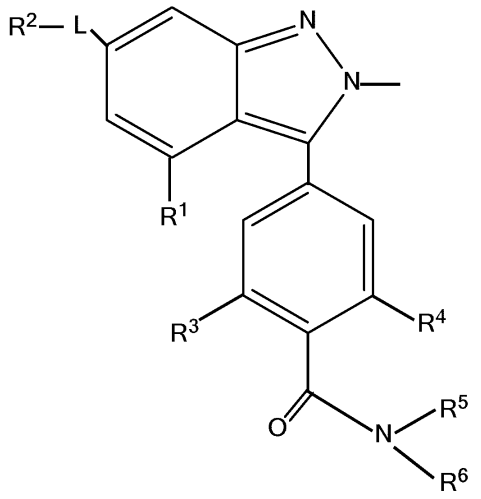
CLAIMS

1. A compound represented by formula (I) below or a pharmacologically acceptable salt thereof:



(I)

wherein

R^1 is a cyano group, a C_{1-4} alkyl group optionally substituted with one to three halogen atoms, or a C_{1-4} alkoxy group optionally substituted with one to three substituents independently selected from R^{1a},

wherein R^{1a} is a halogen atom; a 5- or 6-membered monocyclic aromatic heterocyclic group optionally substituted with one to three substituents independently selected from the group consisting of cyano groups, halogen atoms, and C_{1-4} alkyl groups; a 4-membered monocyclic aliphatic heterocyclic group; a hydroxyl group; a C_{3-4} cycloalkyl group; and a phenyl group,

L is a single bond, a C_{1-4} alkylene group, or a C_{2-4} alkenylene group,

R^2 is a 5-membered monocyclic aromatic heterocyclic group optionally substituted with R^{2a},

wherein R^{2a} is a C_{1-5} alkyl group optionally substituted with one to four substituents independently selected from R^{2b}, or a 5-membered monocyclic aliphatic heterocyclic group,

wherein R^{2b} is a hydroxyl group; a C_{3-4} cycloalkyl group optionally substituted with a hydroxyl group; a halogen atom; a C_{1-4} alkoxy group; a 4- to 6-membered monocyclic aliphatic heterocyclic group optionally substituted with one to three substituents independently selected from the group consisting of halogen atoms and oxo groups; an oxo group; an amino group optionally substituted with one or two C_{1-4} alkyl groups; a phenyl group; a 5-membered monocyclic aromatic heterocyclic group; and a

C_{1-4} alkylsulfonyl group,

R^3 is a hydrogen atom or a C_{1-4} alkoxy group optionally substituted with one to three halogen atoms,

R^4 is a C_{1-4} alkoxy group optionally substituted with one to three halogen atoms,

R^5 is a hydrogen atom,

R^6 is a hydrogen atom; a C_{1-4} alkyl group substituted with a halocyclopropyl group; or a cyclopropyl group substituted with one or two halogen atoms, or

R^5 and R^6, taken together with the nitrogen atom to which they are bonded, form an azetidine ring wherein the azetidine ring is substituted with one or two substituents independently selected from the group consisting of C_{1-4} alkyl groups optionally substituted with one to three halogen atoms; hydroxyl groups; C_{1-4} alkoxy groups optionally substituted with one or two halogen atoms; cyano groups; and amino groups, or

R^4 and R^6, taken together with the benzene ring to which R^4 is bonded, form a tetrahydroisoquinolin-1-one ring wherein the ring is substituted with one or two C_{1-4} alkyl groups.

2. The compound or the pharmacologically acceptable salt thereof according to claim 1, wherein

R^1 is a cyano group, a C_{1-4} alkyl group optionally substituted with one to three halogen atoms, or a C_{1-4} alkoxy group optionally substituted with one to three halogen atoms,

L is a single bond,

R^2 is a pyrazolyl group optionally substituted with a C_{1-4} alkyl group optionally substituted with a substituent $R^{2b'}$,

wherein the substituent $R^{2b'}$ is independently selected from the group consisting of a hydroxyl group, one to three halogen atoms, a C_{1-4} alkoxy group, and a hydroxyl-substituted cyclobutyl group,

R^3 is a C_{1-4} alkoxy group optionally substituted with one to three halogen atoms,

R^4 is a C_{1-4} alkoxy group optionally substituted with one to three halogen atoms,

R^5 is a hydrogen atom,

R^6 is a hydrogen atom; a C_{1-4} alkyl group substituted with a halocyclopropyl group; or a cyclopropyl group substituted with one or two halogen atoms, or

R^4 and R^6, taken together with the benzene ring to which R^4 is bonded, form a tetrahydroisoquinolin-1-one ring wherein the ring is substituted with one or two C_{1-4} alkyl groups at the 4-position of the ring.

