CLAIMS

1. A combination for use in treating a cancer in a human patient, comprising:

(a) an anti-KIR antibody comprising the CDR1, CDR2 and CDR3 domains in a heavy chain variable region having the sequence set forth in SEQ ID NO:3, and the CDR1, CDR2 and CDR3 domains in a light chain variable region having the sequence set forth in SEQ ID NO:5,

and

(b) an anti-PD-1 antibody comprising the CDR1, CDR2 and CDR3 domains in a heavy chain variable region having the sequence set forth in SEQ ID NO:19, and the CDR1, CDR2 and CDR3 domains in a light chain variable region having the sequence set forth in SEQ ID NO:21, characterized in that an effective amount of said combination is to be administered to the patient for

at least one administration cycle, wherein the cycle is a period of eight weeks, wherein for each of the at least one cycles, two doses of the anti-KIR antibody are to be administered at a dose of 0.1, 0.3, 1, 3, 6, or 10 mg/kg and four doses of the anti-PD-1 antibody are to be administered at a dose of 3 mg/kg.

2. The combination for the use of claim 1, characterized in that the anti-KIR antibody and anti-PD-1 antibody are administered at the following doses:

(a) 0.1 mg/kg anti-KIR antibody and 3 mg/kg of anti-PD-1 antibody;

(b) 0.3 mg/kg anti-KIR antibody and 3 mg/kg of anti-PD-1 antibody;

(c) 1 mg/kg anti-KIR antibody and 3 mg/kg of anti-PD-1 antibody; or

(d) 3 mg/kg anti-KIR antibody and 3 mg/kg of anti-PD-1 antibody;

3. The combination for the use of claim 1 or 2, wherein the anti-PD-1 and anti-KIR antibodies are formulated for intravenous administration.

4. The combination for the use of any one of claims 1-3, characterized in that the treatment consists of up to 12 cycles.

5. The combination for the use of any one of the claims 1-4, characterized in that the anti-PD-1 antibody is to be administered on Days 1, 15, 29, and 43 of each cycle.

6. The combination for the use of any one of the claims 1-5, characterized in that the anti-KIR antibody is to be administered on Days 1 and 29 of each cycle.

7. The combination for the use of claim 6, characterized in that the anti-PD-1 antibody is to be administered prior to administration of the anti-KIR antibody on Days 1 and 29.

8. The combination for the use in claim 7, characterized in that the anti-KIR antibody is to be administered within 30 minutes of the anti-PD-1 antibody.

9. The combination for the use of any one of claims 1-8, characterized in that the treatment produces at least one therapeutic effect chosen from a reduction in size of a tumor, reduction in number of metastatic lesions over time, complete response, partial response, and stable disease.

10. The combination for the use of any one of claims 1-9, wherein the cancer is a solid tumor.

11. The combination for the use of claim 10, wherein the solid tumor is an advanced refractory solid tumor.

12. The combination for the use of claim 10, wherein the solid tumor is chosen from non-small cell lung cancer (NSCLC), renal cell carcinoma (RCC), melanoma, colorectal cancer, serous ovarian carcinoma, bladder cancer and cancer of the head and neck.

13. The combination for the use of claim 10, wherein the cancer is cancer of the head and neck.

14. The combination for the use of any one of claims 1-13, wherein the cancer is a hematological malignancy.

15. The combination for the use of claim 14, wherein the hematological malignancy is chosen from multiple myeloma, Hodgkin lymphoma, follicular lymphoma, diffuse large B-cell lymphoma and T-cell lymphoma.

16. The combination for the use of any one of claims 1-15, wherein the anti-KIR antibody comprises

(a) a heavy chain variable region CDR1 having the sequence set forth in SEQ ID NO:7;

(b) a heavy chain variable region CDR2 having the sequence set forth in SEQ ID NO:8;

(c) a heavy chain variable region CDR3 having the sequence set forth in SEQ ID NO:9;

(d) a light chain variable region CDR1 having the sequence set forth in SEQ ID NO:10;

(e) a light chain variable region CDR2 having the sequence set forth in SEQ ID NO:11; and

(f) a light chain variable region CDR3 having the sequence set forth in SEQ ID NO:12.

17. The combination for the use of any one of claims 1-16, wherein the anti-KIR antibody comprises heavy and light chain variable regions having the sequences set forth in SEQ ID NOs:3 and 5, respectively.

18. The combination for the use of any one of claims 1-17, wherein the anti-KIR antibody comprises heavy and light chains having the sequences set forth in SEQ ID NOs:1 and 2, respectively.

