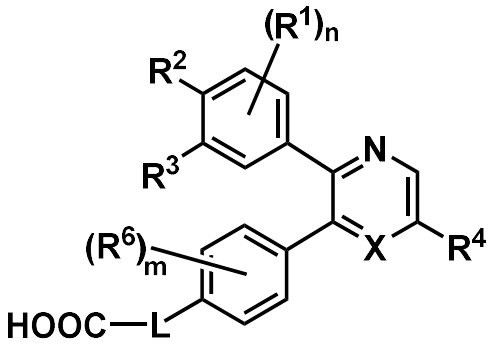
CLAIMS

1. A compound of Formula [I], or a pharmaceutically acceptable salt thereof:



[I]

wherein

=X- is =C(R^5)- or =N-;

-L-COOH is

(1) -COOH,

(2) -C(R^{71})(R^{72})-COOH,

(3) -C(R^{73})(R^{74})-C(R^{75})(R^{76})-COOH, or

(4) -O-C(R^{77})(R^{78})-COOH;

n is 0, 1, or 2;

m is 0, 1, 2, or 3;

R^1 is each independently halogen or C_{1-3} alkyl;

R^2 is

(1) halogen,

(2) hydroxy,

(3) cyano,

(4) C_{1-6} alkyl optionally substituted with 1 to 3 substituents independently selected from the group consisting of cyano and C_{1-3} alkoxy,

(5) halo C_{1-6} alkyl,

(6) C_{1-6} alkoxy,

(7) halo C_{1-6} alkoxy,

(8) -$COOR^{21}$ wherein R^{21} is hydrogen or C_{1-3} alkyl,

(9) $-CON(R^{22})(R^{23})$ wherein R^{22} and R^{23} are each independently hydrogen or C_{1-3} alkyl,

(10) C_{3-6} cycloalkyl or

(11) a 4- to 6-membered saturated heterocyclic group containing 1 or 2 hetero atom as a ring atom in addition to the carbon atoms, wherein the hetero atom is independently selected from the group consisting of oxygen, nitrogen and sulfur atoms, and

R^3 is

(1) hydrogen,

(2) halogen,

(3) cyano,

(4) C_{1-3} alkyl,

(5) halo C_{1-3} alkyl,

(6) C_{1-3} alkoxy, or

(7) $-COOR^{31}$ wherein R^{31} is hydrogen or C_{1-3} alkyl or

R^2 and R^3, together with the carbon atoms that they are bonded to, form a 4- to 6-membered saturated heterocycle containing 1 or 2 hetero atom as a ring atom in addition to the carbon atoms, wherein the hetero atom is independently selected from the group consisting of oxygen, nitrogen and sulfur atoms;

R^4 is

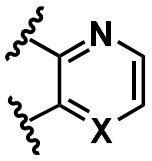
(1) C_{1-8} alkyl optionally substituted with 1 to 3 substituents independently selected from the following Group A,

(2) halo C_{1-6} alkyl,

(3) $-CON(R^{41})(R^{42})$ wherein R^{41} and R^{42} are each independently hydrogen or C_{1-6} alkyl,

(4) C_{3-6} cycloalkyl optionally substituted with 1 to 3 substituents independently selected from C_{1-3} alkoxy, or

(5) a 4- to 6-membered saturated heterocyclic group containing 1 or 2 hetero atom as a ring atom in addition to the carbon atoms, wherein the hetero atom is independently selected from the group consisting of oxygen, nitrogen and sulfur atoms, and wherein the ring atom in the heterocyclic group bonded to



is a carbon atom, and

Group A consists of

(a) hydroxy,

(b) C_{1-3} alkoxy optionally substituted with one hydroxy or one C_{1-3} alkoxy,

(c) halo C_{1-3} alkoxy,

(d) C_{3-6} cycloalkyl optionally substituted with one hydroxy, and

(e) phenyl, and

R^5 is hydrogen, halogen or C_{1-3} alkyl or

R^4 and R^5, together with the carbon atoms that they are bonded to, form C_{3-6} cycloalkane;

R^6 are each independently halogen, hydroxy, C_{1-3} alkyl or C_{1-3} alkoxy; and

R^{71}, R^{72}, R^{73}, R^{74}, R^{75}, R^{76}, R^{77}, and R^{78} are each independently hydrogen or C_{1-3} alkyl.

