*H*-1,2,3-triazol-5-yl}methoxy)-5,8-dihydropyrido[3,4-*c*]pyridazin-7(6*H*)-yl]ethanone,

1-[6-({1-[6-(difluoromethyl)pyridin-3-yl]-4-methyl-1*H*-1,2,3-triazol-5-yl}methoxy)-3,4 dihydro-2,7-naphthyridin-2(1*H*)-yl]ethanone,

1-[6-({1-[6-(difluoromethyl)pyridin-3-yl]-4-methyl-1*H*-1,2,3-triazol-5-yl}methoxy)-3,4 dihydro-2,7-naphthyridin-2(1*H*)-yl]propan-1-one,

2-fluoro-1-[6-({4-methyl-1-[6-(difluoromethyl)pyridin-3-yl]-1H-1,2,3-triazol-5-yl}methoxy)-1,2,3,4-tetrahydro-2,7-naphthyridin-2-yl]ethan-1-one,

2-cyclopropanecarbonyl-6-({4-methyl-1-[6-(difluoromethyl)pyridin-3-yl]-1*H*-1,2,3-triazol-5-yl}methoxy)-1,2,3,4-tetrahydro-2,7-naphthyridine,

2-methyl-1-[6-({4-methyl-1-[6-(difluoromethyl)pyridin-3-yl]-1*H*-1,2,3-triazol-5-yl}methoxy)-1,2,3,4-tetrahydro-2,7-naphthyridin-2-yl]propan-1-one,

1-(6-{[1-methyl-4-(6-methylpyridin-3-yl)-1H-1,2,3-triazol-5-yl]methoxy}-1,2,3,4-tetrahydro-2,7-naphthyridin-2-yl)ethan-1-one,

2,2-dimethyl-1-(6-{[1-methyl-4-(6-methylpyridin-3-yl)-1H-1,2,3-triazol-5-yl]methoxy}-1,2,3,4-tetrahydro-2,7-naphthyridin-2-yl)propan-1-one,

1-(6-{[1-methyl-4-(6-methylpyridin-3-yl)-1H-1,2,3-triazol-5-yl]methoxy}-1,2,3,4-tetrahydro-2,7-naphthyridin-2-yl)propan-1-one,

2-methyl-1-(6-{[1-methyl-4-(6-methylpyridin-3-yl)-1H-1,2,3-triazol-5-yl]methoxy}-1,2,3,4-tetrahydro-2,7-naphthyridin-2-yl)propan-1-one,

3-methyl-1-(6-{[1-methyl-4-(6-methylpyridin-3-yl)-1H-1,2,3-triazol-5-yl]methoxy}-1,2,3,4-tetrahydro-2,7-naphthyridin-2-yl)butan-1-one,

2-cyclopropanecarbonyl-6-{[1-methyl-4-(6-methylpyridin-3-yl)-1H-1,2,3-triazol-5-yl]methoxy}-1,2,3,4-tetrahydro-2,7-naphthyridine,

2-cyclobutanecarbonyl-6-{[1-methyl-4-(6-methylpyridin-3-yl)-1H-1,2,3-triazol-5-yl]methoxy}-1,2,3,4-tetrahydro-2,7-naphthyridine,

2-benzoyl-6-{[1-methyl-4-(6-methylpyridin-3-yl)-1H-1,2,3-triazol-5-yl]methoxy}-1,2,3,4-tetrahydro-2,7-naphthyridine,

2-fluoro-1-(6-{[1-methyl-4-(6-methylpyridin-3-yl)-1H-1,2,3-triazol-5-yl]methoxy}-1,2,3,4-tetrahydro-2,7-naphthyridin-2-yl)ethan-1-one,

6-{[1-methyl-4-(6-methylpyridin-3-yl)-1H-1,2,3-triazol-5-yl]methoxy}-2-(oxane-4-carbonyl)-1,2,3,4-tetrahydro-2,7-naphthyridine, and

1-(6-{[1-methyl-4-(6-methylpyridin-3-yl)-1H-1,2,3-triazol-5-yl]methoxy}-5,8-dihydropyrido[3,4-*c*]pyridazin-7(6*H*)-yl]ethanone.

