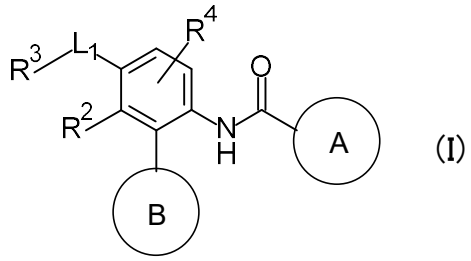
CLAIMS

1. A compound of formula (I):

[Chemical Formula 1]

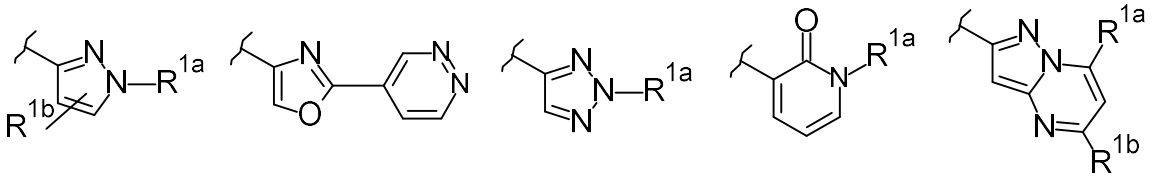


(I)

or a salt thereof, wherein

A is a group of formula (A-i), (A-ii), (A-iii), (A-iv) or (A-v):

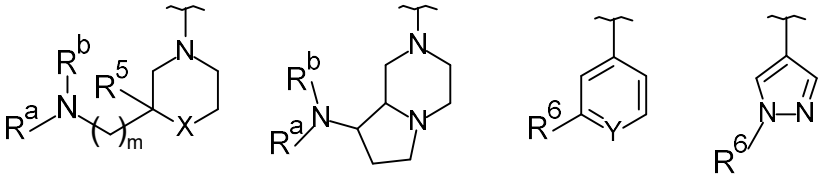
[Chemical Formula 2]



(A-i) (A-ii) (A-iii) (A-iv) (A-v)

B is a group of formula (B-i), (B-ii), (B-iii) or (B-iv):

[Chemical Formula 3]



(B-i) (B-ii) (B-iii) (B-iv)

where B is a group of (B-i) when $R^{1a}$ is a halogeno-$C_{1-6}$ alkyl,

$R^{1a}$ is pyridazinyl or a halogeno-$C_{1-6}$ alkyl,

$R^{1b}$ is H or a $C_{1-6}$ alkyl,

$R^2$ is a $C_{3-5}$ cycloalkyl, an -O-($C_{1-6}$ alkyl), a halogeno-$C_{1-6}$ alkyl, a halogen or a phenyl,

$R^3$ is i) a phenyl optionally substituted with a group selected from the group consisting of a $C_{1-6}$ alkyl, a halogeno-$C_{1-6}$ alkyl, a $C_{3-5}$ cycloalkyl, an -O-($C_{1-6}$ alkyl), an -O-(halogeno-$C_{1-6}$ alkyl),

cyano, nitro, methanesulfonyl and a halogen, ii) a $C_{3-8}$ cycloalkyl optionally substituted with a group selected from the group consisting of a $C_{1-6}$ alkyl and a halogen, iii) a pyridyl optionally substituted with a group selected from the group consisting of a $C_{1-6}$ alkyl, a halogeno-$C_{1-6}$ alkyl, a $C_{3-5}$ cycloalkyl, an -O-($C_{1-6}$ alkyl), an -O-(halogeno-$C_{1-6}$ alkyl), cyano, nitro, methanesulfonyl and a halogen, or iv) five- or six-membered partially unsaturated heterocyclic ring containing one to four hetero atoms selected from oxygen, sulfur and nitrogen,

$R^4$ is H or F,

$R^5$ is H or F,

$R^6$ is -$L_2$-$(CH_2)_2NR^aR^b$ or piperidinyl,

$L_1$ is a bond, O or NH,

$L_2$ is a bond, O or $CH_2$,

X is $CH_2$ or N-methyl,

Y is CH or N,

$R^a$ is H or methyl,

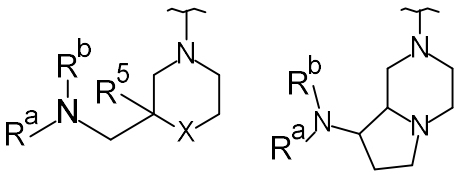
$R^b$ is H, methyl, ethyl, cyclopropyl or -$(CH_2)_2O$-$CH_3$, and

m is 1, 2 or 3.

