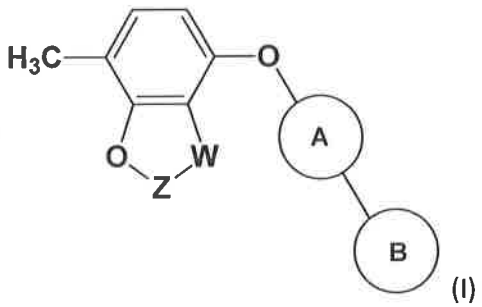
Claims:

1. A compound of formula (I):



(I)

Wherein:

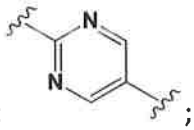
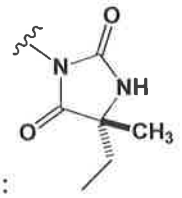
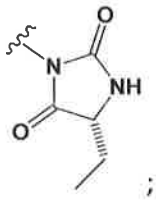
W is CR_aR_b or O;

when W is CR_aR_b then Z is CH_2;

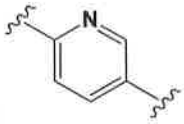
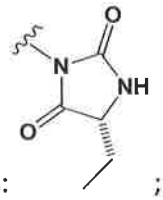
when W is O then Z is CF_2;

R_a and R_b are CH_3 or taken together form a C_3 spiro cycloalkyl;

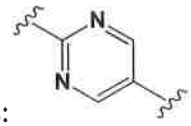
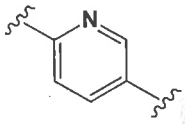
wherein, when W is CR_aR_b, Z is CH_2 and R_a and R_b are CH_3:

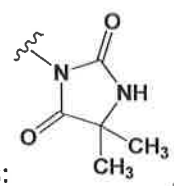
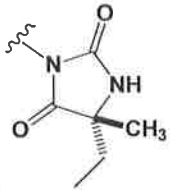
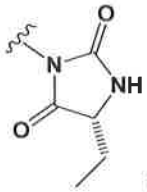
Ring A is:  ; and Ring B is:  or  ;

or

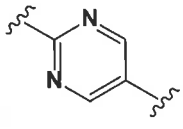
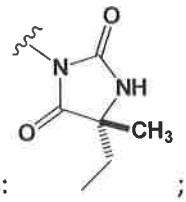
Ring A is:  and Ring B is:  ;

wherein, when W is CR_aR_b, Z is CH_2 and R_a and R_b taken together form a C_3 spiro cycloalkyl:

Ring A is:  or  ; and

Ring B is:  ,  or  ; and

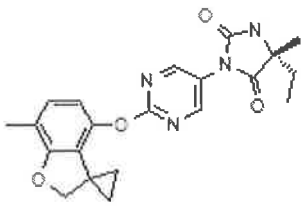
wherein, when W is O and Z is CF_2:

Ring A is:  ; and Ring B is:  ;

or a pharmaceutically acceptable salt and/or solvate thereof.

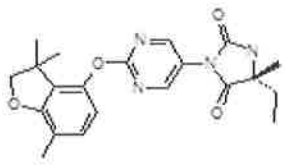
2. The compound according to claim 1, which is:

(5R)-5-ethyl-5-methyl-3-[2-(7-methylspiro[2H-benzofuran-3,1'-cyclopropane]-4-yl)oxypyrimidin-5-yl]imidazolidine-2,4-dione



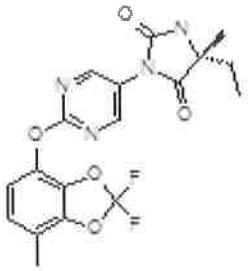
3. The compound according to claim 1, which is:

(5R)-5-ethyl-5-methyl-3-{2-[(3,3,7-trimethyl-2,3-dihydro-1-benzofuran-4-yl)oxy]-5-pyrimidinyl}-2,4-imidazolidinedione



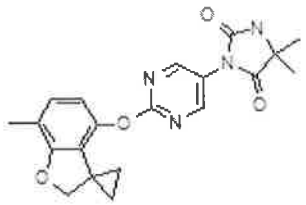
4. The compound according to claim 1, which is:

