CLAIMS

1. Use of a TLR7 agonist in manufacture of a medicament for inducing effector memory T cell to treat a cancer or an infection, wherein the TLR7 agonist is N-{4-[(2-amino-4-{[(3S)-1-hydroxyhexan-3-yl]amino}-6-methylpyrimidin-5-yl)methyl]-3-methoxybenzyl}-N-(2,2,2-trifluoroethyl)glycine, N-{4-[(2-amino-4-{[(3S)-1-hydroxyhexan-3-yl]amino}-6 methylpyrimidin-5-yl)methyl]-3-methoxybenzyl}-N-(2,2-difluoroethyl)glycine, or a pharmaceutically acceptable salt thereof, and is used with an immune checkpoint inhibitor, wherein the immune checkpoint inhibitor is an anti-PD-1 antibody, an anti-PD-L1 antibody, or an anti-CTLA-4 antibody.

2. Use of a TLR7 agonist in manufacture of a medicament for inducing MHC class I to treat a cancer or an infection, wherein the TLR7 agonist is N-{4-[(2-amino-4-{[(3S)-1-hydroxyhexan-3-yl]amino}-6-methylpyrimidin-5-yl)methyl]-3-methoxybenzyl}-N-(2,2,2-trifluoroethyl)glycine, N-{4-[(2-amino-4-{[(3S)-1-hydroxyhexan-3-yl]amino}-6 methylpyrimidin-5-yl)methyl]-3-methoxybenzyl}-N-(2,2-difluoroethyl)glycine, or a pharmaceutically acceptable salt thereof, and is used with an immune checkpoint inhibitor, wherein the immune checkpoint inhibitor is an

anti-PD-1 antibody, an anti-PD-L1 antibody, or an anti-CTLA-4 antibody.

3. The use according to claim 1 or 2, wherein the medicament is for treating a cancer.

4. The use according to claim 3, wherein the cancer is selected from the group consisting of non-small-cell lung cancer; small cell lung cancer; pancreatic cancer; malignant melanoma; renal cell carcinoma; gastric cancer; colon cancer; rectal cancer; small intestinal cancer; breast cancer; germ cell cancer; bladder cancer; prostate cancer; endometrial cancer; cervical cancer; ovarian cancer; liver cancer; Merkel cell carcinoma; bone cancer; head and neck cancer; cutaneous or intraorbital malignant melanoma; anal cancer; testicular cancer; esophageal cancer; endocrine system cancer; thyroid cancer; parathyroid cancer; adrenal cancer; soft tissue sarcoma; urothelial cancer; penile cancer; glioblastoma multiforme; brain tumor; chronic or acute leukemia including acute myeloid leukemia, chronic myeloid leukemia, acute lymphoblastic leukemia, and chronic lymphocytic leukemia; malignant lymphoma including Hodgkin's lymphoma and non-Hodgkin's lymphoma; myelodysplastic syndrome; and multiple myeloma.

5. The use according to any one of claims 1 to 4, wherein the medicament is to be administered to a patient having refractoriness to the immune checkpoint inhibitor.

6. The use according to any one of claims 1 to 5, wherein the medicament is to be administered to a patient who has relapsed with cancer.

7. The use according to any one of claims 1 to 6, wherein the medicament has a long-term anticancer immunity.

8. The use according to any one of claims 1 to 7, wherein the TLR7 agonist is N-{4-[(2-amino-4-{[(3S)-1-hydroxyhexan-3-yl]amino}-6-methylpyrimidin-5-yl)methyl]-3-methoxybenzyl}-N-(2,2,2-trifluoroethyl)glycine, or a pharmaceutically acceptable salt thereof.

9. The use of any one of claims 1 to 8, wherein the immune checkpoint inhibitor is anti-PD-1 antibody or anti-PD-L1 antibody.

10. The use according to any one of claims 1 to 8, wherein the immune checkpoint inhibitor is anti-PD-1 antibody.

11. The use according to any one of claims 1 to 8, wherein the immune checkpoint inhibitor is anti-CTLA-4 antibody.

12. The use according to any one of claims 1 to 10, wherein the anti-PD-1 antibody is nivolumab, pembrolizumab, cemiplimab, tislelizumab, dostarlimab, spartalizumab, camrelizumab, genolimzumab, sintilimab, JNJ-3283, BI-754091, INCMGA-00012, ABBV-181, CC-90006, AGEN-2034w, GSL-010, LZM-009, Sym-021, AB-122, AK-105, CS-1003, HLX-10, or BCD-100.