2. The compound or a salt thereof according to claim 1, wherein $R^2$ is a halogeno-$C_{1-6}$ alkyl or a halogen, $R^3$ is i) a phenyl optionally substituted with a group selected from the group consisting of a $C_{1-6}$ alkyl, a halogeno-$C_{1-6}$ alkyl, a $C_{3-5}$ cycloalkyl, an -O-($C_{1-6}$ alkyl), an -O-(halogeno-$C_{1-6}$ alkyl), cyano, nitro, methanesulphonyl and a halogen, or ii) a $C_{3-8}$ cycloalkyl optionally substituted with a group selected from the group consisting of a $C_{1-6}$ alkyl and a halogen, and $L_1$ is a bond or O.

3. The compound or a salt thereof according to claim 2, wherein B is a group of the following formula (B-i-a) or (B-ii):

[Chemical Formula 4]



(B-i-a)

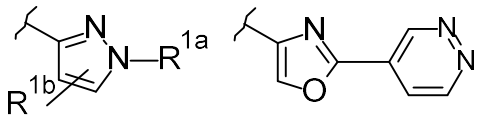


(B-ii)

where B is a group of (B-i-a) when $R^{1a}$ is a halogeno-$C_{1-6}$ alkyl.

4. The compound or a salt thereof according to claim 3, wherein A is a group of the following formula (A-i) or (A-ii):

[Chemical Formula 5]



(A-i) (A-ii)

5. The compound or a salt thereof according to claim 4, wherein $R^3$ is a phenyl optionally substituted with a group selected from the group consisting of a $C_{1-6}$ alkyl and a halogen, or a $C_{3-5}$ cycloalkyl, and $R^b$ is H or methyl.

6. The compound or a salt thereof according to claim 1, wherein the compound or a salt thereof is selected from the group consisting of:

N-{2-[(3S)-3-(aminomethyl)piperidin-1-yl]-4-(2-fluorophenoxy)-3-(trifluoromethyl)phenyl}-1-(2,2-difluoroethyl)-1H-pyrazole-3-carboxamide;

N-{2-[(3S)-3-(aminomethyl)-4-methylpiperazin-1-yl]-4-(2-chlorophenoxy)-3-(trifluoromethyl)phenyl}-1-(2,2-difluoroethyl)-1H-pyrazole-3-carboxamide;

N-{2-[(3S)-3-(aminomethyl)-4-methylpiperazin-1-yl]-3-chloro-4-(2-chlorophenoxy)phenyl}-1-(2,2-difluoroethyl)-1H-pyrazole-3-carboxamide;

N-[4-(2-fluorophenoxy)-2-{(3S)-4-methyl-3-[(methylamino)methyl]piperazin-1-yl}-3-(trifluoromethyl)phenyl]-1-(pyridazin-4-yl)-1H-pyrazole-3-carboxamide;

N-{2-[(3R)-3-(aminomethyl)-3-fluoropiperidin-1-yl]-4-(2-fluorophenoxy)-3-(trifluoromethyl)phenyl}-1-(pyridazin-4-yl)-1H-pyrazole-3-carboxamide;

N-[4-(2-fluorophenoxy)-2-{(3R)-4-methyl-3-[(methylamino)methyl]piperazin-1-yl}-3-(trifluoromethyl)phenyl]-1-(pyridazin-4-yl)-1H-pyrazole-3-carboxamide;

N-[4-cyclopentyl-2-{(3S)-4-methyl-3-[(methylamino)methyl]piperazin-1-yl}-3-(trifluoromethyl)phenyl]-1-(pyridazin-4-yl)-1H-pyrazole-3-carboxamide;