(5R)-3-{2-[(2,2-difluoro-7-methyl-1,3-benzodioxol-4-yl)oxy]-5-pyrimidinyl}-5-ethyl-5-methyl-2,4-imidazolidinedione



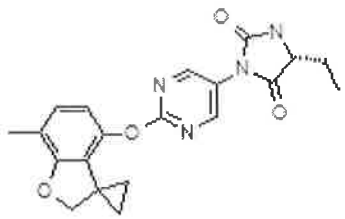
5. The compound according to claim 1, which is:

5,5-dimethyl-3-[2-(7-methylspiro[2H-benzofuran-3,1'-cyclopropane]-4-yl)oxypyrimidin-5-yl]imidazolidine-2,4-dione



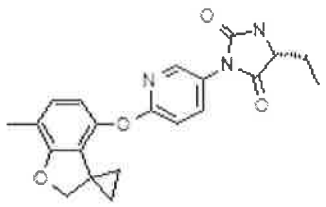
6. The compound according to claim 1, which is:

(5R)-5-ethyl-3-[2-(7-methylspiro[2H-benzofuran-3,1'-cyclopropane]-4-yl)oxypyrimidin-5-yl]imidazolidine-2,4-dione



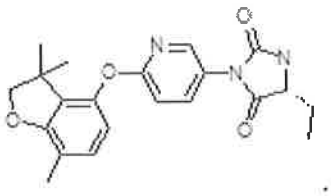
7. The compound according to claim 1, which is:

(5R)-5-ethyl-3-[6-(7-methylspiro[2H-benzofuran-3,1'-cyclopropane]-4-yl)oxy-3-pyridyl]imidazolidine-2,4-dione



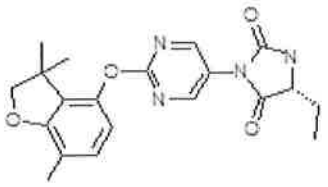
8. The compound according to claim 1, which is:

(5R)-5-ethyl-3-{6-[(3,3,7-trimethyl-2,3-dihydro-1-benzofuran-4-yl)oxy]-3-pyridinyl}-2,4-imidazolidinedione



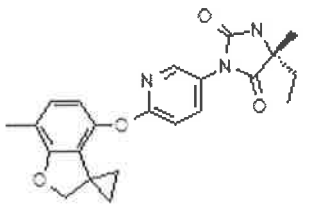
9. The compound according to claim 1, which is:

(5R)-5-ethyl-3-{2-[(3,3,7-trimethyl-2,3-dihydro-1-benzofuran-4-yl)oxy]-5-pyrimidinyl}-2,4-imidazolidinedione



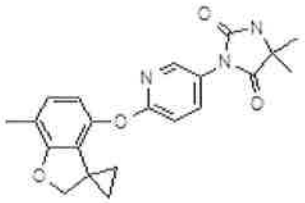
10. The compound according to claim 1, which is:

(5R)-5-ethyl-5-methyl-3-[6-(7-methylspiro[2H-benzofuran-3,1'-cyclopropane]-4-yl)oxy-3-pyridyl]imidazolidine-2,4-dione



11. The compound according to claim 1, which is:

5,5-dimethyl-3-[6-(7-methylspiro[2H-benzofuran-3,1'-cyclopropane]-4-yl)oxy-3-pyridyl]imidazolidine-2,4-dione



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

13. A method for the prophylaxis or treatment of hearing disorders, schizophrenia, or Fragile X syndrome by administering to a subject a compound according to any one of claims 1 to 11.

14. Use of a compound according to any one of claims 1 to 11 in the manufacture of a medicament for the prophylaxis or treatment of hearing disorders, schizophrenia, or Fragile X syndrome.

15. The compound for use according to claim 12, method according to claim 13 or use according to claim 14 for the prophylaxis or treatment of hearing disorders.

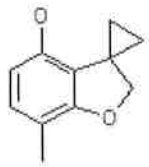
16. The compound for use, method or use of claim 15, wherein the hearing disorder is hearing loss in adults over 60 (presbycusis) or tinnitus.