3. The compound or the pharmacologically acceptable salt thereof according to claim 2, wherein

R^1 is a cyano group, a C_{1-2} alkyl group optionally substituted with one to three fluorine atoms, or a C_{1-2} alkoxy group optionally substituted with one to three fluorine atoms,

L is a single bond,

R^2 is a pyrazolyl group optionally substituted with a C_{1-3} alkyl group optionally substituted with a substituent $R^{2b"}$,

wherein the substituent $R^{2b"}$ is independently selected from the group consisting of a hydroxyl group, one to three fluorine atoms, a methoxy group, and a hydroxyl-substituted cyclobutyl group,

R^3 is a methoxy group optionally substituted with one to three fluorine atoms,

R^4 is a methoxy group optionally substituted with one to three fluorine atoms,

R^5 is a hydrogen atom,

R^6 is a hydrogen atom; a fluorocyclopropyl-substituted methyl group; or a cyclopropyl group substituted with one or two fluorine atoms, or

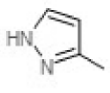
R^4 and R^6, taken together with the benzene ring to which R^4 is bonded, form a tetrahydroisoquinolin-1-one ring wherein the ring is substituted with one or two methyl groups at the 4-position of the ring.

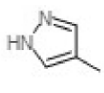
4. The compound or the pharmacologically acceptable salt thereof according to any one of claims 1 to 3, wherein

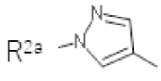
R^1 is a cyano group, $-CHF_2$, $-OCHF_2$, or $-OC_2H_5$.

5. The compound or the pharmacologically acceptable salt thereof according to any one of claims 1 to 4, wherein

R^2-L- is:



, 

, or 

,

wherein R^{2a} is $-CH_3$, $-CHF_2$, $-CH_2CH_3$, $-CH_2CF_3$, $-CH_2CH_2CH_3$, $-CH_2CH_2OCH_3$, $-CH_2CH(CH_3)OH$, or a 3-hydroxycyclobutylmethyl group.

6. The compound or the pharmacologically acceptable salt thereof according to any one of claims 1 to 5, wherein

R^3 is $-OCH_3$ or $-OCHF_2$.

7. The compound or the pharmacologically acceptable salt thereof according to any one of claims 1 to 6, wherein

R^4 is $-OCH_3$ or $-OCHF_2$,

R^5 is a hydrogen atom,

R^6 is a hydrogen atom,



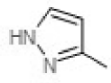
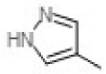
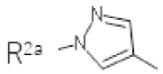

, or , or

R^4 and R^6, taken together with the benzene ring to which R^4 is bonded, form a tetrahydroisoquinolin-1-one ring wherein the ring is substituted with one $-CH_3$ at the 4-position of the ring.

8. The compound or the pharmacologically acceptable salt thereof according to claim 3, wherein

R^1 is a cyano group, $-CHF_2$, $-OCHF_2$, or $-OC_2H_5$,

R^2-L- is:

, , or ,

wherein R^{2a} is $-CH_3$, $-CHF_2$, $-CH_2CH_3$, $-CH_2CF_3$, $-CH_2CH_2CH_3$, $-CH_2CH_2OCH_3$, $-CH_2CH(CH_3)OH$, or a 3-hydroxycyclobutylmethyl group,

R^3 is $-OCH_3$ or $-OCHF_2$,

R^4 is $-OCH_3$ or $-OCHF_2$,

R^5 is a hydrogen atom,

R^6 is a hydrogen atom,

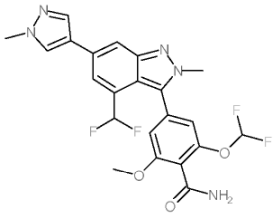
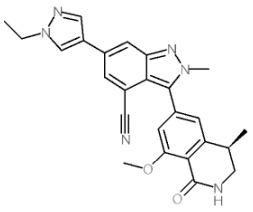