N-{2-[(8R,8aS)-8-aminohexahydropyrrolo[1,2-a]pyrazine-2(1H)-yl]-4-(2-fluorophenoxy)-3-(trifluoromethyl)phenyl}-2-(pyridazin-4-yl)-1,3-oxazole-4-carboxamide; and

N-[3-chloro-4-(2-fluorophenoxy)-2-{(3S)-4-methyl-3-[(methylamino)methyl]piperazin-1-yl}phenyl]-1-(pyridazin-4-yl)-1H-pyrazole-3-carboxamide.

7. The compound or a salt thereof according to claim 1, wherein the compound or a salt thereof is selected from the group consisting of:

N-[4-(2-fluorophenoxy)-2-{(3S)-4-methyl-3-[(methylamino)methyl]piperazin-1-yl}-3-(trifluoromethyl)phenyl]-1-(pyridazin-4-yl)-1H-pyrazole-3-carboxamide monobutanedioate;

N-[4-(2-fluorophenoxy)-2-{(3R)-4-methyl-3-[(methylamino)methyl]piperazin-1-yl}-3-(trifluoromethyl)phenyl]-1-(pyridazin-4-yl)-1H-pyrazole-3-carboxamide monobutanedioate;

N-[4-cyclopentyl-2-{(3S)-4-methyl-3-[(methylamino)methyl]piperazin-1-yl}-3-(trifluoromethyl)phenyl]-1-(pyridazin-4-yl)-1H-pyrazole-3-carboxamide monobutanedioate;

N-[3-chloro-4-(2-fluorophenoxy)-2-{(3S)-4-methyl-3-[(methylamino)methyl]piperazin-1-yl}phenyl]-1-(pyridazin-4-yl)-1H-pyrazole-3-carboxamide monobutanedioate; and

N-{2-[(3R)-3-(aminomethyl)-3-fluoropiperidin-1-yl]-4-(2-fluorophenoxy)-3-(trifluoromethyl)phenyl}-1-(pyridazin-4-yl)-1H-pyrazole-3-carboxamide monobutanedioate.

8. A pharmaceutical composition comprising the compound or a salt thereof according to claim 1, and one or more pharmaceutically acceptable excipients.

9. The pharmaceutical composition according to claim 8, which is a pharmaceutical composition for treatment of cancer related to activation of immune cells or cancer resistant to anti-PD-1 antibody/anti-PD-L1 antibody therapy.

10. Use of the compound or a salt thereof according to claim 1, for the manufacture of a pharmaceutical composition for treatment of cancer related to activation of immune cells or cancer resistant to anti-PD-1 antibody/anti-PD-L1 antibody therapy.

11. The compound or a salt thereof according to claim 1, which is used for treatment of cancer related to activation of immune cells or cancer resistant to anti-PD-1 antibody/anti-PD-L1 antibody therapy.

12. Use of the compound or a salt thereof according to claim 1, for treatment of cancer related to activation of immune cells or cancer resistant to anti-PD-1 antibody/anti-PD-L1 antibody therapy.

13. A DGK ξ inhibitor comprising the compound of formula (I) or a salt thereof.

14. The compound or a salt thereof according to claim 6, wherein the compound or a salt thereof is

N-[4-(2-fluorophenoxy)-2-{(3S)-4-methyl-3-[(methylamino)methyl]piperazin-1-yl}-3-(trifluoromethyl)phenyl]-1-(pyridazin-4-yl)-1H-pyrazole-3-carboxamide.

15. The compound or a salt thereof according to claim 14, wherein the compound or a salt thereof is

N-[4-(2-fluorophenoxy)-2-{(3S)-4-methyl-3-[(methylamino)methyl]piperazin-1-yl}-3-(trifluoromethyl)phenyl]-1-(pyridazin-4-yl)-1H-pyrazole-3-carboxamide monobutanedioate.