13. The use according to any one of claims 1 to 9, wherein the anti-PD-L1 antibody is durvalumab, atezolizumab, avelumab, STI-1014, CK-301, BMS-986189, LY-3300054, CX-072, CBT-502, FAZ-053, FS-118, HTI-1088, MSB-2311, BGB-A333, IMC-001, HLX-20, A-167, or BMS-936559.

14. The use according to any one of claims 1 to 8 and 11, wherein the anti-CTLA-4 antibody is ipilimumab, tremelimumab, BMS-986218, MK-1308, ADU-1604, BMS-986249, CS-1002, BCD-145, or REGN-4659.

15. The use according to any one of claims 1 to 14, wherein the TLR7 agonist and the immune checkpoint inhibitor are to be simultaneously administered.

16. The use according to any one of claims 1 to 14, wherein the TLR7 agonist and the immune checkpoint inhibitor are to be separately administered.

17. The use according to any one of claims 1 to 14, wherein the TLR7 agonist is to be administered prior to the immune checkpoint inhibitor.

18. The use according to any one of claims 1 to 14, wherein the TLR7 agonist is to be administered posterior to the immune checkpoint inhibitor.

19. The use according to any one of claims 1 to 18, wherein the medicament further comprises a pharmaceutically acceptable carrier.

20. A kit of an agent for inducing effector memory T cell, comprising a TLR7 agonist and an immune checkpoint inhibitor, wherein the TLR7 agonist is N-{4-[(2-amino-4-{[(3S)-1-hydroxyhexan-3-yl]amino}-6-methylpyrimidin-5-yl)methyl]-3-methoxybenzyl}-N-(2,2,2-trifluoroethyl)glycine, N-{4-[(2-amino-4-{[(3S)-1-hydroxyhexan-3-yl]amino}-6-methylpyrimidin-5-yl)methyl]-3-methoxybenzyl}-N-(2,2-difluoroethyl)glycine, or a pharmaceutically acceptable salt thereof, and the immune checkpoint inhibitor is an anti-PD-1 antibody, an anti-PD-L1 antibody, or an anti-CTLA-4 antibody.

21. A kit of an agent for inducing MHC class I, comprising a TLR7 agonist and an immune checkpoint inhibitor, wherein the TLR7 agonist is N-{4-[(2-amino-4-{[(3S)-1-hydroxyhexan-3-yl]amino}-6-methylpyrimidin-5-yl)methyl]-3-methoxybenzyl}-N-(2,2,2-trifluoroethyl)glycine, N-{4-[(2-amino-4-{[(3S)-1-hydroxyhexan-3-yl]amino}-6-methylpyrimidin-5-yl)methyl]-3-methoxybenzyl}-N-(2,2-difluoroethyl)glycine, or a pharmaceutically acceptable salt thereof, and the immune checkpoint inhibitor is an anti-PD-1 antibody, an anti-PD-L1 antibody, or an anti-CTLA-4 antibody.

22. Use of a TLR7 agonist in manufacture of a medicament for inducing effector memory T cell to treat a cancer or an infection, wherein the TLR7 agonist is to be administered simultaneously, separately, or sequentially with an immune checkpoint inhibitor, wherein the TLR7 agonist is N-{4-[(2-amino-4-{[(3S)-1-hydroxyhexan-3-yl]amino}-6-methylpyrimidin-5-yl)methyl]-3-methoxybenzyl}-N-(2,2,2-trifluoroethyl)glycine, N-{4-[(2-amino-4-{[(3S)-1-hydroxyhexan-3-yl]amino}-6-methylpyrimidin-5-yl)methyl]-3-methoxybenzyl}-N-(2,2-difluoroethyl)glycine, or a pharmaceutically acceptable salt thereof, and the immune checkpoint inhibitor is an anti-PD-1 antibody, an anti-PD-L1 antibody, or an anti-CTLA-4 antibody.

23. Use of a TLR7 agonist in manufacture of a medicament for inducing MHC class I to treat a cancer or an infection, wherein the TLR7 agonist is to be administered simultaneously, separately, or sequentially with an immune checkpoint inhibitor, wherein the TLR7 agonist is N-{4-[(2-amino-4-{[(3S)-1-hydroxyhexan-3-yl]amino}-6-methylpyrimidin-5-yl)methyl]-3-methoxybenzyl}-N-(2,2,2-trifluoroethyl)glycine, N-{4-[(2-amino-4-{[(3S)-1-hydroxyhexan-3-yl]amino}-6-methylpyrimidin-5-yl)methyl]-3-methoxybenzyl}-N-(2,2-difluoroethyl)glycine, or a pharmaceutically acceptable salt thereof, and the immune checkpoint inhibitor is an anti-PD-1 antibody, an anti-PD-L1 antibody, or an anti-CTLA-4 antibody.