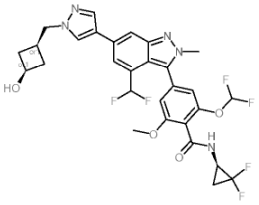
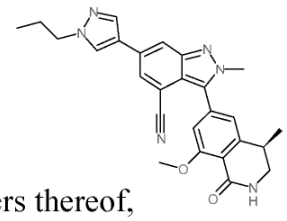

, or , or

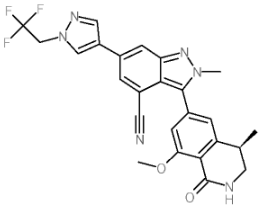
R^4 and R^6, taken together with the benzene ring to which R^4 is bonded, form a

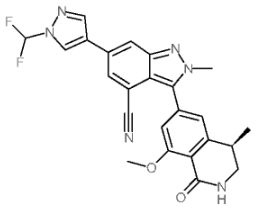
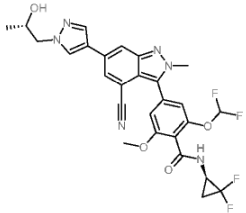
tetrahydroisoquinolin-1-one ring wherein the ring is substituted with one -CH_3 at the 4-position of the ring.

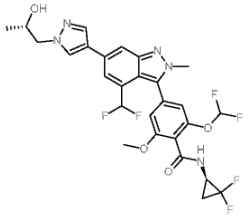
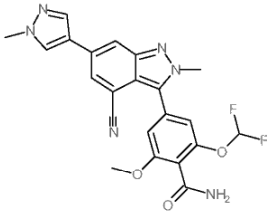
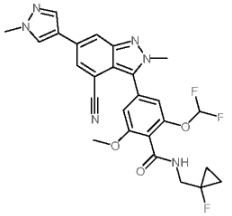
9. A compound selected from the group consisting of compounds illustrated below, or a pharmacologically acceptable salt thereof:

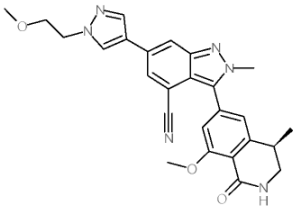
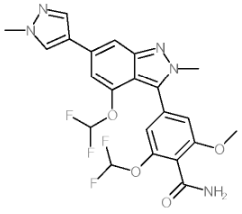

,

or an enantiomer thereof,

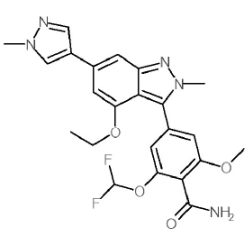
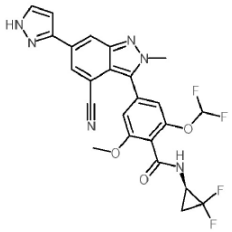
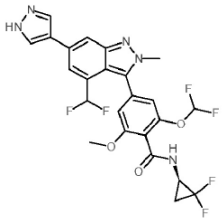
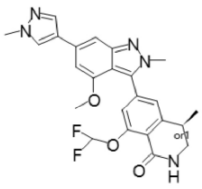

and a mixture of stereoisomers thereof,

or


an enantiomer thereof, or an enantiomer thereof,

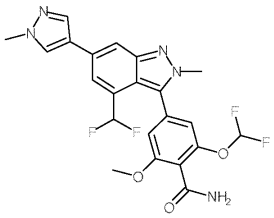
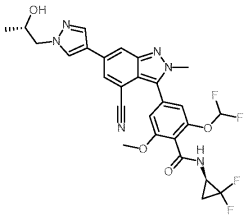
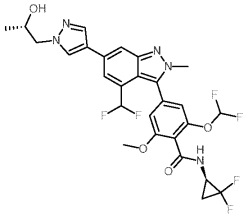

or an enantiomer thereof,

,

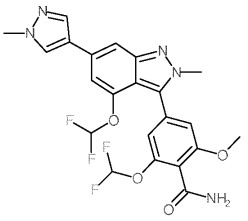
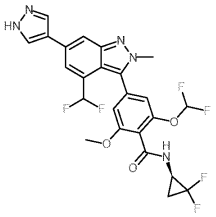
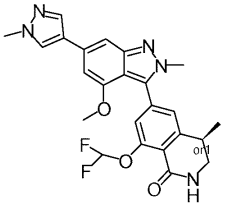

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,


or an enantiomer thereof,

,

, , , and .