19. The combination for the use of any one of claims 1-18, wherein the anti-PD-1 antibody comprises

(a) a heavy chain variable region CDR1 having the sequence set forth in SEQ ID NO:23;

(b) a heavy chain variable region CDR2 having the sequence set forth in SEQ ID NO:24;

(c) a heavy chain variable region CDR3 having the sequence set forth in SEQ ID NO:25;

(d) a light chain variable region CDR1 having the sequence set forth in SEQ ID NO:26;

(e) a light chain variable region CDR2 having the sequence set forth in SEQ ID NO:27; and

(f) a light chain variable region CDR3 having the sequence set forth in SEQ ID NO:28.

20. The combination of for the use any one of claims 1-19, wherein the anti-PD-1 antibody comprises heavy and light chain variable regions having the sequences set forth in SEQ ID NOs:19 and 21, respectively.

21. The combination for the use of any one of claims 1-20, wherein the anti-PD-1 antibody comprises heavy and light chains having the sequences as set forth in SEQ ID NOs:17 and 18, respectively.

22. The combination for the use of any one of claims 1-21, characterized in that the anti-KIR and anti-PD-1 antibodies are to be simultaneously administered in a single formulation.

23. The combination for the use of any one of claims 1-22, characterized in that the anti-KIR and anti-PD-1 antibodies are formulated for separate administration.

24. The combination for the use of claim 23, characterized in that the anti-KIR and anti-PD-1 antibodies are to be administered concurrently.

25. The combination for the use of claim 23, characterized in that the anti-KIR and anti-PD-1 antibodies are to be administered sequentially.

26. The combination for the use of claim 25, characterized in that the anti-PD-1 antibody is to be administered first followed by administration of the anti-KIR antibody.

27. The combination for the use of claim 25, characterized in that the anti-KIR antibody is to be administered first followed by administration of the anti-PD-1 antibody.

28. A kit for use in treating a cancer in a human patient, the kit comprising:

(a) a dose of an anti-KIR antibody comprising the CDR1, CDR2 and CDR3 domains in a heavy chain variable region having the sequence set forth in SEQ ID NO:3, and the CDR1, CDR2 and CDR3 domains in a light chain variable region having the sequence set forth in SEQ ID NO:5;

(b) a dose of an anti-PD-1 antibody comprising the CDR1, CDR2 and CDR3 domains in a heavy chain variable region having the sequence set forth in SEQ ID NO:19, and the CDR1, CDR2 and CDR3 domains in a light chain variable region having the sequence set forth in SEQ ID NO:21; and

(c) instructions for using the anti-KIR antibody and anti-PD-1 antibody in the combination of any one of claims 1-27.

29. Use of a combination of an anti-KIR antibody and an anti-PD-1 antibody in the preparation of a medicament for treating a cancer in a human patient, wherein:

(a) the anti-KIR antibody comprises the CDR1, CDR2 and CDR3 domains in a heavy chain variable region having the sequence set forth in SEQ ID NO:3, and the CDR1, CDR2 and CDR3 domains in a light chain variable region having the sequence set forth in SEQ ID NO:5,

and

(b) the anti-PD-1 antibody comprises the CDR1, CDR2 and CDR3 domains in a heavy chain variable region having the sequence set forth in SEQ ID NO:19, and the CDR1, CDR2 and CDR3 domains in a light chain variable region having the sequence set forth in SEQ ID NO:21, characterized in that an effective amount of said combination is to be administered to the patient for

at least one administration cycle, wherein the cycle is a period of eight weeks, wherein for each of the at least one cycles, two doses of the anti-KIR antibody are to be administered at a dose of 0.1, 0.3, 1, 3, 6, or 10 mg/kg and four doses of the anti-PD-1 antibody are to be administered at a dose of 3 mg/kg.

30. The use of claim 29, wherein the anti-KIR antibody and anti-PD-1 antibody are to be administered at the following doses:

(a) 0.1 mg/kg anti-KIR antibody and 3 mg/kg of anti-PD-1 antibody;

(b) 0.3 mg/kg anti-KIR antibody and 3 mg/kg of anti-PD-1 antibody;

(c) 1 mg/kg anti-KIR antibody and 3 mg/kg of anti-PD-1 antibody; or

(d) 3 mg/kg anti-KIR antibody and 3 mg/kg of anti-PD-1 antibody;

31. The use of claim 29 or 30, wherein the anti-PD-1 and anti-KIR antibodies are formulated for intravenous administration.

32. The use of any one of claims 29-21, wherein the treatment consists of up to 12 cycles.

33. The use of any one of the claims 29-32, wherein the anti-PD-1 antibody is to be administered on Days 1, 15, 29, and 43 of each cycle.

34. The use of any one of the claims 29-33, wherein the anti-KIR antibody is to be administered on Days 1 and 29 of each cycle.

35. The use of claim 34, wherein the anti-PD-1 antibody is to be administered prior to administration of the anti-KIR antibody on Days 1 and 29.