16. The compound or a salt thereof according to claim 6, wherein the compound or a salt thereof is

N-[4-(2-fluorophenoxy)-2-{(3R)-4-methyl-3-[(methylamino)methyl]piperazin-1-yl}-3-(trifluoromethyl)phenyl]-1-(pyridazin-4-yl)-1H-pyrazole-3-carboxamide.

17. The compound or a salt thereof according to claim 16, wherein the compound or a salt thereof is

N-[4-(2-fluorophenoxy)-2-{(3R)-4-methyl-3-[(methylamino)methyl]piperazin-1-yl}-3-(trifluoromethyl)phenyl]-1-(pyridazin-4-yl)-1H-pyrazole-3-carboxamide monobutanedioate.

18. The compound or a salt thereof according to claim 6, wherein the compound or a salt thereof is

N-[4-cyclopentyl-2-{(3S)-4-methyl-3-[(methylamino)methyl]piperazin-1-yl}-3-(trifluoromethyl)phenyl]-1-(pyridazin-4-yl)-1H-pyrazole-3-carboxamide.

19. The compound or a salt thereof according to claim 18, wherein the compound or a salt thereof is

N-[4-cyclopentyl-2-{(3S)-4-methyl-3-[(methylamino)methyl]piperazin-1-yl}-3-(trifluoromethyl)phenyl]-1-(pyridazin-4-yl)-1H-pyrazole-3-carboxamide monobutanedioate.

20. The compound or a salt thereof according to claim 6, wherein the compound or a salt thereof is

N-[3-chloro-4-(2-fluorophenoxy)-2-{(3S)-4-methyl-3-[(methylamino)methyl]piperazin-1-yl}phenyl]-1-(pyridazin-4-yl)-1H-pyrazole-3-carboxamide.

21. The compound or a salt thereof according to claim 20, wherein the compound or a salt thereof is

N-[3-chloro-4-(2-fluorophenoxy)-2-{(3S)-4-methyl-3-[(methylamino)methyl]piperazin-1-yl}phenyl]-1-(pyridazin-4-yl)-1H-pyrazole-3-carboxamide monobutanedioate.

22. The compound or a salt thereof according to claim 6, wherein the compound or a salt thereof is

N-{2-[(3R)-3-(aminomethyl)-3-fluoropiperidin-1-yl]-4-(2-fluorophenoxy)-3-(trifluoromethyl)phenyl}-1-(pyridazin-4-yl)-1H-pyrazole-3-carboxamide.

23. The compound or a salt thereof according to claim 22, wherein the compound or a salt thereof is

N-{2-[(3R)-3-(aminomethyl)-3-fluoropiperidin-1-yl]-4-(2-fluorophenoxy)-3-(trifluoromethyl)phenyl}-1-(pyridazin-4-yl)-1H-pyrazole-3-carboxamide monobutanedioate.

24. The compound or a salt thereof according to claim 15, which is a crystal having an X-ray powder diffraction spectrum, comprising at the following angles 2θ (°) : 8.4, 9.9, 10.5, 11.2, 11.4, 14.7, 16.3, 19.2, 22.2, 24.0.

25. The compound or a salt thereof according to claim 17, which is a crystal having an X-ray powder diffraction spectrum, comprising at the following angles 2θ (°) : 8.4, 9.9, 10.5, 11.2, 11.4, 14.7, 16.3, 19.2, 22.2, 24.0.

26. The compound or a salt thereof according to claim 19, which is a crystal having an X-ray powder diffraction spectrum, comprising at the following angles 2θ (°) : 7.7, 8.1, 11.6, 12.8, 20.3, 20.7, 22.3.

27. The compound or a salt thereof according to claim 21, which is a crystal having an X-ray powder diffraction spectrum, comprising at the following angles 2θ (°) : 7.0, 10.5, 12.1, 14.4, 14.6, 17.8, 19.3, 19.9, 20.2, 21.2.

28. The compound or a salt thereof according to claim 23, which is a crystal having an X-ray powder diffraction spectrum, comprising at the following angles 2θ (°) : 9.4, 10.7, 12.3, 13.2, 14.0, 16.8, 20.7, 21.1, 23.0, 23.5.