10. A compound selected from the group consisting of compounds illustrated below, or a pharmacologically acceptable salt thereof:

, , ,

, , and .

11. A pharmaceutical composition comprising the compound or the pharmacologically acceptable salt thereof described in any one of claims 1 to 10 as an active ingredient.

12 The pharmaceutical composition according to claim 11, for use in the prevention or treatment of a disease and/or an accompanying symptom that can be improved by inhibiting salt-inducible kinases (SIK) or in the improvement of a prognosis of such a disease and/or an accompanying symptom.

13. The pharmaceutical composition according to claim 11, which is a preventive or therapeutic agent for a disease selected from inflammatory diseases, autoinflammatory diseases, autoimmune diseases, proliferative diseases, fibrotic diseases, transplant rejections, diseases involving cartilage turnover disorders, congenital cartilage malformations, diseases involving bone turnover disorders, diseases associated with hypersecretion of TNF-α, interferon, IL-6, IL-12, and/or IL-23,

respiratory diseases, endocrine and/or metabolic diseases, cardiovascular diseases, skin diseases, and abnormal angiogenesis-related diseases.

14. The pharmaceutical composition according to claim 11, which is a preventive or therapeutic agent for a disease selected from rheumatoid arthritis, arthritis deformans, psoriatic arthritis, chronic inflammatory demyelinating polyneuropathy, ulcerative colitis, Crohn's disease, autoimmune hepatitis, primary biliary cholangitis, primary sclerosing cholangitis, non-alcoholic fatty liver disease, non-alcoholic steatohepatitis, type 1 diabetes mellitus, type 2 diabetes mellitus, pancreatitis, systemic lupus erythematosus, cutaneous lupus erythematosus, central nervous system lupus, lupus nephritis, antiphospholipid antibody syndrome, chronic kidney disease, acute kidney disease, sarcoidosis, systemic scleroderma, localized scleroderma, Sjogren's syndrome, ANCA-associated vasculitis, immune complex small vessel vasculitis, polyarteritis nodosa, Kawasaki disease, Takayasu arteritis, giant cell arthritis, idiopathic inflammatory muscle disease (polymyositis, dermatomyositis, inclusion body myositis), IgG4-related diseases, juvenile Still's disease, pelvic inflammatory disease, psoriasis, pustular psoriasis, atopic dermatitis, asthma, allergic rhinitis, relapsing polychondritis, mixed connective tissue disease, graft-versus-host disease, idiopathic pulmonary fibrosis, idiopathic interstitial pneumonia, chronic obstructive pulmonary disease, myelofibrosis, multiple sclerosis, cerebral infarction, ischemic stroke, Alzheimer's disease, Parkinson's disease, depression, developmental epilepsy, Meniere's disease, narcolepsy, macrophage activation syndrome, sepsis, pulmonary hypertension, hyperlipidemia, Behcet's disease, uveitis, osteoporosis, bone fracture, osteosarcoma, cardiac insufficiency, hypertrophic myocardiopathy, atherosclerosis, female gestosis, ovarian cancer, breast cancer, prostate cancer, malignant lymphoma, leukemia, multiple myeloma, lung cancer, granuloma annulare, esophageal cancer, colorectal cancer, pancreatic cancer, gastric cancer, hepatocellular cancer, melanoma, and secondary hemophagocytic lymphohistiocytosis.

15. The pharmaceutical composition according to claim 11, which is a preventive or therapeutic agent for a disease selected from rheumatoid arthritis, arthritis deformans, psoriatic arthritis, ulcerative colitis, primary biliary cholangitis, primary sclerosing cholangitis, pancreatitis, systemic lupus erythematosus, lupus nephritis, systemic scleroderma, Sjogren's syndrome, psoriasis, pustular psoriasis, Behcet's disease, ovarian cancer, and acute myeloid leukemia.

