Compositions and Methods for Inducing an Immune Response

CLAIMS

1. A composition for inducing a T cell mediated immune response for the treatment or prevention of prostate cancer comprising a modified Vaccinia virus Ankara (MVA) vector expressing the 5T4 antigen polypeptide under control of a poxvirus F11 promoter.

2. The composition according to claim 1, wherein the poxvirus F11 promoter is the endogenous MVA F11 promoter.

3. The composition according to claim 1 or claim 2, wherein the vector expresses a polypeptide having the amino acid sequence of SEQ ID NO:1.

4. The composition according to claim 1 or claim 2, wherein the vector expresses a polypeptide encoded by a polynucleotide having the nucleic acid sequence of SEQ ID NO:2.

5. The composition according to any previous claim further comprising an adjuvant.

6. A composition according to any previous claim for use in the induction of a T cell-mediated immune response against the 5T4 antigen polypeptide.

7. A composition for use according to claim 6, wherein the T cell-mediated immune response comprises a CD8+ T cell response.

8. A composition according to any one of claims 1 to 6 for use in the treatment or prevention of prostate cancer.

9. A method for inducing a T cell mediated immune response against the 5T4 antigen polypeptide in a subject, said method comprising administering to said subject a composition according to any one of claims 1 to 6.

10. A method according to claim 9, wherein the composition is administered in a dose of between 1 x 10^6 and 5 x 10^8 plaque forming units (pfu).

11. A method according to claim 10, wherein the composition is administered in a dose of 1 x 10^7 pfu.

12. A method according to any one of claims 9 to 11, wherein the T cell-mediated immune response comprises a $CD8^+$ T cell response.

13. A method according to any one of claims 9 to 12, wherein said administration is carried out as part of a prime-boost vaccination protocol.

14. A method according to claim 13, wherein said administration is provided as the boost to a previous prime vaccination.

15. A method according to claim 14, wherein the previous prime vaccination is provided by administering an adenovirus expressing the 5T4 antigen polypeptide.

16. A method according to claim 15, wherein the adenovirus is ChAdOx1.

17. A method according to claim 15 or claim 16, wherein the adenovirus is administered in a dose of between 1 x 10^8 and 1 x 10^{12} virus particles (VP).

18. A method according to claim 17, wherein the adenovirus is administered in a dose of between 1 x 10^9 and 1 x 10^{11} VP.

19. A method according to claim 18, wherein the adenovirus is administered in a dose of 1 x 10^{10} VP.

20. A method for inducing a T cell mediated immune response for the treatment or prevention of prostate cancer in a subject, said method comprising administering to said subject a composition according to any one of claims 1 to 6.

21. A method according to claim 20, wherein the composition is administered in a dose of between 1 x 10^{6} and 5 x 10^{8} plaque forming units (pfu).

22. A method according to claim 21, wherein the composition is administered in a dose of 1 x 10^{7} pfu.

23. A method according to any one of claims 20 to 22, wherein the T cell-mediated immune response comprises a $CD8^{+}$ T cell response.

24. A method according to any one of claims 20 to 23, wherein said administration is carried out as part of a prime-boost vaccination protocol.

25. A method according to claim 24, wherein said administration is provided as the boost to a previous prime vaccination.

26. A method according to claim 25, wherein the previous prime vaccination is provided by administering an adenovirus expressing the 5T4 antigen polypeptide.

27. A method according to claim 26, wherein the adenovirus is ChAdOx1.

28. A method according to claim 26 or claim 27, wherein the adenovirus is administered in a dose of between 1 x 10^{8} and 1 x 10^{12} VP.

29. A method according to claim 28, wherein the adenovirus is administered in a dose of between 1 x 10^9 and 1 x 10^{11} VP.

30. A method according to claim 29, wherein the adenovirus is administered in a dose of 1 x 10^{10} VP.

31. A method according to any one of claims 20 to 30 further comprising the step of administering an immune checkpoint inhibitor compound.

32. A method according to claim 31, wherein the immune checkpoint inhibitor compound is an anti-PD1 monoclonal antibody.