PD-L1 and a pharmaceutically effective amount of an FGFR inhibitor, wherein the antibody that blocks the interaction between PD-1 and PD-L1 and the FGFR inhibitor are administered if one or more FGFR variants are present in a biological sample from the patient.

[0006] In other embodiments, the methods of treating cancer in a patient comprise: administering to the patient a pharmaceutically effective amount of an antibody that blocks the interaction between PD-1 and PD-L1; monitoring the efficacy of the antibody; and, if the antibody is not efficacious, evaluating a biological sample from the patient for a presence of one or more FGFR variants and administering to the patient a pharmaceutically effective amount of an FGFR inhibitor if the one or more FGFR variants are present in the sample.

[0007] Also, disclosed herein are uses of an antibody that blocks the interaction between PD-1 and PD-L1 and an FGFR inhibitor for the manufacture of a medicament for the treatment of cancer, in particular for the treatment of cancer in a patient wherein one or more FGFR variants are present in a biological sample from the patient. In some embodiments, the medicament contains a pharmaceutically effective amount of an antibody that blocks the interaction between PD-1 and PD-L1 and a pharmaceutically effective amount of an FGFR inhibitor, wherein the medicament is used in a patient wherein one or more FGFR variants are present in a biological sample from the patient.

[0007a] In one aspect, there is provided use of an antibody that blocks the interaction between PD-1 and PD-L1 in the manufacture of a medicament for treating cancer in a patient, wherein the medicament is to be administered with an FGFR inhibitor if one or more FGFR variants are present in a biological sample that has been obtained from the patient.

[0007b] In another aspect, there is provided use of an antibody that blocks the interaction between PD-1 and PD-L1 in the manufacture of a medicament for treating cancer; wherein treating comprises the steps of;

monitoring the efficacy of the antibody; and

if the antibody is not efficacious,

evaluating a biological sample that has been obtained from the patient for a presence of one or more FGFR variants; and

wherein the medicament is to be administered with an FGFR inhibitor if the one or more FGFR variants are present in the sample.

[0008] Also disclosed herein are combinations of an antibody that blocks the interaction between PD-1 and PD-L1 and an FGFR inhibitor for use in the treatment of cancer, in particular for use in the treatment of cancer in a patient wherein one or more FGFR variants

are present in a biological sample from the patient. In some embodiments, the combination comprises a pharmaceutically effective amount of an antibody that blocks the interaction between PD-1 and PD-L1 and a pharmaceutically effective amount of an FGFR inhibitor for use in the treatment of cancer in a patient wherein one or more FGFR variants are present in a biological sample from the patient. In other embodiments, the combination for treating cancer comprises administration of a pharmaceutically effective amount of an antibody that blocks the interaction between PD-1 and PD-L1; monitoring the efficacy of the antibody; and, if the antibody is not efficacious, evaluating a biological sample from the patient for a presence of one or more FGFR variants, followed by administration to the patient a pharmaceutically effective amount of an FGFR inhibitor if the one or more FGFR variants are present in the sample.

[0008a] In another aspect, there is provided a combination of an antibody that blocks the interaction between PD-1 and PD-L1 and an FGFR inhibitor for use in the treatment of cancer in a patient wherein one or more FGFR variants are present in a biological sample from the patient.

[0008b] In another aspect, there is provided a combination of an antibody that blocks the interaction between PD-1 and PD-L1 and an FGFR inhibitor for use in the treatment of cancer in a patient, wherein the treatment of cancer comprises

administration of a pharmaceutically effective amount of the antibody that blocks the interaction between PD-1 and PD-L1;

monitoring the efficacy of the antibody; and

if the antibody is not efficacious,

evaluating a biological sample from the patient for a presence of one or more FGFR variants, followed by administration to the patient a pharmaceutically effective amount of an FGFR inhibitor if the one or more FGFR variants are present in the sample.

What is Claimed:

1. Use of an antibody that blocks the interaction between PD-1 and PD-Ll in the manufacture of a medicament for treating cancer in a patient, wherein the medicament is to be administered with an FGFR inhibitor if one or more FGFR variants are present in a biological sample that has been obtained from the patient.

2. The use of claim 1, further comprising evaluating the presence of one or more FGFR variants in the biological sample before the administering step.

3. The use of claim 1 or 2, further comprising evaluating PD-Ll expression in a biological sample that has been obtained from the patient.

4. The use of claim 3, wherein the biological sample for the one or more FGFR variants and the PD-Ll is the same biological sample.

5. The use of claim 3, wherein the biological sample for the one or more FGFR variants is different from the biological sample for PD-Ll expression.

6. The use of any one of the previous claims, wherein the biological sample is blood, lymph fluid, bone marrow, a solid tumor sample, or any combination thereof.

7. The use of any one of the previous claims, wherein the administering step is performed if PD-L 1 expression is low in the biological sample.

8. The use of any one of the previous claims, wherein the cancer is lung cancer, bladder cancer, gastric cancer, breast cancer, ovarian cancer, head and neck cancer, esophageal cancer, glioblastoma, or any combination thereof.