17. The compound for use according to claim 12, method according to claim 13 or use according to claim 14, for the prophylaxis or treatment of schizophrenia.

18. The compound for use according to claim 12, method according to claim 13 or use according to claim 14, for the prophylaxis or treatment of Fragile X syndrome.

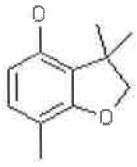
19. A compound selected from:

7-methylspiro[2H-benzofuran-3,1'-cyclopropane]-4-ol



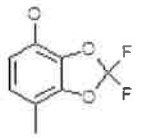
; and

3,3,7-trimethyl-2,3-dihydro-1-benzofuran-4-ol



; and

2,2-difluoro-7-methyl-1,3-benzodioxol-4-ol (Intermediate 37)

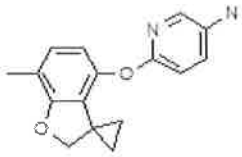


,

or a salt thereof.

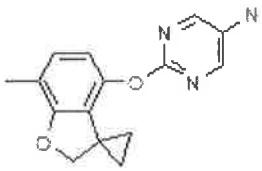
20. A compound selected from:

6-(7-methylspiro[2H-benzofuran-3,1'-cyclopropane]-4-yl)oxypyridin-3-amine (Intermediate 15)



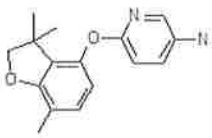
; and

2-(7-methylspiro[2H-benzofuran-3,1'-cyclopropane]-4-yl)oxypyrimidin-5-amine (Intermediate 19)



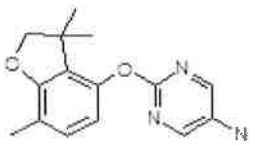
; and

6-[(3,3,7-trimethyl-2,3-dihydro-1-benzofuran-4-yl)oxy]-3-pyridinamine (Intermediate 29)



; and

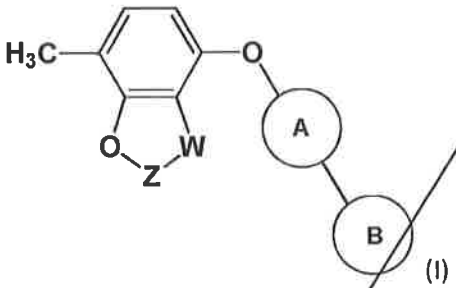
2-[(3,3,7-trimethyl-2,3-dihydro-1-benzofuran-4-yl)oxy]-5-pyrimidinamine (Intermediate 33)



or a salt thereof.

Claims:

1. A compound of formula (I):



(I)

Wherein:

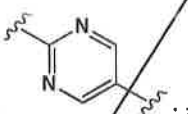
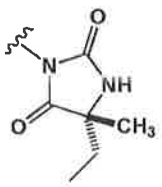
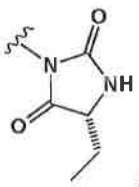
W is CR_aR_b or O;

when W is CR_aR_b then Z is CH_2;

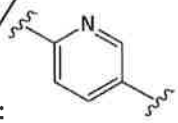
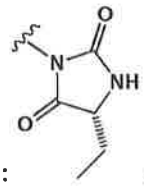
when W is O then Z is CF_2;

R_a and R_b are CH_3 or taken together form a C_3 spiro cycloalkyl;

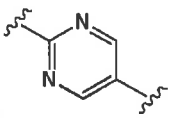
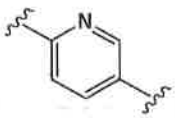
wherein, when W is CR_aR_b, Z is CH_2 and R_a and R_b are CH_3:

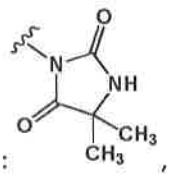
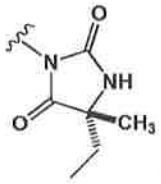
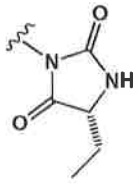
Ring A is:  ; and Ring B is:  or  ;

or

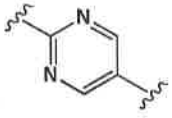
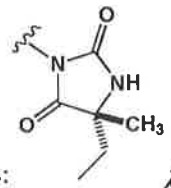
Ring A is:  and Ring B is:  ;

wherein, when W is CR_aR_b, Z is CH_2 and R_a and R_b taken together form a C_3 spiro cycloalkyl:

Ring A is:  or  ; and

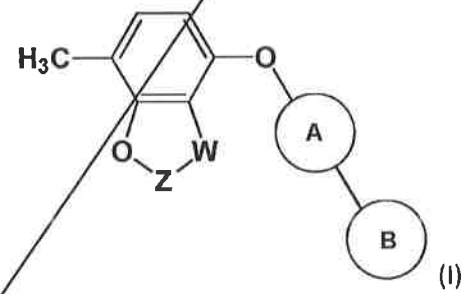
Ring B is:  ,  or  ; and

wherein, when W is O and Z is CF_2:

Ring A is:  ; and Ring B is:  ;

or a pharmaceutically acceptable salt and/or solvate thereof.

2. The compound according to claim 1, which is:


(I)

Wherein:

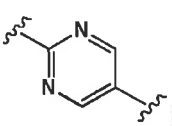
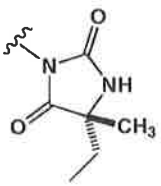
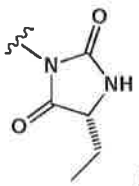
W is CR_aR_b or O;

when W is CR_aR_b then Z is CH_2;

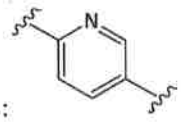
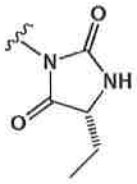
when W is O then Z is CF_2;

R_a and R_b are CH_3 or taken together form a C_3 spiro cycloalkyl;

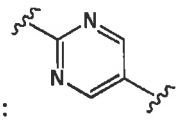
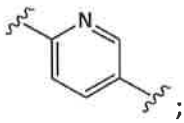
wherein, when W is CR_aR_b, Z is CH_2 and R_a and R_b are CH_3:

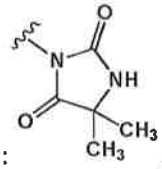
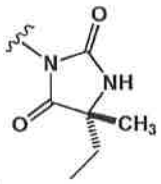
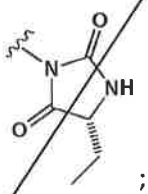
Ring A is:  ; and Ring B is:  or  ;

or

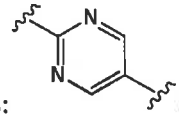
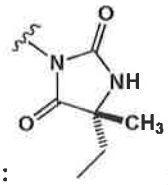
Ring A is:  and Ring B is: ;

wherein, when W is CR_aR_b, Z is CH_2 and R_a and R_b taken together form a C_3 spiro cycloalkyl:

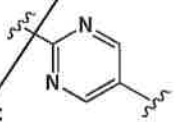
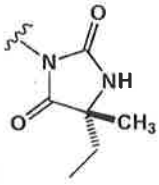
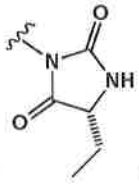
Ring A is:  or ; and

Ring B is: ,  or ; and

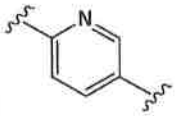
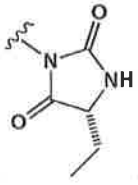
wherein, when W is O and Z is CF_2:

Ring A is: ; and Ring B is: .

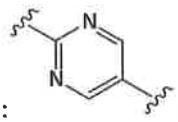
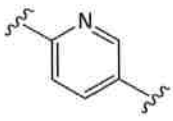
3. The compound according to claim 1 or claim 2, wherein W is CR_aR_b, Z is CH_2 and R_a and R_b are CH_3, and:

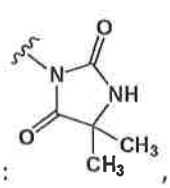
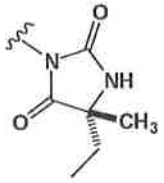
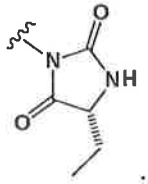
Ring A is: ; and Ring B is:  or ;

or

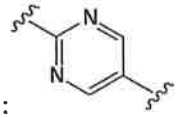
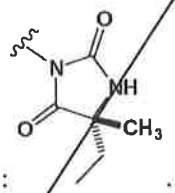
Ring A is:  and Ring B is: .