12. A compound according to any one of claims 1 to 11, for use as medicament.

13. A compound according to any one of claims 1 to 11, for use in the treatment or prevention of diseases related to the $GABA_A$ α5 receptor.

14. A compound according to claim 13, for use wherein the disease related to the $GABA_A$ α5 receptor is selected from the group consisting of neurodevelopmental disorders, neurodegenerative disorders, neurocognitive disorders, schizophrenia, mood disorders, pain disorders, substance-related and addictive disorders and other diseases.

15. A compound according to claim 14, for use wherein the disease related to the $GABA_A$ α5 receptor is selected from the group consisting of autism spectrum disorder (ASD), Angelman syndrome, Fragile X disorder, Prader-Willi syndrome, Rett syndrome, Alzheimer's disease (AD), cognition deficiency disorders, memory deficits, age-associated memory impairment or cognitive decline, dementia, mild cognitive impairment (MCI), bipolar disorders, negative and/or cognitive symptoms associated with schizophrenia, epilepsy, post-traumatic stress disorder, amyotrophic lateral sclerosis.

16. A compound according to any one of claims 1 to 11 in combination with one or more other active ingredients, for use in the treatment or prevention of diseases related to the $GABA_A$ α5 receptor.

17. Use of a compound according to any one of claims 1 to 11, for the manufacture of a medicament for the treatment or prevention of diseases related to the $GABA_A$ α5 receptor.

18. The use according to claim 17, wherein the disease related to the $GABA_A$ α5 receptor is selected from the group consisting of neurodevelopmental disorders, neurodegenerative disorders, neurocognitive disorders, schizophrenia, mood disorders, pain disorders, substance-related and addictive disorders and other diseases.

19. The use according to claim 18, wherein the disease related to the $GABA_A$ α5 receptor is selected from the group consisting of autism spectrum disorder (ASD), Angelman syndrome, Fragile X disorder, Prader-Willi syndrome, Rett syndrome, Alzheimer's disease (AD), cognition deficiency disorders, memory deficits, age-associated memory impairment or cognitive decline, dementia, mild cognitive impairment (MCI), bipolar disorders, negative and/or cognitive symptoms associated with schizophrenia, epilepsy, post-traumatic stress disorder, amyotrophic lateral sclerosis.

20. Use of a compound according to any one of claims 1 to 11 in combination with one or more other active ingredients, for the manufacture of a medicament for the treatment or prevention of diseases related to the $GABA_A$ α5 receptor.

21. A method of treating or preventing diseases related to the $GABA_A$ α5 receptor, comprising administering to a subject in need of such treatment or prevention an effective amount of at least one compound according to any one of claims 1 to 11.

22. The method according to claim 21, wherein the disease related to the $GABA_A$ α5 receptor is selected from the group consisting of neurodevelopmental disorders, neurodegenerative disorders, neurocognitive disorders, schizophrenia, mood disorders, pain disorders, substance-related and addictive disorders and other diseases.

23. The method according to claim 22, wherein the disease related to the $GABA_A$ α5 receptor is selected from the group consisting of autism spectrum disorder (ASD), Angelman syndrome, Fragile X disorder, Prader-Willi syndrome, Rett syndrome, Alzheimer's disease (AD), cognition deficiency disorders, memory deficits, age-associated memory impairment or cognitive decline, dementia, mild cognitive impairment (MCI), bipolar disorders, negative

and/or cognitive symptoms associated with schizophrenia, epilepsy, post-traumatic stress disorder, amyotrophic lateral sclerosis.

24. A method of treating or preventing diseases related to the $GABA_A$ α5 receptor comprising administering to a subject in need of such treatment or prevention an effective amount of at least one compound according to any one of claims 1 to 11 in combination with one or more other active ingredients.