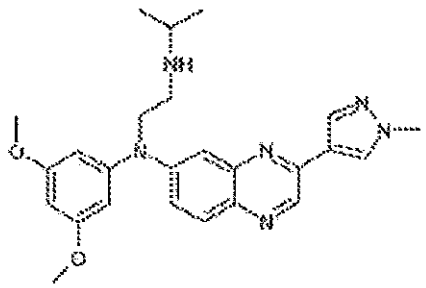
9. The use of claim 8, wherein the lung cancer is non-small cell lung cancer (NSCLC) adenocarcinoma, NSCLC squamous cell carcinoma, small cell lung cancer, or any combination thereof.

10. The use of any one of the previous claims, wherein the one or more FGFR variants comprise an FGFR mutation, an FGFR amplification, an FGFR fusion gene, or a combination thereof.

11. The use of claim 10, wherein the FGFR fusion gene is FGFR2:AFF3; FGFR2:BICC1; FGFR2:CASP7; FGFR2:CCDC6; FGFR2:OFDl; FGFR3:BAIAP2L1; FGFR3:TACC3-Intron; FGFR3:TACC3V1; FGFR3:TACC3V3; or a combination thereof.

12. The use of any one of the previous claims, wherein the antibody that blocks the interaction between PD-1 and PD-Ll is an anti-PD-l antibody, an anti -PD-Ll antibody, or a combination thereof.

13. The use of any one of the previous claims, wherein the FGFR inhibitor is the compound of formula (I):



(I)

or a pharmaceutically acceptable salt thereof.

14. Use of an antibody that blocks the interaction between PD-1 and PD-Ll in the manufacture of a medicament for treating cancer; wherein treating comprises the steps of;

monitoring the efficacy of the antibody; and

if the antibody is not efficacious,

evaluating a biological sample that has been obtained from the patient for a presence of one or more FGFR variants; and

wherein the medicament is to be administered with an FGFR inhibitor if the one or more FGFR variants are present in the sample.

15. The use of claim 14, wherein the evaluating step further comprises measuring an expression level of PD-Ll in a biological sample and wherein the second administering step comprises administering the FGFR inhibitor if the expression level of PD-Ll is low.

16. The use of claim 15, wherein the biological sample for the one or more FGFR variants and the PD-Ll is the same biological sample.

17. The use of claim 15, wherein the biological sample for the one or more FGFR variants is different from the biological sample for PD-Ll expression.

18. The use of claim 16 or 17, wherein the biological sample is blood, lymph fluid, bone marrow, a solid tumor sample, or any combination thereof.

19. The use of any one of claims 16-18, wherein the cancer is lung cancer, bladder cancer, gastric cancer, breast cancer, ovarian cancer, head and neck cancer, esophageal cancer, glioblastoma, or any combination thereof.

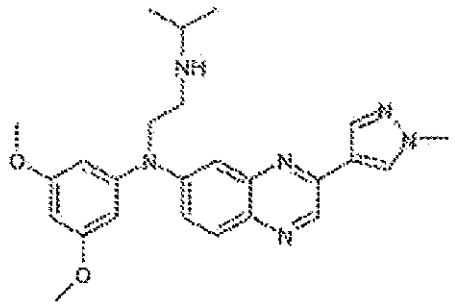
20. The use of claim 19, wherein the lung cancer is non-small cell lung cancer (NSCLC) adenocarcinoma, NSCLC squamous cell carcinoma, small cell lung cancer, or any combination thereof.

21. The use of any one of claims 16-20, wherein the one or more FGFR variants comprise an FGFR mutation, an FGFR amplification, an FGFR fusion gene, or a combination thereof.

22. The use of claim 21, wherein the FGFR fusion gene is FGFR2:AFF3; FGFR2:BICC1; FGFR2:CASP7; FGFR2:CCDC6; FGFR2:OFDl; FGFR3:BAIAP2L1; FGFR3:TACC3-Intron; FGFR3:TACC3V1; FGFR3:TACC3V3; or a combination thereof.

23. The use of any one of claims 16-22, wherein the antibody that blocks an interaction between PD-1 and PD-Ll is an anti-PD-1 antibody, an anti-PD-Ll antibody, or a combination thereof.

24. The use of any one of claims 16-23, wherein the FGFR inhibitor is the compound of formula (I):



(I)

or a pharmaceutically acceptable salt thereof.

25. A combination of an antibody that blocks the interaction between PD-1 and PD-L1 and an FGFR inhibitor for use in the treatment of cancer in a patient wherein one or more FGFR variants are present in a biological sample from the patient.

26. The combination for use of claim 25, further comprising evaluating the presence of one or more FGFR variants in the biological sample before the use step.

27. The combination for use of claim 25 or 26, further comprising evaluating PD-L1 expression in a biological sample that has been obtained from the patient.

28. The combination for use of claim 27, wherein the biological sample for the one or more FGFR variants and the PD-L1 is the same biological sample.

29. The combination for use of claim 27, wherein the biological sample for the one or more FGFR variants is different from the biological sample for PD-L1 expression.

