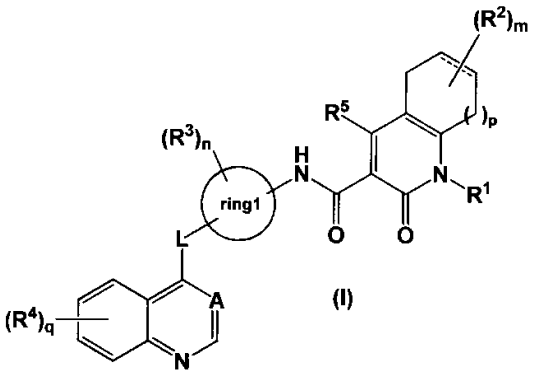
[CLAIMS]

[Claim 1]

A compound represented by general formula (1):



(I)

[wherein R^1 represents (1) a C1–8 alkyl group optionally substituted with one to five R^{11}, (2) a C3–7 carbon ring optionally substituted with one to five R^{12}, or (3) a 4- to 7-membered heterocycle optionally substituted with one to five R^{13}, wherein when the C1–8 alkyl group represented by R^1 is a branched alkyl group, the C1–3 alkyl group branched from the same carbon atom, together with the carbon atom bound thereto, optionally forms a saturated C3–7 carbon ring,

R^2 represents (1) a C1–4 alkyl group, (2) a halogen atom, (3) a C1–4 haloalkyl group, (4) an oxo group, (5) an $-OR^{21}$ group, or (6) an $=NR^{22}$ group,

R^3 represents (1) a C1–4 alkyl group, (2) a halogen atom, or (3) a C1–4 haloalkyl group,

R^4 represents (1) a C1–4 alkoxy group, (2) a C1–4 haloalkyl group, (3) an $-OR^{41}$ group, (4) a C1–4 alkyl group, (5) a C2–4 alkenyloxy group, or (6) a C2–4 alkynyloxy group,

R^5 represents (1) a hydrogen atom, (2) a C1–4 alkyl group, (3) a halogen atom, (4) a C1–4 haloalkyl group, or (5) an $-OR^{21}$ group,

R^{11} represents (1) an $-OR^{101}$ group, (2) an SO_2R^{102} group, (3) an $NR^{103}R^{104}$ group, or (4) a C3–7 carbon ring optionally substituted with one to three halogen atoms,

R^{12} represents (1) a C1–8 alkyl group optionally substituted with a hydroxyl group, or (2) a halogen atom,

R^{13} represents (1) a C1–8 alkyl group optionally substituted with a hydroxyl group, or (2) a halogen atom,

R^{21} represents (1) a hydrogen atom, or (2) a C1–4 alkyl group,

R^{22} represents (1) a hydroxyl group, or (2) C1–4 alkoxy group,

R^{41} represents

(1) a hydrogen atom;

(2) a C1–8 alkyl group substituted with one to two substituents selected from the group consisting of (a) 5- to 7-membered cyclic group optionally substituted with one to two substituents selected from the group consisting of (i) a C1–4 alkyl group, (ii) a C1–4 haloalkyl group, and (iii) a halogen atom, (b) $NR^{401}R^{402}$, (c) a hydroxyl group, and (d) an SO_2R^{403} group;

(3) a C2–8 alkenyl group substituted with one to two substituents selected from the group consisting of (a) 5- to 7-membered cyclic group optionally substituted with one to two substituents selected from the group consisting of (i) a C1–4 alkyl group, (ii) a C1–4 haloalkyl group, and (iii) a halogen atom, (b) $NR^{401}R^{402}$, (c) a hydroxyl group, and (d) an SO_2R^{403} group; or

(4) a C2–8 alkynyl group substituted with one to two substituents selected from the group consisting of (a) 5- to 7-membered cyclic group optionally substituted with one to two substituents selected from the group consisting of (i) a C1–4 alkyl group, (ii) a C1–4 haloalkyl group, and (iii) a halogen atom, (b) $NR^{401}R^{402}$, (c) a hydroxyl group, and (d) an SO_2R^{403} group,

R^{101} represents (1) a hydrogen atom, or (2) a C1–4 alkyl group,

R^{102} represents (1) a hydrogen atom, or (2) a C1–4 alkyl group,

R^{103} and R^{104} each independently represents (1) a hydrogen atom, or (2) a C1–4 alkyl group,

R^{401} and R^{402} each independently represents (1) a hydrogen atom, or (2) a C1–4 alkyl group,

R^{403} represents (1) a hydrogen atom, or (2) a C1–4 alkyl group,

A represents (1) CH, or (2) a nitrogen atom,

L represents (1) -O-, (2) -NH-, (3) -C(O)-, (4) $-CR^6R^7-$, (5) -S-, (6) -S(O)-, or (7) $-S(O)_2-$,