25. A pharmaceutical composition comprising as active ingredient at least one compound according to any one of claims 1 to 11 and at least one physiologically or pharmaceutically acceptable excipient.

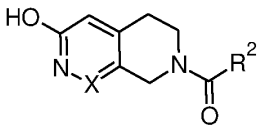
26. The pharmaceutical composition according to claim 25, wherein the composition further comprises one or more other active ingredients.

27. The pharmaceutical composition according to claim 25 or 26, for use in the treatment or prevention of diseases related to the $GABA_A$ α5 receptor.

28. The pharmaceutical composition according to claim 27, for use wherein the disease related to the $GABA_A$ α5 receptor is selected from the group consisting of neurodevelopmental disorders, neurodegenerative disorders, neurocognitive disorders, schizophrenia, mood disorders, pain disorders, substance-related and addictive disorders and other diseases.

29. The pharmaceutical composition according to claim 28, for use wherein the disease related to the $GABA_A$ α5 receptor is selected from the group consisting of autism spectrum disorder (ASD), Angelman syndrome, Fragile X disorder, Prader-Willi syndrome, Rett syndrome, Alzheimer's disease (AD), cognition deficiency disorders, memory deficits, age-associated memory impairment or cognitive decline, dementia, mild cognitive impairment (MCI), bipolar disorders, negative and/or cognitive symptoms associated with schizophrenia, epilepsy, post-traumatic stress disorder, amyotrophic lateral sclerosis.

30. A compound of formula (V),



(V)

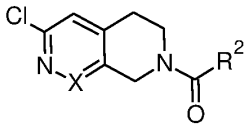
wherein

$R^2$ is $C_{1-4}$alkyl, halo-$C_{1-4}$alkyl, $C_{1-4}$alkyl-$S(O)_2$-$C_{1-4}$alkyl, $C_{1-4}$alkoxy, $C_{3-7}$cycloalkyl, $C_{6-10}$aryl, optionally substituted $C_{3-10}$heterocycle, $C_{5-10}$heteroaryl, or $NR^3R^4$ group wherein $R^3$ and $R^4$ is each independently H, $C_{1-4}$alkyl, $C_{3-7}$cycloalkyl or $C_{3-10}$heterocycle group,

X is CH or N,

with the proviso when X is N and $R^2$ is a methoxy, ethoxy group; and when $R^2$ is a *tert*-butoxy group.

31. A compound of formula (VII),



(VII)

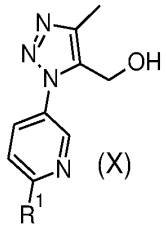
wherein

$R^2$ is $C_{1-4}$alkyl, halo-$C_{1-4}$alkyl, $C_{1-4}$alkyl-$S(O)_2$-$C_{1-4}$alkyl, $C_{1-4}$alkoxy, $C_{3-7}$cycloalkyl, $C_{6-10}$aryl, optionally substituted $C_{3-10}$heterocycle, $C_{5-10}$heteroaryl, or $NR^3R^4$ group wherein $R^3$ and $R^4$ is each independently H, $C_{1-4}$alkyl, $C_{3-7}$cycloalkyl or $C_{3-10}$heterocycle group,

X is CH or N,

with the proviso when X is CH and $R^2$ is a 3-pyridinyl or [6-methyl-4-[(1-methylcyclopropyl)amino]furo[2,3-*d*]pyrimidin-5-yl] group; and when $R^2$ is a *tert*-butoxy group.

32. A compound of formula formula (X), wherein $R^1$ is a $C_{1-4}$alkyl or halo-$C_{1-4}$alkyl group



(X)

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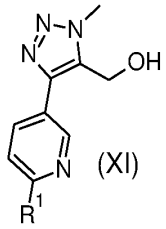
33. A compound of formula formula (XI), wherein $R^1$ is a $C_{1-4}$alkyl or halo-$C_{1-4}$alkyl group



(XI)

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