diseases and disorders including epilepsy, essential tremor, schizophrenia, Parkinson's disease, depression, anxiety, sleep disorder, sleep disturbance, mental illness, schizophrenia, cardiac arrhythmia, hypertension, pain, cancer, diabetes, overactive bladder, chronic kidney disease, sterility, and sexual dysfunction [Non-Patent Document 2, Non-Patent Document 3, Non-Patent Document 10, Non-Patent Document 11, Non-Patent Document 13, Non-Patent Document 14].

[0005] Treatment methods for such diseases involve many problems, and thus there is a demand for novel pharmaceutical products. Although some compounds having the T-type calcium channel inhibitory activity have been disclosed (for example, see Patent Documents 1 to 3), there is a demand for development of new medicinal agents.

Prior Art Documents

Patent Documents

[0006] Patent Document 1: International Publication WO 2009/146540

Patent Document 2: International Publication WO 2011/115813

Patent Document 3: International Publication WO 2011/035159

Non-Patent Documents

[0007] Non-Patent Document 1: Physiology of Neuron, Kyoto University Press, pp. 231-260 (2009)

Non-Patent Document 2: British Journal of Pharmacology, Vol. 163, pp. 484-495 (2011)

Non-Patent Document 3: Genes, Brain and Behavior, Vol. 6, pp. 425-431 (2007)

Non-Patent Document 4: Acta Pharmacologica Sinica, Vol. 27 (No. 12), pp. 1547-1552 (2006)

Non-Patent Document 5: The EMBO Journal, Vol. 24, pp. 315-324 (2005)

Non-Patent Document 6: Journal of Neurochemistry, Vol. 119 (No. 3), pp. 594-603 (2011)

Non-Patent Document 7: Journal of Neuroscience, Vol. ~~28~~ 27 (No. 12), pp. 3305-3316 (2007)

Non-Patent Document 8: Pain, Vol. 145 (No. 1-2), pp. 184-195 (2009)

Non-Patent Document 9: Diabetes, Vol. 58, pp. 2656-2665 (2009)

Non-Patent Document 10: The Journal of Pharmacology and Experimental Therapeutics, Vol. 335, No. 2, pp. 409-417 (2010)

Non-Patent Document 11: Journal of Assisted Reproduction and Genetics, Vol. 28, No. 1, pp. 23-30 (2011)

Non-Patent Document 12: ~~Pharmacological~~ Physiological Reviews, Vol. 83, pp. 117-161 (2003)

Non-Patent Document 13: Neurourology and Urodynamics, Vol. 26, pp. 870-878 (2007)

Non-Patent Document 14: BJU International, Vol. 99 (No. 2), pp. 436-441 (~~2007~~2006)

SUMMARY OF THE INVENTION

Problem to be Solved by the Invention

[0008] The present invention provides novel triazinone compounds which are T-type voltage-dependent calcium channel inhibitors. The present invention also provides pharmaceutical compositions containing the compounds of the present invention.

Means for Solving the Problem

[0009] As a result of intensive studies for developing inhibitors of a T-type voltage-dependent calcium channel, the inventors of the present invention have found that the compounds of the present invention have a high inhibitory activity on the T-type voltage-dependent calcium channel and have accomplished the present invention.

Specifically, the present invention has the following aspects:

[0010] (1)

The present invention provides: a compound of Formula (I):

halogen atoms, one or more hydroxy groups, one or more amino groups, one or more C_{1-6} alkyl groups, one or more C_{1-3} haloalkyl groups, one or more C_{1-6} alkoxy groups, one or more C_{1-3} haloalkoxy groups, one or more mono-C_{1-6} alkylamino groups, one or more di-C_{1-6} alkylamino groups, one or more mono-C_{1-6} alkylaminocarbonyl groups, one or more di-C_{1-6} alkylaminocarbonyl groups, one or more C_{1-6} alkylcarbonylamino groups, one or more C_{1-6} alkylthio groups, or one or more C_{1-6} alkylsulfonyl groups)),

the tautomer of the compound, the pharmaceutically acceptable salt thereof, or the solvate thereof.

(12)

The compound according to (11), wherein

D is a phenyl group or a 5 to 6-membered heteroaryl group (the phenyl group ~~or~~ and the 5 to 6-membered heteroaryl group is unsubstituted or substituted with one or more halogen atoms, one or more nitro groups, one or more C_{1-6} alkyl groups, one or more C_{1-6} haloalkyl groups, one or more C_{1-6} alkoxy groups, or one or more C_{1-6} haloalkoxy groups),

the tautomer of the compound, the pharmaceutically acceptable salt thereof, or the solvate thereof

(13)

The compound according to any one of (1) to (9), wherein

D is a phenyl group or a 5 to 6-membered heteroaryl group (the phenyl group ~~or~~ and the 5 to 6-membered heteroaryl group is substituted with one or more C_{1-6} alkylsulfonylamino groups or one or more C_{1-6} alkylsulfonyloxy groups (the C_{1-6} alkylsulfonylamino groups and the C_{1-6} alkylsulfonyloxy groups are unsubstituted or substituted with one or more halogen atoms, one or more nitro groups, one or more C_{1-6} alkoxy groups, or one or more C_{1-6} haloalkoxy groups) and is optionally substituted with one or more halogen atoms, one or more nitro groups, one or more C_{1-6} alkyl groups, one or more C_{1-6} haloalkyl groups, one or more C_{1-6} alkoxy groups, or one or more C_{1-6} haloalkoxy groups),

the tautomer of the compound, the pharmaceutically acceptable salt thereof, or the solvate

group, a formate group, and a formyl group,

the tautomer of the compound, the pharmaceutically acceptable salt thereof, or the solvate thereof.

(16)

The compound according to (15), wherein

A is a phenyl group or a 5 to 6-membered heteroaryl group (the phenyl group and the 5 to 6-membered heteroaryl group are unsubstituted or substituted with one or more substituents identically or differently selected from the substituent group V^3); and

the substituent group V^3 is a substituent group consisting of a hydroxy group, halogen atoms, a cyano group, a nitro group, C_{1-6} alkyl groups, C_{1-6} haloalkyl groups, C_{3-6} cycloalkyl groups, C_{1-6} alkoxy groups, and C_{1-6} haloalkoxy groups,

the tautomer of the compound, the pharmaceutically acceptable salt thereof, or the solvate thereof.

(17)

A T-type calcium channel inhibitor comprising the compound described in any one of (1) to (16), the tautomer of the compound, the pharmaceutically acceptable salt thereof, or the solvate thereof, as an active component.

(18)

A preventive agent, a therapeutic agent, and/or an improving agent for a disease treatable by a T-type calcium channel inhibitory action comprising the T-type calcium channel inhibitor as described in (17) as an active component.

(19)

A therapeutic agent for neuropathic pain comprising the T-type calcium channel inhibitor as described in (~~18~~17) as an active component.

(20)

A medicine comprising the compound described in any one of (1) to (~~19~~16), the tautomer of the compound, the pharmaceutically acceptable salt thereof, or the solvate thereof, as an active component.

potassium carbonate, and triethylamine may be efficient for a smooth reaction.

Among the typical production methods shown below, in ~~formulae~~ schemes (5) and (12), a reaction particularly with a Bronsted acid catalyst such as acetic acid, trifluoroacetic acid, hydrochloric acid, sulfuric acid, and p-toluenesulfonic acid or with a Lewis acid such as titanium tetrachloride, a trifluoroborane-diethyl ether complex, and scandium triflate may be efficient for a smooth reaction.

[0186] In the typical production methods shown below, each of reagents and raw material compounds can be appropriately used in an equimolar amount or an excess molar amount relative to one compound of raw material compounds.

[0187] In the typical production methods of the compound of the present invention shown below, general formulae of intermediates and a final product are shown in each step, but the general formulae of these intermediates and final product also generally includes derivatives protected with protective groups. A derivative protected with a protective group means a compound that can yield a target compound by hydrolysis, reduction, oxidation, dehydration, halogenation, alkylation, or a similar reaction, as necessary, and includes a compound protected with a protective group that is acceptable for organic synthetic chemistry, for example.

Protection and deprotection can be carried out with well-known protective groups through protection and deprotection reactions (see Protective Groups in Organic Synthesis, Fourth edition, by T.W. Greene, John Wiley & Sons Inc, 2006, for example).

Hydrolysis, reduction, oxidation, dehydration, and halogenation can be carried out by well-known transformation methods of functional groups (see Comprehensive Organic Transformations, Second Edition, by R.C. Larock, Wiley-VCH, 1999, for example).

[0188] (Symbol in typical production method)

In the typical production methods shown below, symbols in the drawings are as follows unless otherwise noted:

In formulae, R^1, L^1, L^2, L^3, A, B, and D are the same as in General Formula (I).

$R^{1'}$ is a leaving group such as halogen atoms, a methanesulfonyloxy group, and a p-toluenesulfonyloxy group.

[04740474] Reference Synthesis Example 252

2-[trans-3-(4-Fluorophenyl)cyclobutyl]isoindoline-1,3-dione

cis-3-(4-Fluorophenyl)cyclobutanol (166 mg, 1.00 mmol) was used to obtain the title compound (140 mg, yield 48%) by synthesis in a similar manner to Reference Synthesis Example 201.

[04750475] Reference Synthesis Example 253

trans-3-(4-Fluorophenyl)cyclobutanamine

2-[trans-3-(4-Fluorophenyl)cyclobutyl]isoindoline-1,3-dione (140 mg, 0.475 mmol) synthesized in Reference Synthesis Example 252 was used to obtain the title compound (59.2 mg, yield 75%) by synthesis in a similar manner to Reference Synthesis Example 223.

