

CLAIMS

1. A peptide comprising

an amino acid sequence selected from the group consisting of SEQ ID No. 1 to SEQ ID No. 383 and SEQ ID No. 448 to SEQ ID No. 499,

or a pharmaceutically acceptable salt thereof

wherein said peptide is up to 16 amino acids in length.

2. The peptide according to claim 1, wherein said peptide has the ability to bind to an MHC class-I or -II molecule, and wherein said peptide, when bound to said MHC, is capable of being recognized by CD4 and/or CD8 T cells.

3. The peptide according to any one of claims 1 to 2, wherein said peptide is modified and/or includes non-peptide bonds.

4. An antibody, in particular a soluble or membrane-bound antibody, preferably a monoclonal antibody or fragment thereof, that specifically recognizes the peptide according to any one of claims 1 to 3, or the peptide according to any one of claims 1 to 3 when bound to an MHC molecule.

5. A T-cell receptor, preferably soluble or membrane-bound, or a fragment thereof, that is reactive with the peptide according to any one of claims 1 to 3, or the peptide according to any one of claims 1 to 3 when bound to an MHC molecule.

6. The T-cell receptor according to claim 5, wherein said ligand amino acid sequence comprises any one of SEQ ID No. 1 to SEQ ID No. 383 and SEQ ID No. 448 to SEQ ID No. 499.

7. The T-cell receptor according to any one of claims 5 to 6, wherein said T-cell receptor is provided as a soluble molecule and optionally carries a further effector function such as an immune stimulating domain or toxin.

8. A recombinant host cell comprising the peptide according to any one of claims 1 to 3, the antibody or fragment thereof according to claim 4, the T-cell receptor or fragment thereof according to any one of claims 5 to 7, wherein said host cell preferably is selected from an antigen presenting cell, such as a dendritic cell, a T cell or an NK cell.
9. An *in vitro* method for producing activated T lymphocytes, the method comprising contacting in vitro T cells with antigen loaded human class I or II MHC molecules expressed on the surface of a suitable antigen-presenting cell or an artificial construct mimicking an antigen-presenting cell for a period of time sufficient to activate said T cells in an antigen specific manner, wherein said antigen is a peptide according to any one of claims 1 to 3
10. An activated T lymphocyte, produced by the method according to claim 9, that selectively recognizes a cell which presents a polypeptide comprising an amino acid sequence given in any one of claims 1 to 3.
11. A pharmaceutical composition comprising at least one active ingredient selected from the group consisting of the peptide according to any one of claims 1 to 3, the antibody or fragment thereof according to claim 4, the T-cell receptor or fragment thereof according to any one of claims 5 to 7, the host cell according to claim 8, or the activated T lymphocyte according to claim 10, or a conjugated or labelled active ingredient, and a pharmaceutically acceptable carrier, and optionally, pharmaceutically acceptable excipients and/or stabilizers.
12. A method for producing the peptide according to any one of claims 1 to 3, the antibody or fragment thereof according to claim 4, or the T-cell receptor or fragment thereof according to any one of claims 5 to 7, the method comprising culturing the host cell according to claim 8, and isolating the peptide, the antibody or fragment thereof or the T cell receptor or fragment thereof from said host cell and/or its culture medium.
13. The peptide according to any one of claims 1 to 3, the antibody or fragment thereof according to claim 4, the T-cell receptor or fragment thereof according to any one of claims 5 to 7, the host cell according to claim 8, or the activated T lymphocyte according to claim 10 for use in the manufacture of a medicament for treatment of cancer.

14. The peptide according to claim 13, wherein said cancer is selected from the group of acute myeloid leukaemia, breast cancer, cholangiocellular carcinoma, chronic lymphocytic leukaemia, colorectal cancer, gallbladder cancer, glioblastoma, gastric cancer, hepatocellular carcinoma, head and neck squamous cell carcinoma, melanoma, non-Hodgkin lymphoma, lung cancer (including non-small cell lung cancer adenocarcinoma, squamous cell non-small cell lung cancer, and small cell lung cancer), ovarian cancer, esophageal cancer, pancreatic cancer, prostate cancer, renal cell carcinoma, urinary bladder carcinoma, uterine and endometrial cancer.

15. A kit comprising:

- a) a container comprising a container comprising the pharmaceutical composition of claim 11, in solution or in lyophilized form;
- b) optionally, a second container containing a diluent or reconstituting solution for the lyophilized formulation;
- c) optionally, at least one more peptide selected from the group consisting of SEQ ID NO: 1 to SEQ ID NO: 249 and SEQ ID NO: 252 to SEQ ID NO: 272.

16. The kit according to claim 15, further comprising one or more of i) a buffer, ii) a diluent, iii) a filter, iv) a needle, or v) a syringe.