2. The compound according to Claim 1 or a pharmaceutically acceptable salt thereof, wherein -L-COOH is -COOH.

3. The compound according to Claim 1 or 2 or a pharmaceutically acceptable salt thereof, wherein n is 0 or 1.

4. The compound according to any one of Claims 1 to 3 or a pharmaceutically acceptable salt thereof, wherein m is 0 or 1.

5. The compound according to any one of Claims 1 to 4 or a pharmaceutically acceptable salt thereof, wherein R^3 is

(1) hydrogen or

(2) halogen.

6. The compound according to any one of Claims 1 to 5 or a

pharmaceutically acceptable salt thereof, wherein

R^4 is

(1) C_{1-8} alkyl optionally substituted with 1 to 3 substituents independently selected from the following Group A,

(2) halo C_{1-6} alkyl, or

(3) $-CON(R^{41})(R^{42})$ wherein R^{41} and R^{42} are each independently hydrogen or C_{1-6} alkyl, and

Group A consists of

(a) hydroxy,

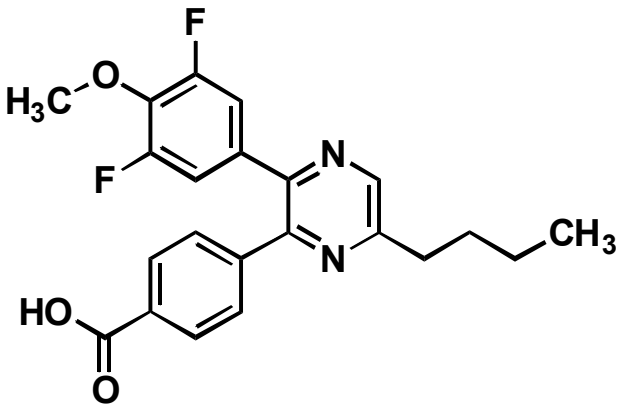
(b) C_{1-3} alkoxy optionally substituted with one hydroxy or one C_{1-3} alkoxy,

(c) halo C_{1-3} alkoxy,

(d) C_{3-6} cycloalkyl optionally substituted with one hydroxy, and

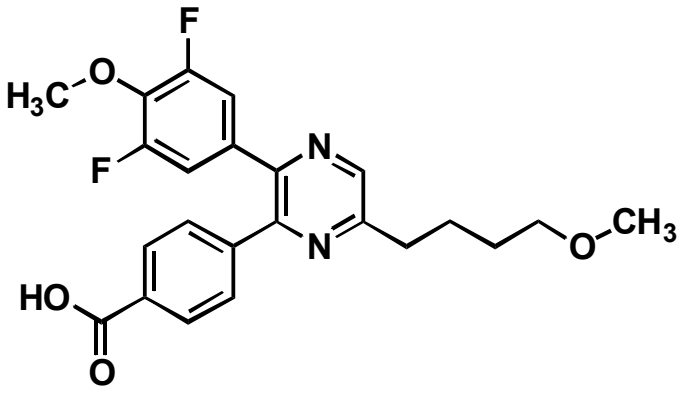
(e) phenyl.

7. A compound of the following formula or a pharmaceutically acceptable salt thereof:



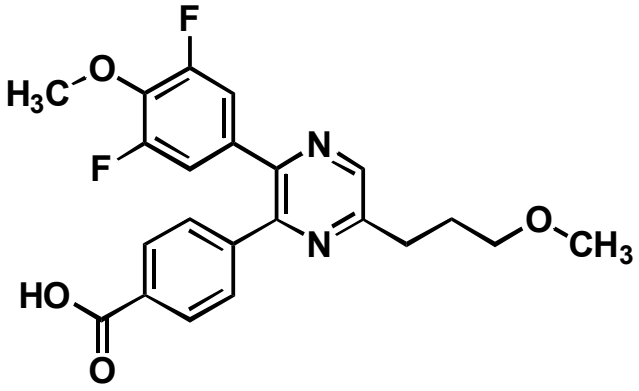
(Example 21).