[04760476] Reference Synthesis Example 254

Methyl cis-1-(4-fluorophenyl)-3-hydroxycyclobutane-carboxylate

To a tetrahydrofuran solution (5.5 mL) of 2-(4-fluorophenyl)acetic acid (1.90 g, 12.3 mmol), 2 M isopropyl magnesium chloride-tetrahydrofuran solution (13.5 mL, 27.1 mmol) was added at room temperature and the resultant mixture was stirred at 40°C for 70 minutes. Thereafter, 2-(chloromethyl)oxirane (1.74 mL, 22.1 mmol) was added to the reaction solution and the resultant mixture was stirred at room temperature for 3 hours and 30 minutes. Further, 2 M isopropyl magnesium chloride - tetrahydrofuran solution (12.3 mmol, 24.6 mmol) was added and the resultant mixture was stirred for 1 day. After completion of the reaction, 1 M hydrochloric acid was added to the reaction solution to acidify the liquid and extraction from the resultant mixture with ethyl acetate was performed. The organic layer was concentrated under reduced pressure and methanol (30 mL) and concentrated sulfuric acid (2.0 mL) were added to the obtained residue, followed by stirring the resultant mixture under reflux by heating for 1 hour. After completion of the reaction, the reaction solution was concentrated under reduced pressure and ice water was

similar manner to Synthesis Example 1 to obtain the title compound (32.8 mg, yield: 43%).

[0001] Synthesis Example 497

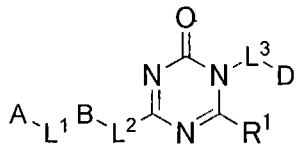
4-[5-Fluoro-4-(5-methylthiophen-3-yl)-5,6-dihydropyridin-1(2H)-yl]-6-methyl-1-{[2-(trifluoromethyl)thiazol-5-yl]methyl}-1,3,5-triazin-2(1H)-one

The synthesis was performed using (R)-4-[5-hydroxy-4-(5-methylthiophen-3-yl)-5,6-dihydropyridin-1(2H)-yl]-6-methyl-1-{[2-(trifluoromethyl)thiazol-5-yl]methyl}-1,3,5-triazin-2(1H)-one (15.8 mg, 0.0337 mmol) synthesized in Synthesis Example 493 in a similar manner to Reference Synthesis Example 75 to obtain the title compound (4.80 mg, yield: 30%) as a mixture of optical isomers.

[0002] The chemical structural formulae of the compounds synthesized in Reference Synthesis Examples and Synthesis Examples will be shown hereinafter. Tables ~~2~~ 3 to ~~6~~ 19 show the data of physical properties of the compounds synthesized in Reference Synthesis Examples, and Tables ~~7~~ 20 to ~~13~~ 42 show the data of physical properties of the compounds synthesized in Synthesis Examples. As described above, the sign Rf in the drawings means Reference Synthesis Example, and the sign Ex means Synthesis Example.

CLAIMS

1. A compound of Formula (I):



(I)

[wherein

R^1 is

a hydrogen atom,

~~a halogen atom,~~

a C_{1-6} alkyl group,

a C_{1-6} alkoxy group,

~~a C_{1-6} alkylthio group,~~

~~a mono-C_{1-6} alkylamino group,~~

~~a di-C_{1-6} alkylamino group~~

(the C_{1-6} alkyl group, ~~the C_{1-6} alkoxy group, the C_{1-6} alkylthio group, the mono-C_{1-6} alkylamino group, and the di-C_{1-6} alkylamino group are~~ is unsubstituted or substituted ~~with one or more~~ substituents identically or differently selected from the substituent group V by one or more halogen atoms, one or more acetoxy groups, one or more hydroxy groups, one or more dimethyl amino groups, or one or more morpholino groups), or

a ~~C_{3-11} cycloalkyl group~~

~~(the C_{3-11} cycloalkyl group is unsubstituted or substituted with one or more substituents identically or differently selected from the substituent group~~ dimethyl amino group ~~V^6~~);

each of L^1 and L^2 is independently

a single bond,

NR^2,

O,

S,

SO,

SO_2, or

cycloalkylthio groups, the 3 to 11-membered heterocyclyl groups, the C_{6-14} aryl groups, and the 5 to 10-membered heteroaryl groups are unsubstituted or substituted with one or more hydroxy groups, one or more halogen atoms, one or more cyano groups, one or more nitro groups, one or more amino groups, one or more carboxy groups, one or more carbamoyl groups, one or more sulfamoyl groups, one or more phosphono groups, one or more phosphinoyl groups, one or more sulfo groups, one or more sulfino groups, one or more tetrazolyl groups, one or more formyl groups, one or more C_{1-6} alkyl groups, one or more C_{1-3} haloalkyl groups, one or more C_{1-6} alkoxy groups, one or more C_{1-3} haloalkoxy groups, one or more mono-C_{1-6} alkylamino groups, one or more di-C_{1-6} alkylamino groups, one or more mono-C_{1-6} alkylaminocarbonyl groups, one or more di-C_{1-6} alkylaminocarbonyl groups, one or more C_{1-6} alkylcarbonylamino groups, one or more C_{1-6} alkylthio groups, or one or more C_{1-6} alkylsulfonyl groups); and

the substituent group V^2 is a substituent group consisting of substituents constituting the substituent group V^1, C_{1-6} alkyl groups, and C_{1-3} haloalkyl groups],

a tautomer of the compound, a pharmaceutically acceptable salt thereof, or a solvate thereof.

2. The compound according to claim 1, wherein

L^3 is a C_{1-3} alkylene group,

the tautomer of the compound, the pharmaceutically acceptable salt thereof, or the solvate thereof.

3. The compound according to claim 1 or 2, wherein

R^1 is a hydrogen atom or a C_{1-6} alkoxy group ~~(the C_{1-6} alkoxy group is unsubstituted or substituted with one or more substituents identically or differently selected from a substituent group V^2)~~;

the substituent group V^1 is a substituent group consisting of a hydroxy group, halogen atoms, a cyano group, a nitro group, C1 alkoxy groups, C_{1-6} alkylthio groups, C_{1-6} alkoxycarbonyl groups, C1 alkoxy groups, the C_{1-6} alkylthio groups, and the

C_{1-6}-alkoxycarbonyl groups are unsubstituted or substituted with one or more substituents identically or differently selected from the substituent group V^1), C_{3-6}-cycloalkoxy groups, mono-C_{3-6}-cycloalkylamino groups, di-C_{3-6}-cycloalkylamino groups, C_{3-6}-cycloalkylcarbonyl groups, C_{3-6}-cycloalkylsulfonyl groups, C_{3-6}-cycloalkylthio groups, C_{3-6}-cycloalkyl groups, 4- to 7-membered heterocyclyl groups, a phenyl group, and 5- to 6-membered heteroaryl groups (the C_{3-6}-cycloalkoxy groups, the mono-C_{3-6}-cycloalkylamino groups, the di-C_{3-6}-cycloalkylamino groups, the C_{3-6}-cycloalkylcarbonyl groups, the C_{3-6}-cycloalkylsulfonyl groups, the C_{3-6}-cycloalkylthio groups, the C_{3-6}-cycloalkyl groups, the 4- to 7-membered heterocyclyl groups, the phenyl group, and the 5- to 6-membered heteroaryl groups are unsubstituted or substituted with one or more substituents identically or differently selected from the substituent group V^2);

the substituent group V^+ is a substituent group consisting of substituents constituting the substituent group V^a, C_{1-6}-alkoxy groups, C_{1-3}-haloalkoxy groups, mono-C_{1-6}-alkylamino groups, di-C_{1-6}-alkylamino groups, mono-C_{1-6}-alkylaminocarbonyl groups, di-C_{1-6}-alkylaminocarbonyl groups, C_{1-6}-alkylcarbonylamino groups, C_{1-6}-alkylthio groups, C_{1-6}-alkylsulfonyl groups, C_{3-6}-cycloalkoxy groups, mono-C_{3-6}-cycloalkylamino groups, di-C_{3-6}-cycloalkylamino groups, C_{3-6}-cycloalkylcarbonyl groups, C_{3-6}-cycloalkylsulfonyl groups, C_{3-6}-cycloalkylthio groups, 3- to 11-membered heterocyclyl groups, C_{6-14}-aryl groups, and 5- to 10-membered heteroaryl groups (the C_{3-6}-cycloalkoxy groups, the mono-C_{3-6}-cycloalkylamino groups, the di-C_{3-6}-cycloalkylamino groups, the C_{3-6}-cycloalkylcarbonyl groups, the C_{3-6}-cycloalkylsulfonyl groups, the C_{3-6}-cycloalkylthio groups, the 3- to 11-membered heterocyclyl groups, the C_{6-14}-aryl groups, and the 5- to 10-membered heteroaryl groups are unsubstituted or substituted with one or more hydroxy groups, one or more halogen atoms, one or more cyano groups, one or more nitro groups, one or more amino groups, one or more carboxy groups, one or more carbamoyl groups, one or more sulfamoyl groups, one or more phosphono groups, one or more phosphinoyl groups, one or more sulfo groups, one or more sulfino groups, one or more tetrazolyl groups, one or more formyl groups, one or more C_{1-6}-alkyl groups, one or more C_{1-3}-haloalkyl groups, one or more C_{1-6}-alkoxy groups, one or more C_{1-3}-haloalkoxy

~~groups, one or more mono-C_{1-6}-alkylamino groups, one or more di-C_{1-6}-alkylamino groups, one or more mono-C_{1-6}-alkylaminocarbonyl groups, one or more di-C_{1-6}-alkylaminocarbonyl groups, one or more C_{1-6}-alkylcarbonylamino groups, one or more C_{1-6}-alkylthio groups, or one or more C_{1-6}-alkylsulfonyl groups);~~

~~the substituent group V^2 is a substituent group consisting of substituents constituting the substituent group V^1, C_{1-6}-alkyl groups, and C_{1-3}-haloalkyl groups; and~~

~~the substituent group V^a is a substituent group consisting of a hydroxy group, halogen atoms, a cyano group, a nitro group, an amino group, a carboxy group, a carbamoyl group, a sulfamoyl group, a phosphono group, a sulfo group, a tetrazolyl group, a formate group, and a formyl group,~~

the tautomer of the compound, the pharmaceutically acceptable salt thereof, or the solvate thereof.

