Claims

1. Use of an agent for the preparation of a pharmaceutical composition for treating a tumor disease characterized by an increased expression of a tumor antigen, wherein said agent is:

(i) a peptide comprising the amino acid sequence of a tumor antigen or of a tumor antigen peptide,

(ii) a nucleic acid which codes for a peptide comprising the amino acid sequence of a tumor antigen or of a tumor antigen peptide,

(iii) a host cell which codes for a peptide comprising the amino acid sequence of a tumor antigen or of a tumor antigen peptide,

(iv) a virus which codes for a peptide comprising the amino acid sequence of a tumor antigen or of a tumor antigen peptide,

(v) a cell presenting a peptide comprising the amino acid sequence of a tumor antigen peptide,

(vi) an antibody or T cell receptor which binds specifically to a peptide comprising the amino acid sequence of a tumor antigen or of a tumor antigen peptide,

(vii) an immunoreactive cell sensitized in vitro to recognize a peptide comprising the amino acid sequence of a tumor antigen or of a tumor antigen peptide, or

(viii) an effector cell or stem cell transduced with a nucleic acid encoding a T cell receptor that recognizes a peptide comprising the amino acid sequence of a tumor antigen or of a tumor antigen peptide,

wherein said tumor antigen comprises an amino acid sequence encoded by a nucleic acid which comprises the nucleic acid sequence according to SEQ ID NO: 1 of the sequence listing and said tumor antigen peptide comprises at least 6 consecutive amino acids of the tumor antigen, wherein said tumor disease is gastric cancer, breast cancer, hepatic cancer, pancreatic cancer, skin cancer, malignant melanoma, head and neck cancer, sarcoma, bile duct cancer, cancer of the urinary bladder, kidney cancer, colon cancer, small bowel cancer, testicular embryonal carcinoma, placental choriocarcinoma, cervical cancer, or a metastatic form thereof.

2. The use as claimed in claim 1, wherein the peptide is a MHC class I or class II presented peptide or can be processed to produce an MHC class I or class II presented peptide.

3. The use as claimed in claim 1, wherein the host cell expresses an MHC molecule which binds to the encoded peptide or a procession product thereof.

4. The use as claimed in claim 1, wherein the antibody is a monoclonal, chimeric, or human antibody, or is an antigen-binding fragment of an antibody.

5. The use as claimed in any one of claims 1 to 4, wherein the pharmaceutical composition is formulated as a tumor vaccine.

6. A method for detecting circulating tumor cells characterized by an increased expression of a tumor antigen in a patient comprising the detection of and/or determination of the quantity of (i) a nucleic acid which codes for a peptide comprising the amino acid sequence of a tumor antigen, and/or (ii) a peptide comprising the amino acid sequence of a tumor antigen, in a biological sample containing or suspected of containing disseminating or circulating tumor cells or metastatic tumor cells isolated from said patient,

wherein said tumor antigen comprises an amino acid sequence encoded by a nucleic acid which comprises the nucleic acid sequence according to SEQ ID NO: 1 of the sequence listing; and

wherein the detection and/or determination of the quantity comprises:

(a) contacting the biological sample with an agent which binds specifically to the nucleic acid or the peptide which is to be detected and/or the quantity of which is to be determined, and

(b) detecting the formation of and/or determining the quantity of a complex between the agent and the nucleic acid or the peptide which is to be detected or the quantity of which is to be determined,

wherein said circulating tumor cells are from a gastric cancer, breast cancer, hepatic cancer, pancreatic cancer, skin cancer, malignant melanoma, head and neck cancer, sarcoma, bile duct cancer, cancer of the urinary bladder, kidney cancer, colon cancer, small bowel cancer, testicular embryonal carcinoma, placental choriocarcinoma, cervical cancer, or a metastatic form thereof.

7. The method as claimed in claim 6, wherein (i) the agent which binds specifically to the nucleic acid comprises an oligonucleotide, which hybridizes specifically to said nucleic acid, and

(ii) the agent which binds specifically to the peptide comprises an antibody binding specifically to said peptide.

8. The method as claimed in claim 7, wherein the agent further comprises a detectable label.

9. The method as claimed in any one of claims 6 to 8, wherein the tumor antigen comprises the amino acid sequence according to SEQ ID NO: 2 of the sequence listing.

10. The method as claimed in any one of claims 6 to 9, wherein the skin cancer is basal cell carcinoma or squamous cell carcinoma.

11. The use as claimed in any one of claims 1 to 5, wherein the tumor antigen comprises the amino acid sequence according to SEQ ID NO: 2 of the sequence listing.

12. The use as claimed in any one of claims 1 to 5 or the method as claimed in claim 9, wherein the skin cancer is basal cell carcinoma or squamous cell carcinoma.

13. The use as claimed in any one of claims 1 to 5 and 11 to 12 or the method as claimed in any one of claims 6 to 10, wherein the head and neck cancer is malignant pleomorphic adenoma.

14. The use as claimed in any one of claims 1 to 5 and 11 to 12 or method as claimed in any one of claims 6 to 10, wherein the sarcoma is synovial sarcoma or carcinosarcoma.

15. The use as claimed in any one of claims 1 to 5 and 11 to 12 or method as claimed in any one of claims 6 to 10, wherein the cancer of the urinary bladder is transitional cell carcinoma or papillary carcinoma.

16. The use as claimed in any one of claims 1 to 5 and 11 to 12 or method as claimed in any one of claims 6 to 10, wherein the kidney cancer is renal cell carcinoma.

17. The use or method as claimed in claim 16, wherein the renal cell carcinoma is clear cell

renal cell carcinoma or papillary renal cell carcinoma.

18. The use as claimed in any one of claims 1 to 5 and 11 to 12 or the method as claimed in any one of claims 6 to 10, wherein the small bowel cancer is cancer of the ileum.

19. The use as claimed in any one of claims 1 to 5 and 11 to 12 or method as claimed in any one of claims 6 to 10, wherein the small bowel cancer is small bowel adenocarcinoma or adenocarcinoma of the ileum.

20. An effector cell transduced with a nucleic acid encoding a T cell receptor that recognizes a peptide comprising the amino acid sequence of a tumor antigen,

wherein said tumor antigen comprises an amino acid sequence encoded by a nucleic acid which comprises the nucleic acid sequence according to SEQ ID NO: 1 of the sequence listing and said tumor antigen peptide comprises at least 6 consecutive amino acids of the tumor antigen.