30. The combination for use of any one of claims 25 to 29, wherein the biological sample is blood, lymph fluid, bone marrow, a solid tumor sample, or any combination thereof.

31. The combination for use of any one of claims 25 to 30, wherein the use step is performed if PD-L 1 expression is low in the biological sample.

32. The combination for use of any one of claims 25 to 31, wherein the cancer is lung cancer, bladder cancer, gastric cancer, breast cancer, ovarian cancer, head and neck cancer, esophageal cancer, glioblastoma, or any combination thereof.

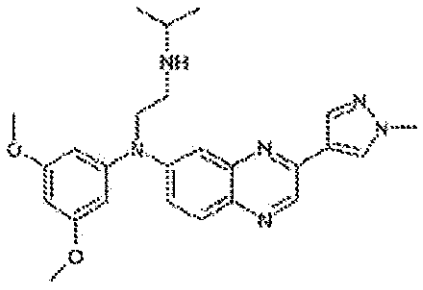
33. The combination for use of claim 32, wherein the lung cancer is non-small cell lung cancer (NSCLC) adenocarcinoma, NSCLC squamous cell carcinoma, small cell lung cancer, or any combination thereof.

34. The combination for use of any one of claims 25 to 33, wherein the one or more FGFR variants comprise an FGFR mutation, an FGFR amplification, an FGFR fusion gene, or a combination thereof.

35. The combination for use of claim 34, wherein the FGFR fusion gene is FGFR2:AFF3; FGFR2:BICC1; FGFR2:CASP7; FGFR2:CCDC6; FGFR2:OFD1; FGFR3:BAIAP2L1; FGFR3:TACC3-Intron; FGFR3:TACC3V1; FGFR3:TACC3V3; or a combination thereof.

36. The combination for use of any one of claims 25 to 35, wherein the antibody that blocks the interaction between PD-1 and PD-L1 is an anti-PD-1 antibody, an anti -PD-L1 antibody, or a combination thereof.

37. The combination for use of any one of claims 25 to 36, wherein the FGFR inhibitor is the compound of formula (I):



(I)

or a pharmaceutically acceptable salt thereof.

38. A combination of an antibody that blocks the interaction between PD-1 and PD-L1 and an FGFR inhibitor for use in the treatment of cancer in a patient, wherein the treatment of cancer comprises

administration of a pharmaceutically effective amount of the antibody that blocks the interaction between PD-1 and PD-L1;

monitoring the efficacy of the antibody; and

if the antibody is not efficacious,

evaluating a biological sample from the patient for a presence of one or more FGFR variants, followed by administration to the patient a pharmaceutically effective amount of an FGFR inhibitor if the one or more FGFR variants are present in the sample.

39. The combination for use of claim 38, wherein the evaluating step further comprises measuring an expression level of PD-Ll in a biological sample and wherein the second administering step comprises administering the FGFR inhibitor if the expression level of PD-Ll is low.

40. The combination for use of claim 39, wherein the biological sample for the one or more FGFR variants and the PD-Ll is the same biological sample.

41. The combination for use of claim 39, wherein the biological sample for the one or more FGFR variants is different from the biological sample for PD-Ll expression.

42. The combination for use of claim 40 or 41, wherein the biological sample is blood, lymph fluid, bone marrow, a solid tumor sample, or any combination thereof.

43. The combination for use of any one of claims 40 to 42, wherein the cancer is lung cancer, bladder cancer, gastric cancer, breast cancer, ovarian cancer, head and neck cancer, esophageal cancer, glioblastoma, or any combination thereof.

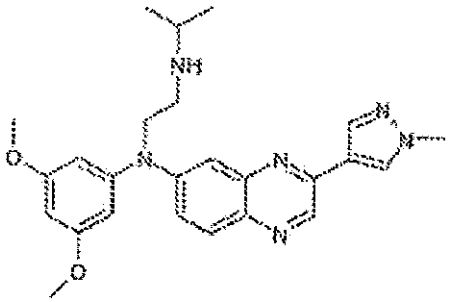
44. The combination for use of claim 43, wherein the lung cancer is non-small cell lung cancer (NSCLC) adenocarcinoma, NSCLC squamous cell carcinoma, small cell lung cancer, or any combination thereof.

45. The combination for use of any one of claims 40 to 44, wherein the one or more FGFR variants comprise an FGFR mutation, an FGFR amplification, an FGFR fusion gene, or a combination thereof.

46. The combination for use of claim 45, wherein the FGFR fusion gene is FGFR2:AFF3; FGFR2:BICC1; FGFR2:CASP7; FGFR2:CCDC6; FGFR2:OFDl; FGFR3:BAlAP2L1; FGFR3:TACC3-Intron; FGFR3:TACC3V1; FGFR3:TACC3V3; or a combination thereof.

47. The combination for use of any one of claims 40 to 46, wherein the antibody that blocks an interaction between PD-1 and PD-Ll is an anti-PD-1 antibody, an anti-PD-Ll antibody, or a combination thereof.

48. The combination for use of any one of claims 40 to 47, wherein the FGFR inhibitor is the compound of formula (I):



(I)

or a pharmaceutically acceptable salt thereof.