4. The compound according to claim 3, wherein

R^1 is a hydrogen atom,

the tautomer of the compound, the pharmaceutically acceptable salt thereof, or the solvate thereof.

~~5. The compound according to claim 1 or 2, wherein~~

~~R^1 is a C_{1-6}-alkyl group (the C_{1-6}-alkyl group is unsubstituted or substituted with one or more substituents identically or differently selected from the substituent group V^9);~~

~~the substituent group V^9 is a substituent group consisting of a hydroxy group, halogen atoms, a cyano group, a nitro group, C_{1-6}-alkoxy groups, C_{1-6}-alkylthio groups, C_{1-6}-alkylcarbonyloxy groups, C_{1-6}-alkoxycarbonyl groups (the C_{1-6}-alkoxy groups, the C_{1-6}-alkylthio groups, the C_{1-6}-alkylcarbonyloxy groups, and the C_{1-6}-alkoxycarbonyl groups are unsubstituted or substituted with one or more substituents identically or differently selected from the substituent group V^1), C_{3-6}-cycloalkoxy groups, mono-C_{3-6}-cycloalkylamino groups, di-C_{3-6}-cycloalkylamino groups, C_{3-6}-cycloalkylcarbonyl groups, C_{3-6}-cycloalkylsulfonyl groups, C_{3-6}-cycloalkylthio groups, C_{3-6}-cycloalkyl groups, 4 to-~~

7-membered heterocyclyl groups, a phenyl group, and 5- to 6-membered heteroaryl groups (the C_{3-6} cycloalkoxy groups, the mono-C_{3-6} cycloalkylamino groups, the di-C_{3-6} cycloalkylamino groups, the C_{3-6} cycloalkylcarbonyl groups, the C_{3-6} cycloalkylsulfonyl groups, the C_{3-6} cycloalkylthio groups, the C_{3-6} cycloalkyl groups, the 4- to 7-membered heterocyclyl groups, the phenyl group, and the 5- to 6-membered heteroaryl groups are unsubstituted or substituted with one or more substituents identically or differently selected from the substituent group V^2);

the substituent group V^1 is a substituent group consisting of substituents constituting the substituent group V^a, C_{1-6} alkoxy groups, C_{1-3} haloalkoxy groups, mono-C_{1-6} alkylamino groups, di-C_{1-6} alkylamino groups, mono-C_{1-6} alkylaminocarbonyl groups, di-C_{1-6} alkylaminocarbonyl groups, C_{1-6} alkylcarbonylamino groups, C_{1-6} alkylthio groups, C_{1-6} alkylsulfonyl groups, C_{3-6} cycloalkoxy groups, mono-C_{3-6} cycloalkylamino groups, di-C_{3-6} cycloalkylamino groups, C_{3-6} cycloalkylcarbonyl groups, C_{3-6} cycloalkylsulfonyl groups, C_{3-6} cycloalkylthio groups, 3- to 11-membered heterocyclyl groups, C_{6-14} aryl groups, and 5- to 10-membered heteroaryl groups (the C_{3-6} cycloalkoxy groups, the mono-C_{3-6} cycloalkylamino groups, the di-C_{3-6} cycloalkylamino groups, the C_{3-6} cycloalkylcarbonyl groups, the C_{3-6} cycloalkylsulfonyl groups, the C_{3-6} cycloalkylthio groups, the 3- to 11-membered heterocyclyl groups, the C_{6-14} aryl groups, and the 5- to 10-membered heteroaryl groups are unsubstituted or substituted with one or more hydroxy groups, one or more halogen atoms, one or more cyano groups, one or more nitro groups, one or more amino groups, one or more carboxy groups, one or more carbamoyl groups, one or more sulfamoyl groups, one or more phosphono groups, one or more phosphinoyl groups, one or more sulfo groups, one or more sulfino groups, one or more tetrazolyl groups, one or more formyl groups, one or more C_{1-6} alkyl groups, one or more C_{1-3} haloalkyl groups, one or more C_{1-6} alkoxy groups, one or more C_{1-3} haloalkoxy groups, one or more mono-C_{1-6} alkylamino groups, one or more di-C_{1-6} alkylamino groups, one or more mono-C_{1-6} alkylaminocarbonyl groups, one or more di-C_{1-6} alkylaminocarbonyl groups, one or more C_{1-6} alkylcarbonylamino groups, one or more C_{1-6} alkylthio groups, or one or more C_{1-6} alkylsulfonyl groups);

the substituent group V^2 is a substituent group consisting of substituents constituting the substituent group V^1, C_{1-6} alkyl groups, and C_{1-3} haloalkyl groups; and

the substituent group V^n is a substituent group consisting of a hydroxy group, halogen atoms, a cyano group, a nitro group, an amino group, a carboxy group, a carbamoyl group, a sulfamoyl group, a phosphono group, a sulfo group, a tetrazolyl group, a formate group, and a formyl group,

the tautomer of the compound, the pharmaceutically acceptable salt thereof, or the solvate thereof.

65. The compound according to claim 51, wherein

R^1 is a C_{1-6} alkyl group (C_{1-6} alkyl group is unsubstituted or substituted with one or more halogen atoms),

the tautomer of the compound, the pharmaceutically acceptable salt thereof, or the solvate thereof.

76. The compound according to any one of claims 1 to 65, wherein

L^1 is a single bond, NR^{2a}, O, S, SO, SO_2, or a C_{1-6} alkylene group (a single methylene group of the C_{1-6} alkylene group is optionally replaced by O, S, SO_2, C=O, C=S, or NR^{3a});

L^2 is a single bond and B is a 3 to 11-membered heterocyclylene group or a 5 to 10-membered heteroarylene group (the 3 to 11-membered heterocyclylene group and the 5 to 10-membered heteroarylene group are unsubstituted or optionally substituted with one or more substituents identically or differently selected from the substituent group V^5), or

L^2 is NR^{2b}, O, S, SO, SO_2, or a C_{1-6} alkylene group (a single methylene group of the C_{1-6} alkylene group is optionally replaced by O, S, SO_2, C=O, C=S, or NR^{3b}) and B is a C_{3-11} cycloalkylene group, a C_{3-11} cycloalkenylene group, a 3 to 11-membered heterocyclylene group, or a 5 to 10-membered heteroarylene group (the C_{3-11} cycloalkylene group, the C_{3-11} cycloalkenylene group, the 3 to 11-membered

heterocyclylene group, and the 5 to 10-membered heteroarylene group are unsubstituted or optionally substituted with one or more substituents identically or differently selected from the substituent group V^5, and a single methylene group of the C_{3-11} cycloalkylene group and the C_{3-11} cycloalkenylene group is optionally replaced by a 1,1-C_{3-7} cycloalkylene group);

the substituent group V^5 is a substituent group consisting of a hydroxy group, halogen atoms, a cyano group, a nitro group, C_{1-6} alkyl groups, C_{1-6} alkoxy groups, C_{1-6} alkylthio groups, C_{1-6} alkoxycarbonyl groups (the C_{1-6} alkyl groups, the C_{1-6} alkoxy groups, the C_{1-6} alkylthio groups, and the C_{1-6} alkoxycarbonyl groups are unsubstituted or substituted with one or more substituents identically or differently selected from the substituent group V^1), C_{3-6} cycloalkoxy groups, mono-C_{3-6} cycloalkylamino groups, di-C_{3-6} cycloalkylamino groups, C_{3-6} cycloalkylcarbonyl groups, C_{3-6} cycloalkylsulfonyl groups, C_{3-6} cycloalkylthio groups, C_{3-6} cycloalkyl groups, 4 to 7-membered heterocyclyl groups, a phenyl group, and 5 to 6-membered heteroaryl groups (the C_{3-6} cycloalkoxy groups, the mono-C_{3-6} cycloalkylamino groups, the di-C_{3-6} cycloalkylamino groups, the C_{3-6} cycloalkylcarbonyl groups, the C_{3-6} cycloalkylsulfonyl groups, the C_{3-6} cycloalkylthio groups, the C_{3-6} cycloalkyl groups, the 4 to 7-membered heterocyclyl groups, the phenyl group, and the 5 to 6-membered heteroaryl groups are unsubstituted or substituted with one or more substituents identically or differently selected from the substituent group V^2);

the substituent group V^1 is a substituent group consisting of substituents constituting the substituent group V^a, C_{1-6} alkoxy groups, C_{1-3} haloalkoxy groups, mono-C_{1-6} alkylamino groups, di-C_{1-6} alkylamino groups, mono-C_{1-6} alkylaminocarbonyl groups, di-C_{1-6} alkylaminocarbonyl groups, C_{1-6} alkylcarbonylamino groups, C_{1-6} alkylthio groups, C_{1-6} alkylsulfonyl groups, C_{3-6} cycloalkoxy groups, mono-C_{3-6} cycloalkylamino groups, di-C_{3-6} cycloalkylamino groups, C_{3-6} cycloalkylcarbonyl groups, C_{3-6} cycloalkylsulfonyl groups, C_{3-6} cycloalkylthio groups, 3 to 11-membered heterocyclyl groups, C_{6-14} aryl groups, and 5 to 10-membered heteroaryl groups (the C_{3-6} cycloalkoxy groups, the mono-C_{3-6} cycloalkylamino groups, the di-C_{3-6} cycloalkylamino