36. The use of claim 35, characterized in that the anti-KIR antibody is to be administered within 30 minutes of the anti-PD-1 antibody.

37. The use of any one of claims 29-36, characterized in that the treatment produces at least one therapeutic effect chosen from a reduction in size of a tumor, reduction in number of metastatic lesions over time, complete response, partial response, and stable disease.

38. The use of any one of claims 29-37, wherein the cancer is a solid tumor.

39. The use of claim 38, wherein the solid tumor is an advanced refractory solid tumor.

40. The use of claim 38, wherein the solid tumor is chosen from non-small cell lung cancer (NSCLC), renal cell carcinoma (RCC), melanoma, colorectal cancer, serous ovarian carcinoma, bladder cancer and cancer of the head and neck.

41. The use of claim 38, wherein the cancer is cancer of the head and neck.

42. The use of any one of claims 29-41, wherein the cancer is a hematological malignancy.

43. The use of claim 42, wherein the hematological malignancy is chosen from multiple myeloma, Hodgkin lymphoma, follicular lymphoma, diffuse large B-cell lymphoma and T-cell lymphoma.

44. The use of any one of claims 29-43, wherein the anti-KIR antibody comprises

(a) a heavy chain variable region CDR1 having the sequence set forth in SEQ ID NO:7;

(b) a heavy chain variable region CDR2 having the sequence set forth in SEQ ID NO:8;

(c) a heavy chain variable region CDR3 having the sequence set forth in SEQ ID NO:9;

(d) a light chain variable region CDR1 having the sequence set forth in SEQ ID NO:10;

(e) a light chain variable region CDR2 having the sequence set forth in SEQ ID NO:11; and

(f) a light chain variable region CDR3 having the sequence set forth in SEQ ID NO:12.

45. The use of any one of claims 29-44, wherein the anti-KIR antibody comprises heavy and light chain variable regions having the sequences set forth in SEQ ID NOs:3 and 5, respectively.

46. The use of any one of claims 29-45, wherein the anti-KIR antibody comprises heavy and light chains having the sequences set forth in SEQ ID NOs:1 and 2, respectively.

47. The use of any one of claims 29-46, wherein the anti-PD-1 antibody comprises

(a) a heavy chain variable region CDR1 having the sequence set forth in SEQ ID NO:23;

(b) a heavy chain variable region CDR2 having the sequence set forth in SEQ ID NO:24;

(c) a heavy chain variable region CDR3 having the sequence set forth in SEQ ID NO:25;

(d) a light chain variable region CDR1 having the sequence set forth in SEQ ID NO:26;

(e) a light chain variable region CDR2 having the sequence set forth in SEQ ID NO:27; and

(f) a light chain variable region CDR3 having the sequence set forth in SEQ ID NO:28.

48. The use of any one of claims 29-47, wherein the anti-PD-1 antibody comprises heavy and light chain variable regions having the sequences set forth in SEQ ID NOs:19 and 21, respectively.

49. The use of any one of claims 29-48, wherein the anti-PD-1 antibody comprises heavy and light chains having the sequences as set forth in SEQ ID NOs:17 and 18, respectively.

50. The use of any one of claims 29-49, wherein the anti-KIR and anti-PD-1 antibodies are to be simultaneously administered in a single formulation.

51. The use of any one of claims 29-50, wherein the anti-KIR and anti-PD-1 antibodies are formulated for separate administration.

52. The use of claim 51, wherein the anti-KIR and anti-PD-1 antibodies are to be administered concurrently.

53. The use of claim 51, wherein the anti-KIR and anti-PD-1 antibodies are to be administered sequentially.

54. The use of claim 53, wherein the anti-PD-1 antibody is to be administered first followed by administration of the anti-KIR antibody.

55. The use of claim 53, wherein the anti-KIR antibody is to be administered first followed by administration of the anti-PD-1 antibody.

56. Use of a composition in preparation of a medicament, the composition comprising an anti-KIR antibody comprising the CDR1, CDR2 and CDR3 domains in a heavy chain variable region having the sequence set forth in SEQ ID NO:3, and the CDR1, CDR2 and CDR3 domains in a light chain variable region having the sequence set forth in SEQ ID NO:5, characterized in that the composition is to be co-administered to a cancer patient together with an anti-PD-1 antibody comprising the CDR1, CDR2 and CDR3 domains in a heavy chain variable region having the sequence set forth in SEQ ID NO:19, and the CDR1, CDR2 and CDR3 domains in a light chain variable region having the sequence set forth in SEQ ID NO:21, in at least one cycle, wherein two doses of the anti-KIR antibody are to be administered at a dose of 0.1, 0.3, 1, 3, 6, or 10 mg/kg and four doses of the anti-PD-1 antibody are to be administered at a dose of 3 mg/kg in each cycle.