16. The pharmaceutical composition according to claim 11, which is a preventive or therapeutic agent for a disease selected from rheumatoid arthritis, arthritis deformans, psoriatic arthritis, ulcerative colitis, pancreatitis, systemic lupus erythematosus, lupus nephritis, systemic scleroderma, Sjogren's syndrome, pustular psoriasis, and Behcet's disease.

17. The compound or the pharmacologically acceptable salt thereof according to any one of claims 1 to 10, for use in the prevention or treatment of a disease and/or an accompanying symptom that can be improved by inhibiting salt-inducible kinases (SIK) or in the improvement of a prognosis of such a disease and/or an accompanying symptom.

18. The compound or the pharmacologically acceptable salt thereof according to any one of claims 1 to 10, for use in the prevention or treatment of a disease selected from inflammatory diseases, autoinflammatory diseases, autoimmune diseases, proliferative diseases, fibrotic diseases, transplant rejections, diseases involving cartilage turnover disorders, congenital cartilage malformations, diseases involving bone turnover disorders, diseases associated with hypersecretion of TNF-α, interferon, IL-6, IL-12, and/or IL-23, respiratory diseases, endocrine and/or metabolic diseases, cardiovascular diseases, skin diseases, and abnormal angiogenesis-related diseases.

19. The compound or the pharmacologically acceptable salt thereof according to any one of claims 1 to 10, for use in the prevention or treatment of a disease selected from rheumatoid arthritis, arthritis deformans, psoriatic arthritis, chronic inflammatory demyelinating polyneuropathy, ulcerative colitis, Crohn's disease, autoimmune hepatitis, primary biliary cholangitis, primary sclerosing cholangitis, non-alcoholic fatty liver disease, non-alcoholic steatohepatitis, type 1 diabetes mellitus, type 2 diabetes mellitus, pancreatitis, systemic lupus erythematosus, cutaneous lupus erythematosus, central nervous system lupus, lupus nephritis, antiphospholipid antibody syndrome, chronic kidney disease, acute kidney disease, sarcoidosis, systemic scleroderma, localized scleroderma, Sjogren's syndrome, ANCA-associated vasculitis, immune complex small vessel vasculitis, polyarteritis nodosa, Kawasaki disease, Takayasu arteritis, giant cell arthritis, idiopathic inflammatory muscle disease (polymyositis, dermatomyositis, inclusion body myositis), IgG4-related diseases, juvenile Still's disease, pelvic inflammatory disease, psoriasis, pustular psoriasis, atopic dermatitis, asthma, allergic rhinitis, relapsing polychondritis, mixed connective tissue disease,

graft-versus-host disease, idiopathic pulmonary fibrosis, idiopathic interstitial pneumonia, chronic obstructive pulmonary disease, myelofibrosis, multiple sclerosis, cerebral infarction, ischemic stroke, Alzheimer's disease, Parkinson's disease, depression, developmental epilepsy, Meniere's disease, narcolepsy, macrophage activation syndrome, sepsis, pulmonary hypertension, hyperlipidemia, Behcet's disease, uveitis, osteoporosis, bone fracture, osteosarcoma, cardiac insufficiency, hypertrophic myocardiopathy, atherosclerosis, female gestosis, ovarian cancer, breast cancer, prostate cancer, malignant lymphoma, leukemia, multiple myeloma, lung cancer, granuloma annulare, esophageal cancer, colorectal cancer, pancreatic cancer, gastric cancer, hepatocellular cancer, melanoma, and secondary hemophagocytic lymphohistiocytosis.

20. The compound or the pharmacologically acceptable salt thereof according to any one of claims 1 to 10, for use in the prevention or treatment of a disease selected from rheumatoid arthritis, arthritis deformans, psoriatic arthritis, ulcerative colitis, primary biliary cholangitis, primary sclerosing cholangitis, pancreatitis, systemic lupus erythematosus, lupus nephritis, systemic scleroderma, Sjogren's syndrome, psoriasis, pustular psoriasis, Behcet's disease, ovarian cancer, and acute myeloid leukemia.

21. The compound or the pharmacologically acceptable salt thereof according to any one of claims 1 to 10, for use in the prevention or treatment of a disease selected from rheumatoid arthritis, arthritis deformans, psoriatic arthritis, ulcerative colitis, pancreatitis, systemic lupus erythematosus, lupus nephritis, systemic scleroderma, Sjogren's syndrome, pustular psoriasis, and Behcet's disease.