groups, the C_{3-6} cycloalkylcarbonyl groups, the C_{3-6} cycloalkylsulfonyl groups, the C_{3-6} cycloalkylthio groups, the 3 to 11-membered heterocyclyl groups, the C_{6-14} aryl groups, and the 5 to 10-membered heteroaryl groups are unsubstituted or substituted with one or more hydroxy groups, one or more halogen atoms, one or more cyano groups, one or more nitro groups, one or more amino groups, one or more carboxy groups, one or more carbamoyl groups, one or more sulfamoyl groups, one or more phosphono groups, one or more phosphinoyl groups, one or more sulfo groups, one or more sulfino groups, one or more tetrazolyl groups, one or more formyl groups, one or more C_{1-6} alkyl groups, one or more C_{1-3} haloalkyl groups, one or more C_{1-6} alkoxy groups, one or more C_{1-3} haloalkoxy groups, one or more mono-C_{1-6} alkylamino groups, one or more di-C_{1-6} alkylamino groups, one or more mono-C_{1-6} alkylaminocarbonyl groups, one or more di-C_{1-6} alkylaminocarbonyl groups, one or more C_{1-6} alkylcarbonylamino groups, one or more C_{1-6} alkylthio groups, or one or more C_{1-6} alkylsulfonyl groups);

the substituent group V^2 is a substituent group consisting of substituents constituting the substituent group V^1, C_{1-6} alkyl groups, and C_{1-3} haloalkyl groups;

the substituent group V^a is a substituent group consisting of a hydroxy group, halogen atoms, a cyano group, a nitro group, an amino group, a carboxy group, a carbamoyl group, a sulfamoyl group, a phosphono group, a sulfo group, a tetrazolyl group, a formate group, and a formyl group; and

each of R^{2a}, R^{2b}, R^{3a}, and R^{3b} is independently a hydrogen atom, a C_{1-3} alkyl group, or a C_{1-3} haloalkyl group,

the tautomer of the compound, the pharmaceutically acceptable salt thereof, or the solvate thereof.

87. The compound according to claim 76, wherein

L^1 is a single bond;

L^2 is a single bond, and B is a 4 to 7-membered heterocyclylene group (the 4 to 7-membered heterocyclylene group is unsubstituted or optionally substituted with one or more substituents identically or differently selected from the substituent group V^3, and a

single methylene group of the 4 to 7-membered heterocyclylene group is optionally replaced by a 1,1-C_{3-7} cycloalkylene group), or

L^2 is NR^{2c}, O, or a C_{1-6} alkylene group (a single methylene group of the C_{1-6} alkylene group is optionally replaced by O or NR^{3c}), and B is a C_{3-6} cycloalkylene group, a C_{3-6} cycloalkenylene group, or a 4 to 7-membered heterocyclylene group (the C_{3-6} cycloalkylene group, the C_{3-6} cycloalkenylene group, and the 4 to 7-membered heterocyclylene group are unsubstituted or optionally substituted with one or more substituents identically or differently selected from the substituent group V^3, and a single methylene group of the C_{3-6} cycloalkylene group, the C_{3-6} cycloalkenylene group, and the 4 to 7-membered heterocyclylene group is optionally replaced by a 1,1-C_{3-7} cycloalkylene group);

the substituent group V^3 is a substituent group consisting of a hydroxy group, halogen atoms, a cyano group, a nitro group, C_{1-6} alkyl groups, C_{1-6} haloalkyl groups, C_{3-6} cycloalkyl groups, C_{1-6} alkoxy groups, and C_{1-6} haloalkoxy groups; and

each of R^{2c} and R^{3c} is independently a hydrogen atom, a C_{1-3} alkyl group, or a C_{1-3} haloalkyl group,

the tautomer of the compound, the pharmaceutically acceptable salt thereof, or the solvate thereof.

98. The compound according to any one of claims 1 to 65, wherein

L^1 is a single bond;

L^2 is a single bond, and B is a 4 to 7-membered heterocyclylene group (the 4 to 7-membered heterocyclylene group is substituted with one or more substituents selected from an amino group, mono-C_{1-6} alkylamino groups, di-C_{1-6} alkylamino groups, and C_{1-6} alkylsulfonylamino groups and is optionally substituted with one or more substituents identically or differently selected from the substituent group V^3, and a single methylene group of the 4 to 7-membered heterocyclylene group is optionally replaced by a 1,1-C_{3-7} cycloalkylene group), or

L^2 is NR^{2c}, O, or a C_{1-6} alkylene group (a single methylene group of the C_{1-6}

alkylene group is optionally replaced by O or NR^{3c}), and B is a C_{3-6} cycloalkylene group, a C_{3-6} cycloalkenylene group, or a 4 to 7-membered heterocyclylene group (the C_{3-6} cycloalkylene group, the C_{3-6} cycloalkenylene group, and the 4 to 7-membered heterocyclylene group are substituted with a substituent selected from one or more amino groups, one or more mono-C_{1-6} alkylamino groups, one or more di-C_{1-6} alkylamino groups, and one or more C_{1-6} alkylsulfonylamino groups and are optionally substituted with one or more substituents identically or differently selected from the substituent group V^3, and a single methylene group of the C_{3-6} cycloalkylene group, the C_{3-6} cycloalkenylene group, and the 4 to 7-membered heterocyclylene group is optionally replaced by a 1,1-C_{3-7} cycloalkylene group);

the substituent group V^3 is a substituent group consisting of a hydroxy group, halogen atoms, a cyano group, a nitro group, C_{1-6} alkyl groups, C_{1-6} haloalkyl groups, C_{3-6} cycloalkyl groups, C_{1-6} alkoxy groups, and C_{1-6} haloalkoxy groups; and

each of R^{2c} and R^{3c} is independently a hydrogen atom, a C_{1-3} alkyl group, or a C_{1-3} haloalkyl group,

the tautomer of the compound, the pharmaceutically acceptable salt thereof, or the solvate thereof.

~~109~~. The compound according to any one of claims 1 to ~~98~~, wherein

D is a 3 to 11-membered heterocyclyl group, a C_{6-14} aryl group, or a 5 to 10-membered heteroaryl group (the 3 to 11-membered heterocyclyl group, the C_{6-14} aryl group, and the 5 to 10-membered heteroaryl group are unsubstituted or substituted with one or more substituents identically or differently selected from the substituent group V^5);

the substituent group V^5 is a substituent group consisting of a hydroxy group, halogen atoms, a cyano group, a nitro group, C_{1-6} alkyl groups, C_{1-6} alkoxy groups, C_{1-6} alkylthio groups, C_{1-6} alkoxycarbonyl groups (the C_{1-6} alkyl groups, the C_{1-6} alkoxy groups, the C_{1-6} alkylthio groups, and the C_{1-6} alkoxycarbonyl groups are unsubstituted or substituted with one or more substituents identically or differently selected from the substituent group V^1), C_{3-6} cycloalkoxy groups, mono-C_{3-6} cycloalkylamino groups,

di-C_{3-6} cycloalkylamino groups, C_{3-6} cycloalkylcarbonyl groups, C_{3-6} cycloalkylsulfonyl groups, C_{3-6} cycloalkylthio groups, C_{3-6} cycloalkyl groups, 4 to 7-membered heterocyclyl groups, a phenyl group, and 5 to 6-membered heteroaryl groups (the C_{3-6} cycloalkoxy groups, the mono-C_{3-6} cycloalkylamino groups, the di-C_{3-6} cycloalkylamino groups, the C_{3-6} cycloalkylcarbonyl groups, the C_{3-6} cycloalkylsulfonyl groups, the C_{3-6} cycloalkylthio groups, the C_{3-6} cycloalkyl groups, the 4 to 7-membered heterocyclyl groups, the phenyl group, and the 5 to 6-membered heteroaryl groups are unsubstituted or substituted with one or more substituents identically or differently selected from the substituent group V^2);

the substituent group V^1 is a substituent group consisting of substituents constituting the substituent group V^a, C_{1-6} alkoxy groups, C_{1-3} haloalkoxy groups, mono-C_{1-6} alkylamino groups, di-C_{1-6} alkylamino groups, mono-C_{1-6} alkylaminocarbonyl groups, di-C_{1-6} alkylaminocarbonyl groups, C_{1-6} alkylcarbonylamino groups, C_{1-6} alkylthio groups, C_{1-6} alkylsulfonyl groups, C_{3-6} cycloalkoxy groups, mono-C_{3-6} cycloalkylamino groups, di-C_{3-6} cycloalkylamino groups, C_{3-6} cycloalkylcarbonyl groups, C_{3-6} cycloalkylsulfonyl groups, C_{3-6} cycloalkylthio groups, 3 to 11-membered heterocyclyl groups, C_{6-14} aryl groups, and 5 to 10-membered heteroaryl groups (the C_{3-6} cycloalkoxy groups, the mono-C_{3-6} cycloalkylamino groups, the di-C_{3-6} cycloalkylamino groups, the C_{3-6} cycloalkylcarbonyl groups, the C_{3-6} cycloalkylsulfonyl groups, the C_{3-6} cycloalkylthio groups, the 3 to 11-membered heterocyclyl groups, the C_{6-14} aryl groups, and the 5 to 10-membered heteroaryl groups are unsubstituted or substituted with one or more hydroxy groups, one or more halogen atoms, one or more cyano groups, one or more nitro groups, one or more amino groups, one or more carboxy groups, one or more carbamoyl groups, one or more sulfamoyl groups, one or more phosphono groups, one or more phosphinoyl groups, one or more sulfo groups, one or more sulfino groups, one or more tetrazolyl groups, one or more formyl groups, one or more C_{1-6} alkyl groups, one or more C_{1-3} haloalkyl groups, one or more C_{1-6} alkoxy groups, one or more C_{1-3} haloalkoxy groups, one or more mono-C_{1-6} alkylamino groups, one or more di-C_{1-6} alkylamino groups, one or more mono-C_{1-6} alkylaminocarbonyl groups, one or more di-C_{1-6}

alkylaminocarbonyl groups, one or more C_{1-6} alkylcarbonylamino groups, one or more C_{1-6} alkylthio groups, or one or more C_{1-6} alkylsulfonyl groups);

the substituent group V^2 is a substituent group consisting of substituents constituting the substituent group V^1, C_{1-6} alkyl groups, and C_{1-3} haloalkyl groups; and

the substituent group V^a is a substituent group consisting of a hydroxy group, halogen atoms, a cyano group, a nitro group, an amino group, a carboxy group, a carbamoyl group, a sulfamoyl group, a phosphono group, a sulfo group, a tetrazolyl group, a formate group, and a formyl group,

the tautomer of the compound, the pharmaceutically acceptable salt thereof, or the solvate thereof.