4. The compound according to claims 1 or claim 2, wherein W is CR_aR_b, Z is CH_2 and R_a and R_b taken together form a C_3 spiro cycloalkyl, and:

Ring A is:  or  ; and

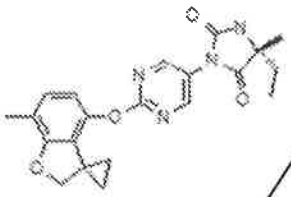
Ring B is:  ,  or  .

5. The compound according to claim 1 or claim 2, wherein W is O and Z is CF_2:

Ring A is:  ; and Ring B is:  .

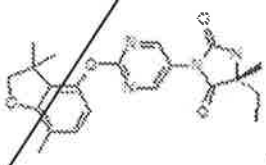
6. The compound according to claim 1, which is:

(5R)-5-ethyl-5-methyl-3-[2-(7-methylspiro[2H-benzofuran-3,1'-cyclopropane]-4-yl)oxypyrimidin-5-yl]imidazolidine-2,4-dione



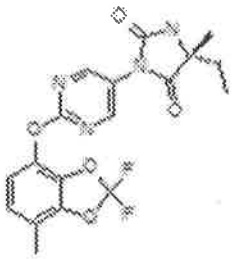
7. The compound according to claim 1, which is:

(5R)-5-ethyl-5-methyl-3-{2-[(3,3,7-trimethyl-2,3-dihydro-1-benzofuran-4-yl)oxy]-5-pyrimidinyl}-2,4-imidazolidinedione



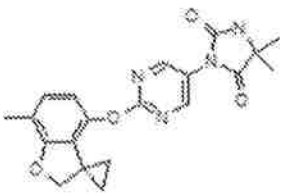
8. The compound according to claim 1, which is:

(5R)-3-{2-[(2,2-difluoro-7-methyl-1,3-benzodioxol-4-yl)oxy]-5-pyrimidinyl}-5-ethyl-5-methyl-2,4-imidazolidinedione



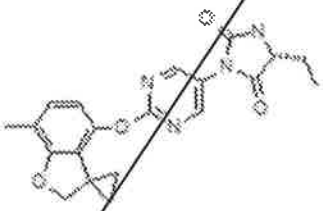
9. The compound according to claim 1, which is:

5,5-dimethyl-3-[2-(7-methylspiro[2H-benzofuran-3,1'-cyclopropane]-4-yl)oxypyrimidin-5-yl]imidazolidine-2,4-dione



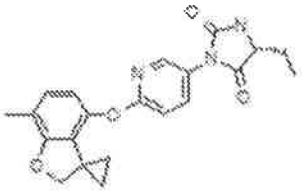
10. The compound according to claim 1, which is:

(5R)-5-ethyl-3-[2-(7-methylspiro[2H-benzofuran-3,1'-cyclopropane]-4-yl)oxypyrimidin-5-yl]imidazolidine-2,4-dione



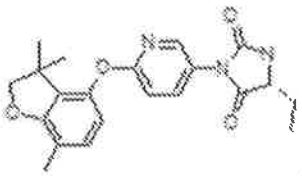
11. The compound according to claim 1, which is:

(5R)-5-ethyl-3-[6-(7-methylspiro[2H-benzofuran-3,1'-cyclopropane]-4-yl)oxy-3-pyridyl]imidazolidine-2,4-dione



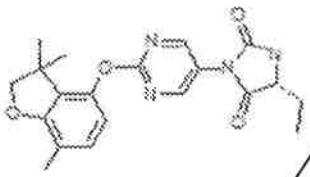
12. The compound according to claim 1, which is:

(5R)-5-ethyl-3-{6-[(3,3,7-trimethyl-2,3-dihydro-1-benzofuran-4-yl)oxy]-3-pyridinyl}-2,4-imidazolidinedione



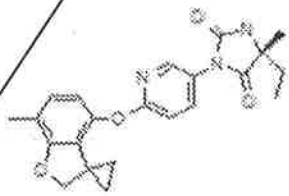
13. The compound according to claim 1, which is:

(5R)-5-ethyl-3-{2-[(3,3,7-trimethyl-2,3-dihydro-1-benzofuran-4-yl)oxy]-5-pyrimidinyl}-2,4-imidazolidinedione



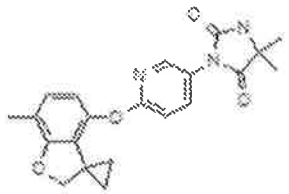
14. The compound according to claim 1, which is:

(5R)-5-ethyl-5-methyl-3-[6-(7-methylspiro[2H-benzofuran-3,1'-cyclopropane]-4-yl)oxy-3-pyridyl]imidazolidine-2,4-dione



15. The compound according to claim 1, which is:

5,5-dimethyl-3-[6-(7-methylspiro[2H-benzofuran-3,1'-cyclopropane]-4-yl)oxy-3-pyridyl]imidazolidine-2,4-dione



16. The compound according to any one of claims 1 to 15, for use as a medicament.

17. The compound according to claim 16, for use in the prophylaxis or treatment of hearing disorders, schizophrenia, bipolar disorder, epilepsy or sleep disorders.

18. The compound according to claim 17, for use in the prophylaxis or treatment of hearing loss or tinnitus.

19. The compound according to any one of claims 16 to 18, for use in conjunction with a further pharmaceutically active agent.

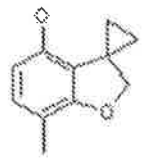
20. A method for the prophylaxis or treatment of hearing disorders, schizophrenia, bipolar disorder, epilepsy or sleep disorders by administering to a subject a compound according to any one of claims 1 to 15.

21. Use of a compound according to any one of claims 1 to 15 in the manufacture of a medicament for the prophylaxis or treatment of hearing disorders, schizophrenia, bipolar disorder, epilepsy or sleep disorders.

22. A pharmaceutical composition comprising a compound according to any one of claims 1 to 15 and a pharmaceutically acceptable carrier or excipient.

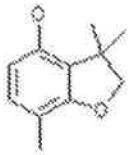
23. A compound selected from:

7-methylspiro[2H-benzofuran-3,1'-cyclopropane]-4-ol



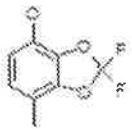
; and

3,3,7-trimethyl-2,3-dihydro-1-benzofuran-4-ol



; and

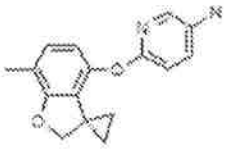
2,2-difluoro-7-methyl-1,3-benzodioxol-4-ol (Intermediate 37)



or a salt thereof.

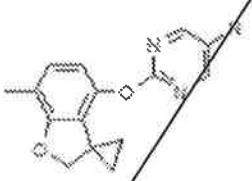
24. A compound selected from:

6-(7-methylspiro[2H-benzofuran-3,1'-cyclopropane]-4-yl)oxypyridin-3-amine (Intermediate 15)



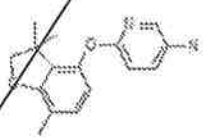
; and

2-(7-methylspiro[2H-benzofuran-3,1'-cyclopropane]-4-yl)oxypyrimidin-5-amine (Intermediate 19)



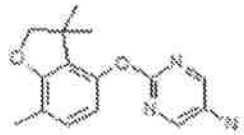
; and

6-[(3,3,7-trimethyl-2,3-dihydro-1-benzofuran-4-yl)oxy]-3-pyridinamine (Intermediate 29)



; and

2-[(3,3,7-trimethyl-2,3-dihydro-1-benzofuran-4-yl)oxy]-5-pyrimidinamine (Intermediate 33)



or a salt thereof.