8. A compound of the following formula or a pharmaceutically acceptable salt thereof:



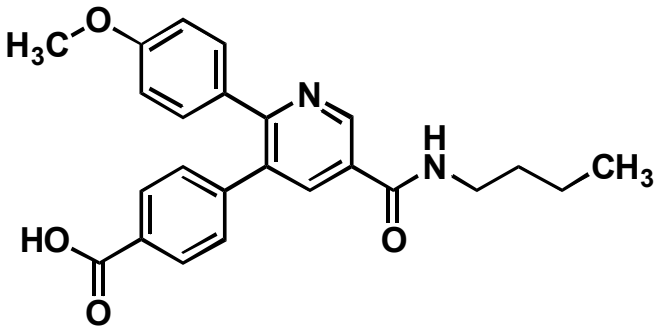
(Example 35).

9. A compound of the following formula or a pharmaceutically acceptable salt thereof:



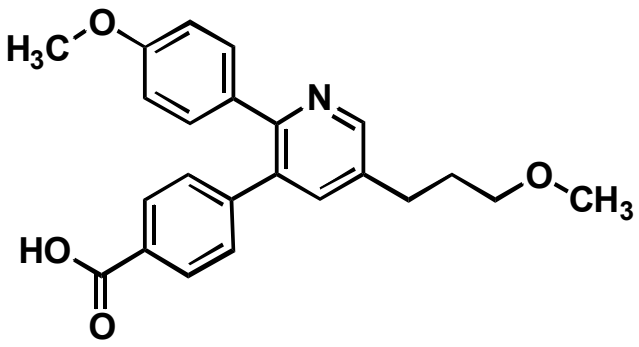
(Example 67).

10. A compound of the following formula or a pharmaceutically acceptable salt thereof:



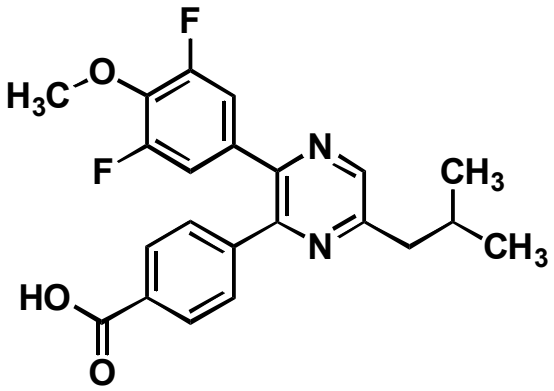
(free form of Example 76).

11. A compound of the following formula or a pharmaceutically acceptable salt thereof:



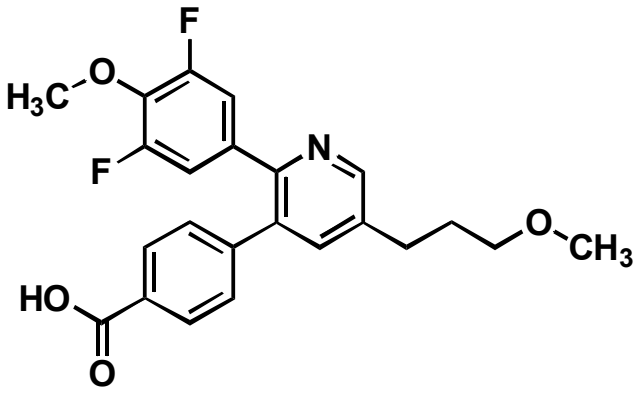
(Example 84).

12. A compound of the following formula or a pharmaceutically acceptable salt thereof:



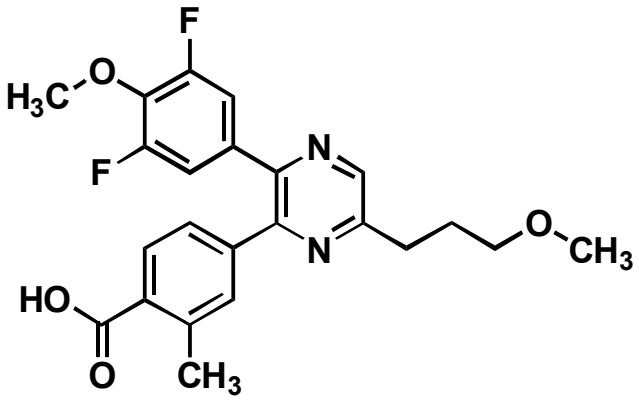
(Example 98).