~~11~~10. The compound according to claim ~~10~~9, wherein

D is a 4 to 7-membered heterocyclyl group, a phenyl group, or a 5 to 6-membered heteroaryl group (the 4 to 7-membered heterocyclyl group, the phenyl group, and the 5 to 6-membered heteroaryl group are unsubstituted or substituted with one or more substituents identically or differently selected from a substituent group V^4);

the substituent group V^4 is a substituent group consisting of a hydroxy group, halogen atoms, a cyano group, a nitro group, C_{1-6} alkyl groups, C_{1-6} haloalkyl groups, C_{1-6} alkoxy groups, C_{1-6} haloalkoxy groups, C_{3-6} cycloalkyl groups, C_{3-6} cycloalkoxy groups, mono-C_{3-6} cycloalkylamino groups, di-C_{3-6} cycloalkylamino groups, and C_{3-6} cycloalkylthio groups (the C_{1-6} alkyl groups, the C_{1-6} alkoxy groups, the C_{3-6} cycloalkyl groups, the C_{3-6} cycloalkoxy groups, the mono-C_{3-6} cycloalkylamino groups, the di-C_{3-6} cycloalkylamino groups, and the C_{3-6} cycloalkylthio groups are unsubstituted or substituted with one or more hydroxy groups, one or more amino groups, one or more nitro groups, one or more cyano groups, one or more 3 to 11-membered heterocyclyl groups, one or more C_{6-14} aryl groups, or one or more 5 to 10-membered heteroaryl groups (the 3 to 11-membered heterocyclyl groups, the C_{6-14} aryl groups, and the 5 to 10-membered heteroaryl groups are unsubstituted or substituted with one or more carboxy groups, one or more carbamoyl groups, one or more sulfamoyl groups, one or

more phosphono groups, one or more sulfo groups, one or more tetrazolyl groups, one or more formyl groups, one or more nitro groups, one or more cyano groups, one or more halogen atoms, one or more hydroxy groups, one or more amino groups, one or more C_{1-6} alkyl groups, one or more C_{1-3} haloalkyl groups, one or more C_{1-6} alkoxy groups, one or more C_{1-3} haloalkoxy groups, one or more mono-C_{1-6} alkylamino groups, one or more di-C_{1-6} alkylamino groups, one or more mono-C_{1-6} alkylaminocarbonyl groups, one or more di-C_{1-6} alkylaminocarbonyl groups, one or more C_{1-6} alkylcarbonylamino groups, one or more C_{1-6} alkylthio groups, or one or more C_{1-6} alkylsulfonyl groups)),

the tautomer of the compound, the pharmaceutically acceptable salt thereof, or the solvate thereof.

~~12~~11. The compound according to claim ~~11~~10, wherein

D is a phenyl group or a 5 to 6-membered heteroaryl group (the phenyl group ~~or~~ and the 5 to 6-membered heteroaryl group is unsubstituted or substituted with one or more halogen atoms, one or more nitro groups, one or more C_{1-6} alkyl groups, one or more C_{1-6} haloalkyl groups, one or more C_{1-6} alkoxy groups, or one or more C_{1-6} haloalkoxy groups),

the tautomer of the compound, the pharmaceutically acceptable salt thereof, or the solvate thereof.

~~13~~12. The compound according to any one of claims 1 to ~~9~~8, wherein

D is a phenyl group or a 5 to 6-membered heteroaryl group (the phenyl group ~~or~~ and the 5 to 6-membered heteroaryl group is substituted with one or more C_{1-6} alkylsulfonylamino groups or one or more C_{1-6} alkylsulfonyloxy groups (the C_{1-6} alkylsulfonylamino groups and the C_{1-6} alkylsulfonyloxy groups are unsubstituted or substituted with one or more halogen atoms, one or more nitro groups, one or more C_{1-6} alkoxy groups, or one or more C_{1-6} haloalkoxy groups) and is optionally substituted with one or more halogen atoms, one or more nitro groups, one or more C_{1-6} alkyl groups, one or more C_{1-6} haloalkyl groups, one or more C_{1-6} alkoxy groups, or one or more C_{1-6}

haloalkoxy groups),

the tautomer of the compound, the pharmaceutically acceptable salt thereof, or the solvate thereof.

~~14~~13. The compound according to claim ~~13~~12, wherein

D is a 5 to 6-membered heteroaryl group (the 5 to 6-membered heteroaryl group is substituted with one or more C_{1-6} alkylsulfonyloxy groups (the C_{1-6} alkylsulfonyloxy groups are unsubstituted or substituted with one or more halogen atoms, one or more nitro groups, one or more C_{1-6} alkoxy groups, or one or more C_{1-6} haloalkoxy groups)),

the tautomer of the compound, the pharmaceutically acceptable salt thereof, or the solvate thereof.

~~15~~14. The compound according to any one of claims 1 to ~~14~~13, wherein

A is a 3 to 11-membered heterocyclyl group, a C_{6-14} aryl group, or a 5 to 10-membered heteroaryl group (the 3 to 11-membered heterocyclyl group, the C_{6-14} aryl group, and the 5 to 10-membered heteroaryl group are unsubstituted or substituted with one or more substituents identically or differently selected from the substituent group V^5); and

the substituent group V^5 is a substituent group consisting of a hydroxy group, halogen atoms, a cyano group, a nitro group, C_{1-6} alkyl groups, C_{1-6} alkoxy groups, C_{1-6} alkylthio groups, C_{1-6} alkoxycarbonyl groups (the C_{1-6} alkyl groups, the C_{1-6} alkoxy groups, the C_{1-6} alkylthio groups, and the C_{1-6} alkoxycarbonyl groups are unsubstituted or substituted with one or more substituents identically or differently selected from the substituent group V^1), C_{3-6} cycloalkoxy groups, mono-C_{3-6} cycloalkylamino groups, di-C_{3-6} cycloalkylamino groups, C_{3-6} cycloalkylcarbonyl groups, C_{3-6} cycloalkylsulfonyl groups, C_{3-6} cycloalkylthio groups, C_{3-6} cycloalkyl groups, 4 to 7-membered heterocyclyl groups, a phenyl group, and 5 to 6-membered heteroaryl groups (the C_{3-6} cycloalkoxy groups, the mono-C_{3-6} cycloalkylamino groups, the di-C_{3-6} cycloalkylamino groups, the C_{3-6} cycloalkylcarbonyl groups, the C_{3-6} cycloalkylsulfonyl groups, the C_{3-6}

cycloalkylthio groups, the C_{3-6} cycloalkyl groups, the 4 to 7-membered heterocyclyl groups, the phenyl group, and the 5 to 6-membered heteroaryl groups are unsubstituted or substituted with one or more substituents identically or differently selected from the substituent group V^2);

the substituent group V^1 is a substituent group consisting of substituents constituting the substituent group V^a, C_{1-6} alkoxy groups, C_{1-3} haloalkoxy groups, mono-C_{1-6} alkylamino groups, di-C_{1-6} alkylamino groups, mono-C_{1-6} alkylaminocarbonyl groups, di-C_{1-6} alkylaminocarbonyl groups, C_{1-6} alkylcarbonylamino groups, C_{1-6} alkylthio groups, C_{1-6} alkylsulfonyl groups, C_{3-6} cycloalkoxy groups, mono-C_{3-6} cycloalkylamino groups, di-C_{3-6} cycloalkylamino groups, C_{3-6} cycloalkylcarbonyl groups, C_{3-6} cycloalkylsulfonyl groups, C_{3-6} cycloalkylthio groups, 3 to 11-membered heterocyclyl groups, C_{6-14} aryl groups, and 5 to 10-membered heteroaryl groups (the C_{3-6} cycloalkoxy groups, the mono-C_{3-6} cycloalkylamino groups, the di-C_{3-6} cycloalkylamino groups, the C_{3-6} cycloalkylcarbonyl groups, the C_{3-6} cycloalkylsulfonyl groups, the C_{3-6} cycloalkylthio groups, the 3 to 11-membered heterocyclyl groups, the C_{6-14} aryl groups, and the 5 to 10-membered heteroaryl groups are unsubstituted or substituted with one or more hydroxy groups, one or more halogen atoms, one or more cyano groups, one or more nitro groups, one or more amino groups, one or more carboxy groups, one or more carbamoyl groups, one or more sulfamoyl groups, one or more phosphono groups, one or more phosphinoyl groups, one or more sulfo groups, one or more sulfino groups, one or more tetrazolyl groups, one or more formyl groups, one or more C_{1-6} alkyl groups, one or more C_{1-3} haloalkyl groups, one or more C_{1-6} alkoxy groups, one or more C_{1-3} haloalkoxy groups, one or more mono-C_{1-6} alkylamino groups, one or more di-C_{1-6} alkylamino groups, one or more mono-C_{1-6} alkylaminocarbonyl groups, one or more di-C_{1-6} alkylaminocarbonyl groups, one or more C_{1-6} alkylcarbonylamino groups, one or more C_{1-6} alkylthio groups, or one or more C_{1-6} alkylsulfonyl groups);

the substituent group V^2 is a substituent group consisting of substituents constituting the substituent group V^1, C_{1-6} alkyl groups, and C_{1-3} haloalkyl groups; and

the substituent group V^a is a substituent group consisting of a hydroxy group,

halogen atoms, a cyano group, a nitro group, an amino group, a carboxy group, a carbamoyl group, a sulfamoyl group, a phosphono group, a sulfo group, a tetrazolyl group, a formate group, and a formyl group,

the tautomer of the compound, the pharmaceutically acceptable salt thereof, or the solvate thereof.