R^6 and R^7 each independently represents (1) a hydrogen atom, (2) a halogen atom, (3) a C1–4 alkyl group, (4) a hydroxyl group, or (5) NH_2,

ring1 represents a 5- to 7-membered cyclic group,

represents a single bond or a double bond,

m is an integer from 0 to 5,

n is an integer from 0 to 5,

p is an integer from 0 to 2,
q is an integer from 0 to 4,
when m is two or more, a plurality of R^2 may be the same as or different from each other, and when two of R^2 represent a C1–3 alkyl group and are on the same carbon atom, the R^2, together with a carbon atom bound thereto, may form a saturated C3–7 carbon ring,
when n is 2 or more, a plurality of R^3 may be the same as or different from each other, and
when q is 2 or more, a plurality of R^4 may be the same as or different from each other], a salt thereof, a solvate thereof, or an N-oxide thereof.

[Claim 2]

The compound according to claim 1, wherein m is one or more, and one of R^2 is necessarily an oxo group.

[Claim 3]

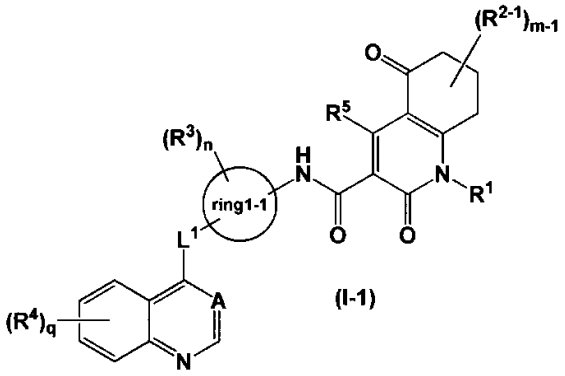
The compound according to claim 1 or 2, wherein the ring1 is benzene or pyridine.

[Claim 4]

The compound according to any one of claims 1 to 3, wherein L is (1) -O-, (2) -NH-, or (3) -C(O)-.

[Claim 5]

The compound according to claim 1, which is represented by general formula (I-1):



(I-1)

[wherein R^{2-1} represents (1) a C1–4 alkyl group, (2) a halogen atom, (3) a C1–4 haloalkyl group, (4) an $-OR^{21}$ group, or (5) an $=NR^{22}$ group,

m-1 is an integer from 0 to 4,
L^1 is (1) -O-, (2) -NH-, or (3) -C(O)-,
ring1-1 represents benzene or pyridine,
when m-1 is 2 or more, a plurality of R^{2-1} may be the same as or different from each other, and when two of R^{2-1} represent a C1–3 alkyl group and are on the same carbon atom, the R^{2-1}, together with a carbon atom bound thereto, may form a saturated C3–7 carbon ring,
and other symbols have the same meanings as defined in claim 1].

[Claim 6]