22. Use of a compound or the pharmacologically acceptable salt thereof as described in any one of claims 1 to 10, in the manufacture of a medicament for preventing or treating a disease and/or an accompanying symptom that can be improved by inhibiting salt-inducible kinases (SIK).

23. Use of a compound or the pharmacologically acceptable salt thereof as described in any one of claims 1 to 10, in the manufacture of a medicament for preventing or treating a disease selected from inflammatory diseases, autoinflammatory diseases, autoimmune diseases, proliferative diseases, fibrotic diseases, transplant rejections, diseases involving cartilage turnover disorders, congenital cartilage malformations, diseases involving bone turnover disorders, diseases associated with hypersecretion of TNF-α, interferon, IL-6, IL-12, and/or IL-23, respiratory diseases,

endocrine and/or metabolic diseases, cardiovascular diseases, skin diseases, and abnormal angiogenesis-related diseases.

24. Use of a compound or the pharmacologically acceptable salt thereof as described in any one of claims 1 to 10 in the manufacture of a medicament for preventing or treating a disease selected from rheumatoid arthritis, arthritis deformans, psoriatic arthritis, chronic inflammatory demyelinating polyneuropathy, ulcerative colitis, Crohn's disease, autoimmune hepatitis, primary biliary cholangitis, primary sclerosing cholangitis, non-alcoholic fatty liver disease, non-alcoholic steatohepatitis, type 1 diabetes mellitus, type 2 diabetes mellitus, pancreatitis, systemic lupus erythematosus, cutaneous lupus erythematosus, central nervous system lupus, lupus nephritis, antiphospholipid antibody syndrome, chronic kidney disease, acute kidney disease, sarcoidosis, systemic scleroderma, localized scleroderma, Sjogren's syndrome, ANCA-associated vasculitis, immune complex small vessel vasculitis, polyarteritis nodosa, Kawasaki disease, Takayasu arteritis, giant cell arthritis, idiopathic inflammatory muscle disease (polymyositis, dermatomyositis, inclusion body myositis), IgG4-related diseases, juvenile Still's disease, pelvic inflammatory disease, psoriasis, pustular psoriasis, atopic dermatitis, asthma, allergic rhinitis, relapsing polychondritis, mixed connective tissue disease, graft-versus-host disease, idiopathic pulmonary fibrosis, idiopathic interstitial pneumonia, chronic obstructive pulmonary disease, myelofibrosis, multiple sclerosis, cerebral infarction, ischemic stroke, Alzheimer's disease, Parkinson's disease, depression, developmental epilepsy, Meniere's disease, narcolepsy, macrophage activation syndrome, sepsis, pulmonary hypertension, hyperlipidemia, Behcet's disease, uveitis, osteoporosis, bone fracture, osteosarcoma, cardiac insufficiency, hypertrophic myocardiopathy, atherosclerosis, female gestosis, ovarian cancer, breast cancer, prostate cancer, malignant lymphoma, leukemia, multiple myeloma, lung cancer, granuloma annulare, esophageal cancer, colorectal cancer, pancreatic cancer, gastric cancer, hepatocellular cancer, melanoma, and secondary hemophagocytic lymphohistiocytosis.

25. Use of a compound or the pharmacologically acceptable salt thereof as described in any one of claims 1 to 10, in the manufacture of a medicament for preventing or treating a disease selected from rheumatoid arthritis, arthritis deformans, psoriatic arthritis, ulcerative colitis, primary biliary cholangitis, primary sclerosing cholangitis, pancreatitis, systemic lupus erythematosus, lupus nephritis, systemic scleroderma, Sjogren's syndrome, psoriasis, pustular psoriasis, Behcet's disease, ovarian

cancer, and acute myeloid leukemia.

26. Use of a compound or the pharmacologically acceptable salt thereof as described in any one of claims 1 to 10 to a patient, in the manufacture of a medicament for preventing or treating a disease selected from rheumatoid arthritis, arthritis deformans, psoriatic arthritis, ulcerative colitis, pancreatitis, systemic lupus erythematosus, lupus nephritis, systemic scleroderma, Sjogren's syndrome, pustular psoriasis, and Behcet's disease.

27. A compound or the pharmacologically acceptable salt thereof as described in any one of claims 1 to 10, for use in therapy.