16. The compound according to claim 15, wherein

A is a phenyl group or a 5 to 6-membered heteroaryl group (the phenyl group and the 5 to 6-membered heteroaryl group are unsubstituted or substituted with one or more substituents identically or differently selected from the substituent group V^3); and

the substituent group V^3 is a substituent group consisting of a hydroxy group, halogen atoms, a cyano group, a nitro group, C_{1-6} alkyl groups, C_{1-6} haloalkyl groups, C_{3-6} cycloalkyl groups, C_{1-6} alkoxy groups, and C_{1-6} haloalkoxy groups,

the tautomer of the compound, the pharmaceutically acceptable salt thereof, or the solvate thereof.

the solvate thereof.

~~17. A T-type calcium channel inhibitor comprising:~~

~~the compound, the tautomer of the compound, the pharmaceutically acceptable salt thereof, or the solvate thereof as claimed in any one of claims 1 to 16, as an active component.~~

~~18. A preventive agent, a therapeutic agent, and/or an improving agent for a disease treatable by a T-type calcium channel inhibitory action, the preventive agent, the therapeutic agent, and/or the improving agent comprising:~~

~~the T-type calcium channel inhibitor as claimed in claim 17 as an active component.~~

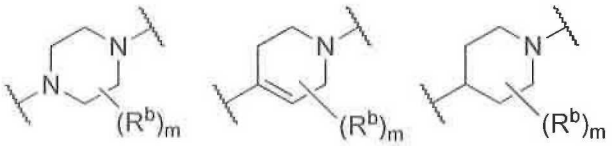
~~19. A therapeutic agent for neuropathic pain, the therapeutic agent comprising:~~

~~the T-type calcium channel inhibitor as claimed in claim 18 as an active~~

16. The compound according to Claim 7, wherein B has any of the structures of Formulae (II), m is 0 to 1, R^b is a substituent selected from the substituent group V^3, and

the substituent group V^3 is a substituent group consisting of a hydroxy group, halogen atoms, a cyano group, a nitro group, C_{1-6} alkyl groups, C_{1-6} haloalkyl groups, C_{3-6} cycloalkyl groups, C_{1-6} alkoxy groups, and C_{1-6} haloalkoxy groups,

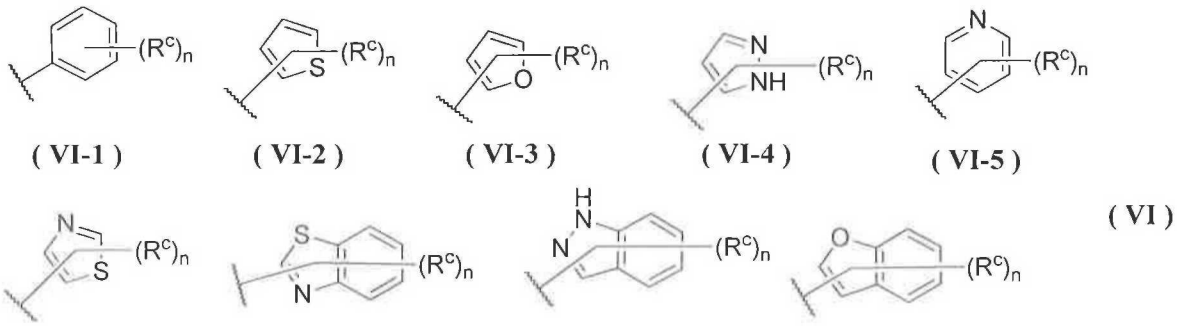
the tautomer of the compound, the pharmaceutically acceptable salt thereof, or the solvate thereof.



(II-1) (II-2) (II-3) (II)

17. The compound according to Claim 16, wherein D has any of the structures of Formulae (VI), n is 0 to 3, R^c is a substituent selected from the substituent group V^3, and R^c may be the same as or different from each other when n is 2 or 3, and the substituent group V^3 is a substituent group consisting of a hydroxy group, halogen atoms, a cyano group, a nitro group, C_{1-6} alkyl groups, C_{1-6} haloalkyl groups, C_{3-6} cycloalkyl groups, C_{1-6} alkoxy groups, and C_{1-6} haloalkoxy groups,

the tautomer of the compound, the pharmaceutically acceptable salt thereof, or the solvate thereof.

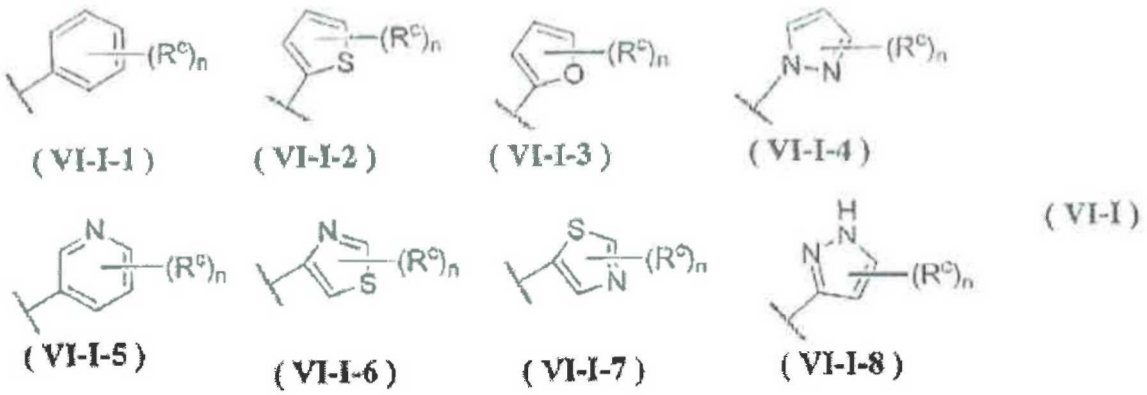


(VI-1) (VI-2) (VI-3) (VI-4) (VI-5)

(VI-6) (VI-7) (VI-8) (VI-9) (VI)

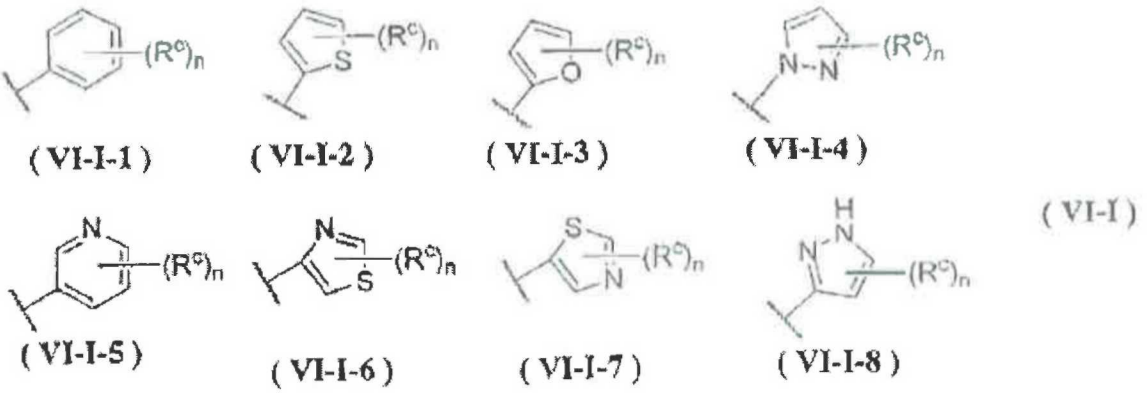
18. The compound according to Claim 11, wherein D has any of the structures of Formulae (VI), n is 0 to 3, R^c is a substituent selected from the substituent group constituting of halogen

atoms, a nitro group, C_{1-6} alkyl groups, C_{1-6} haloalkyl groups, C_{1-6} alkoxy groups, and C_{1-6} haloalkoxy groups, and R^c may be the same as or pharmaceutically acceptable salt thereof, or the solvate thereof.



(VI-I)

19. The compound according to Claim 17, wherein D has any of the structures of Formulate (VI), n is 0 to 3, R^c is a substituent selected from the substituent group constituting of halogen atoms, a nitro group, C_{1-6} alkyl groups, C_{1-6} haloalkyl groups, C_{1-6} alkoxy groups, and C_{1-6} haloalkoxy groups, and R^c may be the same as or different from each other when n is 2 or 3, the tautomer of the compound, the pharmaceutically acceptable salt thereof, or the solvate thereof.