The compound according to any one of claims 1 to 5, which is: (1) N-{5-[(6,7-dimethoxy-4-quinolinyl)oxy]-2-pyridinyl}-2,5-dioxo-1-phenyl-1,2,5,6,7,8-hexahydro-3-quinolinecarboxamide, (2) N-{5-[(6,7-dimethoxy-4-quinolinyl)oxy]-2-pyridinyl}-7,7-dimethyl-2,5-dioxo-1-phenyl-1,2,5,6,7,8-hexahydro-3-quinolinecarboxamide, (3) N-{5-[(6,7-dimethoxy-4-quinolinyl)oxy]-2-pyridinyl}-1-(2,2-dimethylpropyl)-2,5-dioxo-1,2,5,6,7,8-hexahydro-3-quinolinecarboxamide, (4) N-[5-({7-[3-(4-morpholinyl)propoxy]-4-quinolinyl}oxy)-2-pyridinyl]-2,5-dioxo-1-phenyl-1,2,5,6,7,8-hexahydro-3-quinolinecarboxamide, (5) N-{4-[(6,7-dimethoxy-4-quinolinyl)oxy]-3-fluorophenyl}-2,5-dioxo-1-phenyl-1,2,5,6,7,8-hexahydro-3-quinolinecarboxamide, (6) N-{4-[(6,7-dimethoxy-4-quinolinyl)oxy]phenyl}-2,5-dioxo-1-phenyl-1,2,5,6,7,8-hexahydro-3-quinolinecarboxamide, (7) N-{5-[(6,7-dimethoxy-4-quinolinyl)oxy]-2-pyridinyl}-1-(4-fluorophenyl)-2,5-dioxo-1,2,5,6,7,8-hexahydro-3-quinolinecarboxamide, (8) N-{5-[(6,7-dimethoxy-4-quinolinyl)oxy]-2-pyridinyl}-1-(3-fluorophenyl)-2,5-dioxo-1,2,5,6,7,8-hexahydro-3-quinolinecarboxamide, (9) N-{5-[(6,7-dimethoxy-4-quinolinyl)oxy]-2-pyridinyl}-1-(2-fluorophenyl)-2,5-dioxo-1,2,5,6,7,8-hexahydro-3-quinolinecarboxamide, (10) N-{5-[(6,7-dimethoxy-4-quinazolinyl)oxy]-2-pyridinyl}-2,5-dioxo-1-phenyl-1,2,5,6,7,8-hexahydro-3-quinolinecarboxamide, (11) N-{5-[(6,7-dimethoxy-4-quinazolinyl)oxy]-2-pyridinyl}-1-(4-fluorophenyl)-2,5-dioxo-1,2,5,6,7,8-hexahydro-3-quinolinecarboxamide, (12) N-{5-[(6,7-dimethoxy-4-quinolinyl)oxy]-2-pyridinyl}-1-[(2S)-1-hydroxy-3-methyl-2-butanyl]-2,5-dioxo-1,2,5,6,7,8-hexahydro-3-quinolinecarboxamide, (13) N-{4-[(6,7-dimethoxy-4-quinolinyl)oxy]-3-fluorophenyl}-1-(3-fluorophenyl)-2,5-dioxo-1,2,5,6,7,8-hexahydro-3-quinolinecarboxamide, (14)

N-{5-[(6,7-dimethoxy-4-quinolinyl)oxy]-2-pyridinyl}-6,6-dimethyl-2,5-dioxo-1-phenyl-1,2,5,6,7,8-hexahydro-3-quinolinecarboxamide, (15)
N-[5-({6-methoxy-7-[3-(4-morpholinyl)propoxy]-4-quinolinyl}oxy)-2-pyridinyl]-2,5-dioxo-1-phenyl-1,2,5,6,7,8-hexahydro-3-quinolinecarboxamide, (16)
N-(5-{[7-(3-hydroxy-3-methylbutoxy)-6-methoxy-4-quinolinyl]oxy}-2-pyridinyl)-2,5-dioxo-1-phenyl-1,2,5,6,7,8-hexahydro-3-quinolinecarboxamide, or (17)
N-[5-({6-methoxy-7-[3-(1-pyrrolidinyl)propoxy]-4-quinolinyl}oxy)-2-pyridinyl]-2,5-dioxo-1-phenyl-1,2,5,6,7,8-hexahydro-3-quinolinecarboxamide.

[Claim 7]

A pharmaceutical composition containing a compound represented by general formula (I) as defined in claim 1, a salt thereof, a solvate thereof, or an N-oxide thereof.

[Claim 8]

The pharmaceutical composition according to claim 7, which is an Axl inhibitor.

[Claim 9]

The pharmaceutical composition according to claim 7, which is an agent for use in the prevention and/or treatment of an Axl-related disease.

[Claim 10]

The pharmaceutical composition according to claim 9, wherein the Axl-related disease includes a cancer, a kidney disease, an immune system disease, or a circulatory system disease.

[Claim 11]

The pharmaceutical composition according to claim 10, wherein the cancer is acute myeloid leukemia, chronic myeloid leukemia, acute lymphatic leukemia, melanoma, breast cancer, pancreatic cancer, glioma, esophageal adenocarcinoma, large intestine cancer, renal cell carcinoma, thyroid cancer, non-small cell lung cancer, prostate cancer, stomach cancer, liver cancer, uveal malignant melanoma, ovarian cancer, endometrial cancer, lymphoma, head and neck cancer, or sarcoma.

[Claim 12]

The pharmaceutical composition according to claim 7, which is a metastasis suppressing agent for cancer cells.

[Claim 13]

A compound represented by general formula (I) according to claim 1, a salt thereof, a solvate thereof, or an N-oxide thereof, for use in the prevention and/or treatment of an Axl-related disease.

[Claim 14]

Use of a compound represented by general formula (I), a salt thereof, a solvate thereof, or an N-oxide thereof, as defined in claim 1, to manufacture an agent for the prevention and/or treatment of an Axl-related disease.

[Claim 15]

N-{5-[(6,7-dimethoxy-4-quinolinyl)oxy]-2-pyridinyl}-2,5-dioxo-1-phenyl-1,2,5,6,7,8-hexahydro-3-quinolinecarboxamide, or a salt thereof.