13. A compound of the following formula or a pharmaceutically acceptable salt thereof:



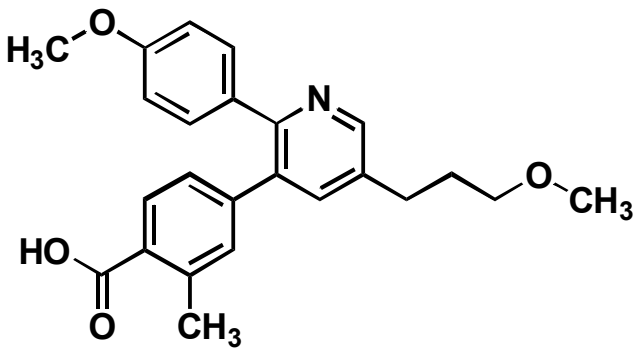
(Example 107).

14. A compound of the following formula or a pharmaceutically acceptable salt thereof:



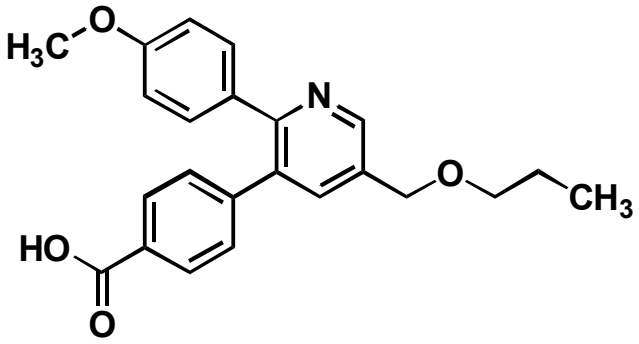
(Example 109).

15. A compound of the following formula or a pharmaceutically acceptable salt thereof:



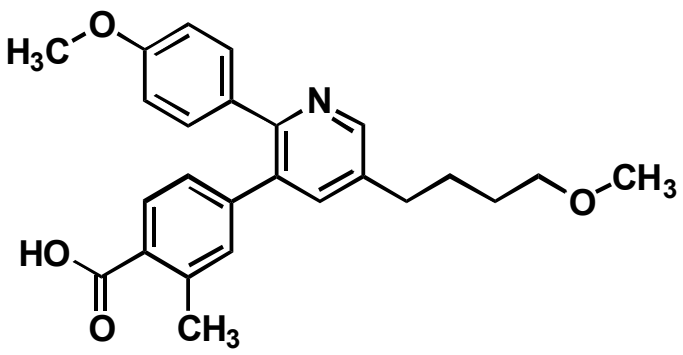
(Example 116).

16. A compound of the following formula or a pharmaceutically acceptable salt thereof:



(Example 118).

17. A compound of the following formula or a pharmaceutically acceptable salt thereof:



(Example 126).

18. A pharmaceutical composition comprising the compound according to any one of Claims 1 to 17 or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable carrier.

19. A GLUT9 inhibitor comprising the compound according to any one of Claims 1 to 17 or a pharmaceutically acceptable salt thereof.

20. An agent for the treatment or prophylaxis of a disease selected from the group consisting of hyperuricemia, gout and chronic kidney disease, which comprises the compound according to any one of Claims 1 to 17 or a pharmaceutically acceptable salt thereof.

21. A method for the inhibition of GLUT9 in a mammal in need of such inhibition, which comprises administering a pharmaceutically effective amount of the compound according to any one of Claims 1 to 17 or a pharmaceutically acceptable salt thereof to the mammal.

22. A method for the treatment or prophylaxis of a disease selected from the group consisting of hyperuricemia, gout and chronic kidney disease in a mammal in need of such treatment or prophylaxis, which comprises administering a pharmaceutically

effective amount of the compound according to any one of Claims 1 to 17 or a pharmaceutically acceptable salt thereof to the mammal.

23. Use of the compound according to any one of Claims 1 to 17 or a pharmaceutically acceptable salt thereof for the manufacture of a GLUT9 inhibitor.

24. Use of the compound according to any one of Claims 1 to 17 or a pharmaceutically acceptable salt thereof for the manufacture of an agent for the treatment or prophylaxis of a disease selected from the group consisting of hyperuricemia, gout and chronic kidney disease.

25. The compound according to any one of Claims 1 to 17 or a pharmaceutically acceptable salt thereof, for use in the inhibition of GLUT9.

26. The compound according to any one of Claims 1 to 17 or a pharmaceutically acceptable salt thereof, for use in the treatment or prophylaxis of a disease selected from the group consisting of hyperuricemia, gout and chronic kidney disease.