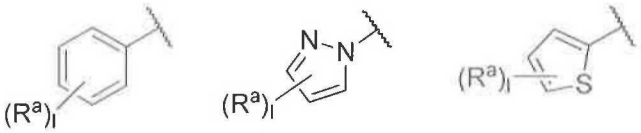


(VI-I)

20. The compound according to Claim 19, wherein A has any of the structures of Formulae (V), 1 is 0 to 2, R^a is a substituent selected from the substituent group V^3, and R^as may be the same as or different from each other when n is 2, and

the substituent group V^3 is a substituent group consisting of a hydroxy group, halogen atoms, a cyano group, a nitro group, C_{1-6} alkyl groups, C_{1-6} haloalkyl groups, C_{3-6} cycloalkyl groups, C_{1-6} alkoxy groups, and C_{1-6} haloalkoxy groups,

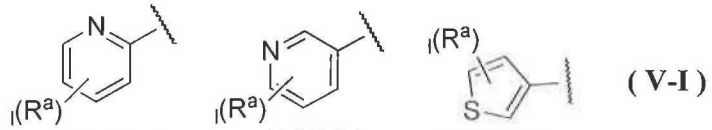
the tautomer of the compound, the pharmaceutically acceptable salt thereof, or the solvate thereof.



(V-1) (V-2) (V-3) (V)

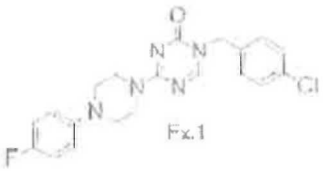
21. The compound according to claim 19, wherein A has any of the structures of Formulae (V-I), 1 is 0 to 2, R^a is a substituent selected from the substituent group V^3, and R^as may be the same as or different from each other when n is 2, and

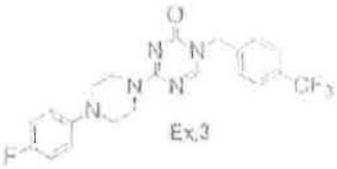
the substituent group V^3 is a substituent group consisting of a hydroxy group, halogen atoms, a cyano group, a nitro group, C_{1-6} alkyl groups, C_{1-6} haloalkyl groups, C_{3-6} cycloalkyl groups, C_{1-6} alkoxy groups, and C_{1-6} haloalkoxy groups, the tautomer of the compound, the pharmaceutically acceptable salt thereof, or the solvate thereof.

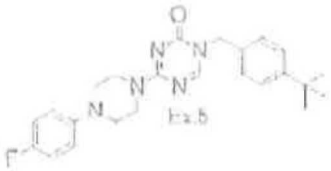


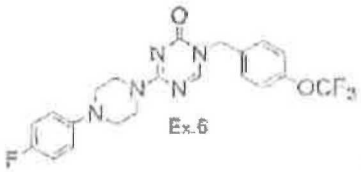
(V-I-1) (V-I-2) (V-I-3) (V-I)

22. The compound according to claim 1, which is represented by one of the formulae below, the tautomer of the compound, the pharmaceutically acceptable salt thereof, or the solvate thereof:


Ex.1


Ex.3


Ex.5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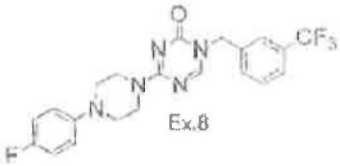
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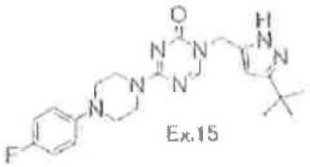
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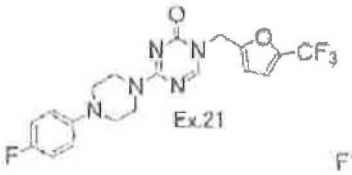
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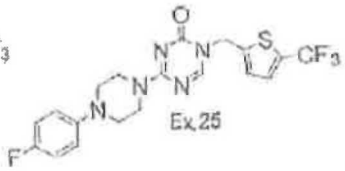
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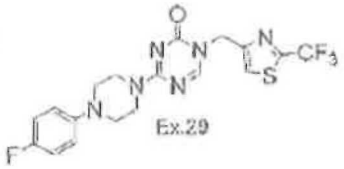
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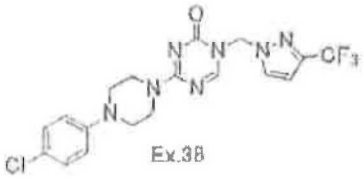
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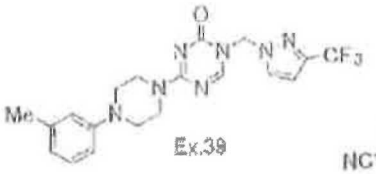
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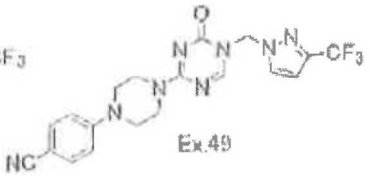
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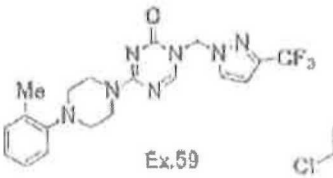
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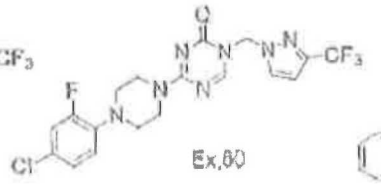
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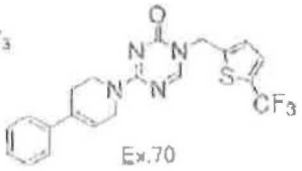
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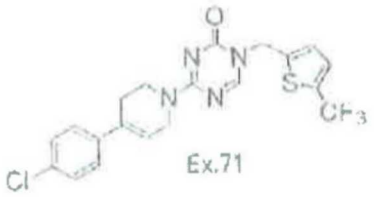

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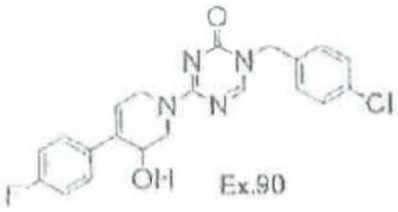

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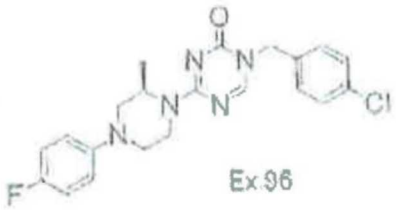

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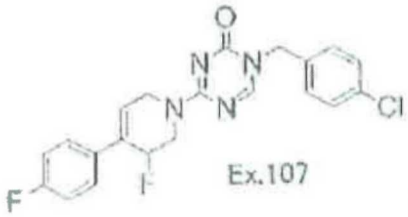

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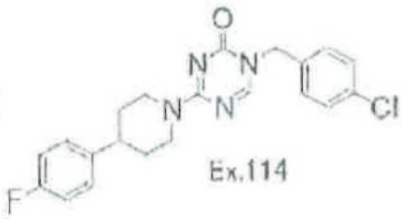

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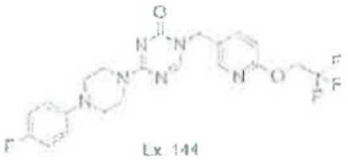

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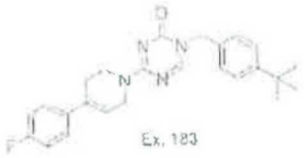

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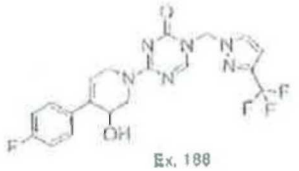

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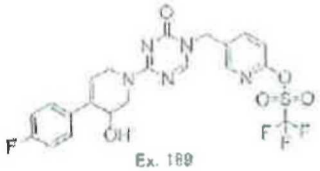

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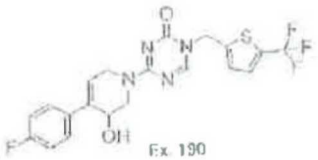

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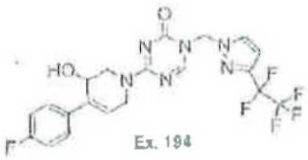

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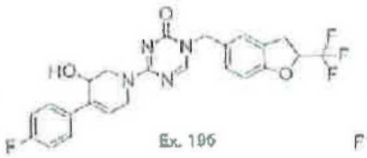

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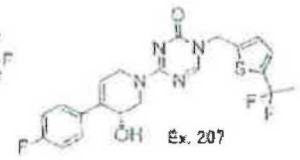

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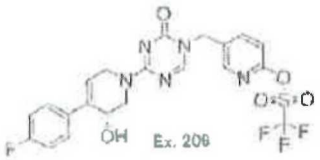

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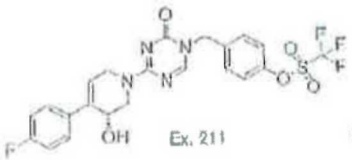

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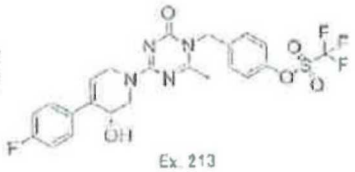

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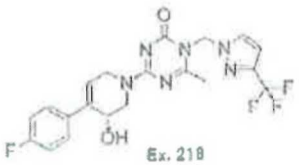

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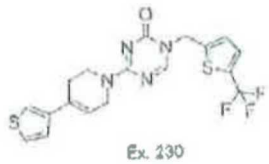