24. Use of a TLR7 agonist comprising N-{4-[(2-amino-4-{[(3S)-1-hydroxyhexan-3-yl]amino}-6-methylpyrimidin-5-yl)methyl]-3-methoxybenzyl}-N-(2,2,2-trifluoroethyl)glycine, N-{4-[(2-amino-4-{[(3S)-1-hydroxyhexan-3-yl]amino}-6-methylpyrimidin-5-yl)methyl]-3-methoxybenzyl}-N-(2,2-difluoroethyl)glycine, or a pharmaceutically acceptable salt thereof, in manufacture of a medicament for treating or preventing a cancer, wherein the medicament is to be used with an immune checkpoint inhibitor, wherein the immune checkpoint inhibitor is anti-PD-1 antibody, anti-PD-L1 antibody, or anti-CTLA-4 antibody.

25. The use according to claim 24, wherein the TLR7 agonist is N-{4-[(2-amino-4-{[(3S)-1-hydroxyhexan-3-yl]amino}-6-methylpyrimidin-5-yl)methyl]-3-methoxybenzyl}-N-(2,2,2-trifluoroethyl)glycine, or a pharmaceutically acceptable salt thereof.

26. The use according to claim 24, wherein the immune checkpoint inhibitor is anti-PD-1 antibody or anti-PD-L1 antibody.

27. The use according to claim 24, wherein the immune checkpoint inhibitor is anti-PD-1 antibody.

28. The use according to claim 24, wherein the immune checkpoint inhibitor is anti-CTLA-4 antibody.

29. The use according to any one of claims 24 to 27, wherein the anti-PD-1 antibody is nivolumab, pembrolizumab, cemiplimab, tislelizumab, dostarlimab, spartalizumab, camrelizumab, genolimzumab, sintilimab, JNJ-3283, BI-754091, INCMGA-00012, ABBV-181, CC-90006, AGEN-2034w, GSL-010, LZM-009, Sym-021, AB-122, AK-105, CS-1003, HLX-10, or BCD-100.

30. The use according to any one of claims 24 to 26, wherein the anti-PD-L1 antibody is durvalumab, atezolizumab, avelumab, STI-1014, CK-301, BMS-986189, LY-3300054, CX-072,

CBT-502, FAZ-053, FS-118, HTI-1088, MSB-2311, BGB-A333, IMC-001, HLX-20, A-167, or BMS-936559.

31. The use according to any one of claims 24, 25 and 28, wherein the anti-CTLA-4 antibody is ipilimumab, tremelimumab, BMS-986218, MK-1308, ADU-1604, BMS-986249, CS-1002, BCD-145, or REGN-4659.

32. The use according to any one of claims 24 to 31, wherein the medicament is to be administered to a patient who is resistant to the immune checkpoint inhibitor.

33. The use according to any one of claims 24 to 31, wherein the medicament is to be administered to a patient who suffers relapse of cancer.

34. The use according to any one of claims 24 to 31, wherein the medicament has a long-term anticancer immunity.

35. The use according to any one of claims 24 to 31, wherein the medicament further comprises a pharmaceutically acceptable carrier.

36. A kit of an agent for treating or preventing a cancer, comprising N-{4-[(2-amino-4-{[(3S)-1-hydroxyhexan-3-yl]amino}-6-methylpyrimidin-5-yl)methyl]-3-methoxybenzyl}-

N-(2,2,2-trifluoroethyl)glycine, N-{4-[(2-amino-4-{[(3S)-1-hydroxyhexan-3-yl]amino}-6-methylpyrimidin-5-yl)methyl]-3-methoxybenzyl}-N-(2,2-difluoroethyl)glycine, or a pharmaceutically acceptable salt thereof, and an immune checkpoint inhibitor, wherein the immune checkpoint inhibitor is anti-PD-1 antibody, anti-PD-L1 antibody, or anti-CTLA-4 antibody.

37. Use of a TLR7 agonist comprising N-{4-[(2-amino-4-{[(3S)-1-hydroxyhexan-3-yl]amino}-6-methylpyrimidin-5-yl)methyl]-3-methoxybenzyl}-N-(2,2,2-trifluoroethyl)glycine,N-{4-[(2-amino-4-{[(3S)-1-hydroxyhexan-3-yl]amino}-6-methylpyrimidin-5-yl)methyl]-3-methoxybenzyl}-N-(2,2-difluoroethyl)glycine, or a pharmaceutically acceptable salt thereof in manufacture of a medicament for treating or preventing a cancer, wherein the TLR7 agonist is to be administered simultaneously, separately, or sequentially with an immune checkpoint inhibitor, wherein the immune checkpoint inhibitor is anti-PD-1 antibody, anti-PD-L1 antibody, or anti-CTLA-4 antibody.