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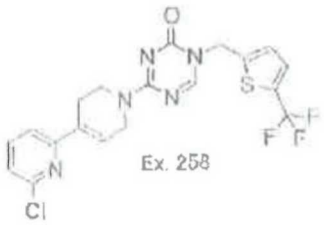
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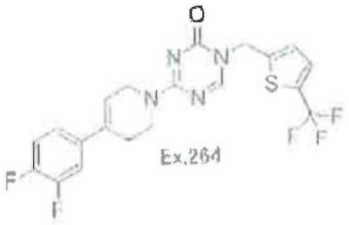
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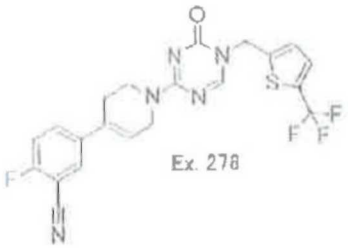
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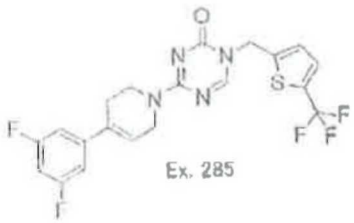
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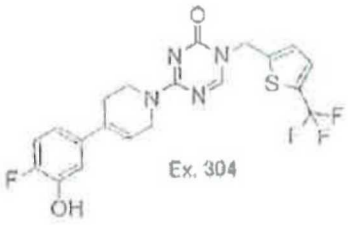
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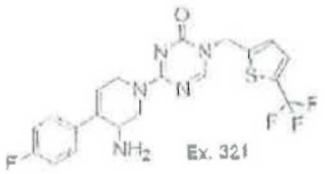
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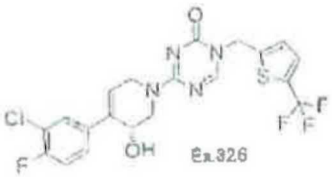
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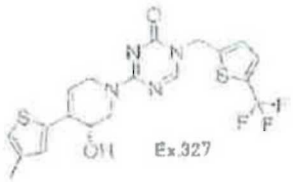
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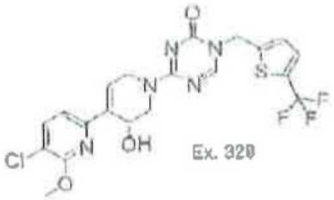
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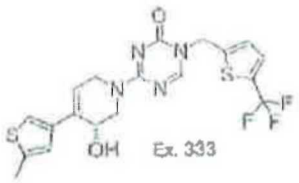
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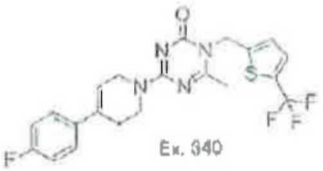
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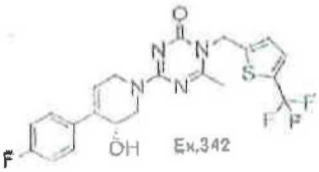
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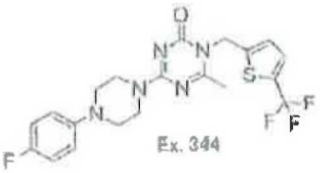
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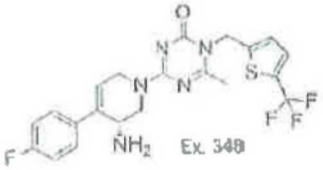
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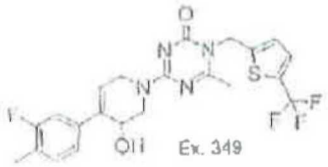
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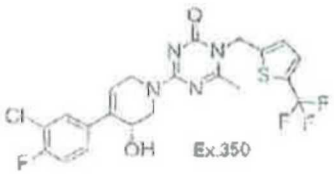
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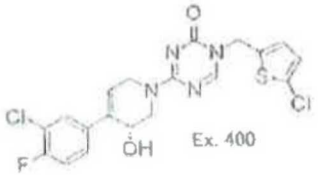
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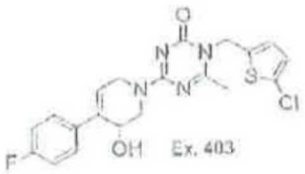
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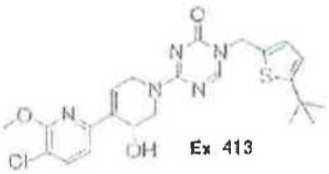
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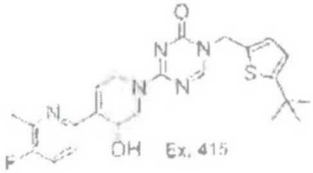
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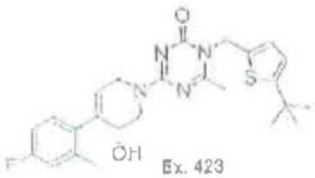
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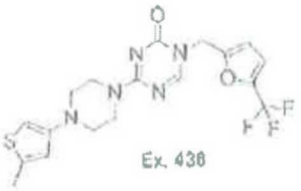

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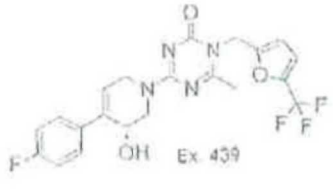
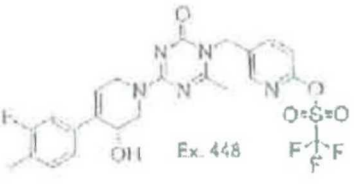


Ex. 439



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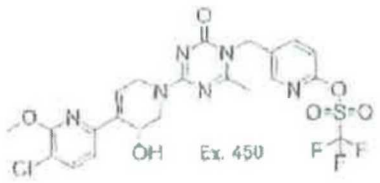

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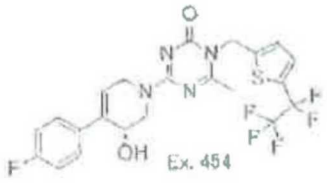

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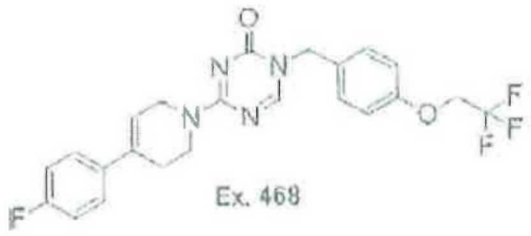

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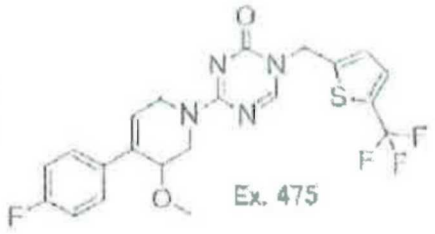

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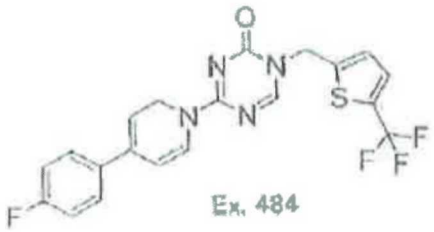
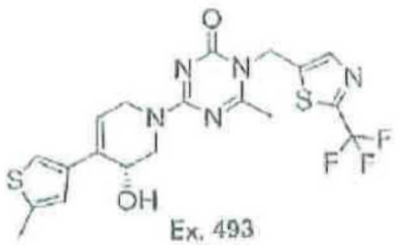
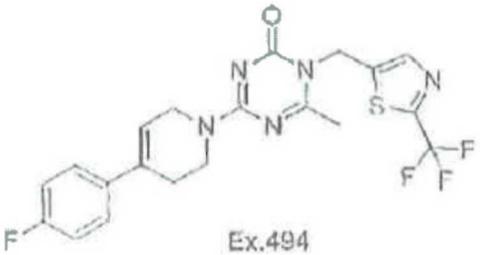


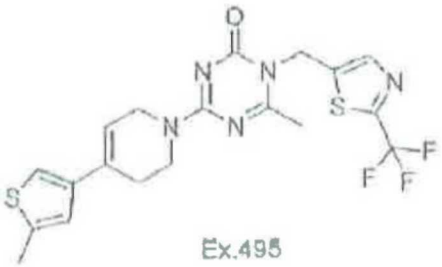
Ex. 484



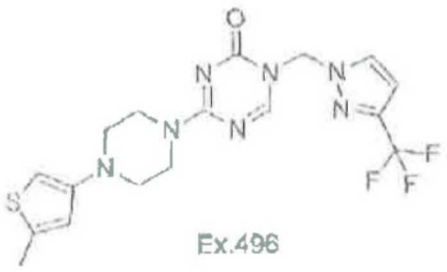
Ex. 493



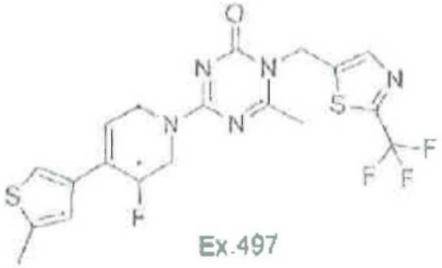
Ex.494



Ex.495



Ex.496



Ex.497

23. A T-type calcium channel inhibitor comprising:

the compound, the tautomer of the compound, the pharmaceutically acceptable salt thereof, or the solvate thereof as claimed in any one of claims 1 to 22, as an active component.

24. A preventive agent, a therapeutic agent, and/or an improving agent for a disease treatable by a T-type calcium channel inhibitory action, the preventive agent, the therapeutic agent, and/or the improving agent comprising:

the T-type calcium channel inhibitor as claimed in claim 23 as an active component.

25. A therapeutic agent for neuropathic pain, the therapeutic agent comprising:

the T-type calcium channel inhibitor as claimed in claim 23 as an active

component

~~20~~26. A medicine comprising:

the compound, the tautomer of the compound, the pharmaceutically acceptable salt thereof, or the solvate thereof as claimed in any one of claims 1 to ~~19~~22, as an active component