

CLAIMS

1. A isolated peptide comprising an amino acid sequence of SEQ ID No. 12, or a pharmaceutical acceptable salt thereof, wherein said peptide has an overall length of from 8 to 30, more preferred from 8 to 16 amino acids, and most preferred wherein the peptide consists of an amino acid sequence according to SEQ ID No. 12.
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 of claims 1 to 2, wherein said peptide is modified and/or includes non-peptide bonds.
4. A fusion protein, comprising N-terminal amino acids of the HLADR antigen-associated invariant chain (Ii), and the peptide according to any of claims 1 to 3.
5. An antibody, in particular a soluble or membrane-bound antibody, preferably a monoclonal antibody or fragment thereof, that specifically recognizes SEQ ID No. 12 of the peptide according to any of claims 1 to 4, preferably the peptide according to any of claims 1 to 4 when bound to an MHC molecule.
6. A T-cell receptor, preferably soluble or membrane-bound, or a fragment thereof, that is reactive with SEQ ID No. 12 of an HLA ligand, wherein said ligand is the peptide according to any of claims 1 to 4, preferably the peptide according to any of claims 1 to 4 when bound to an MHC molecule.
7. The T-cell receptor according to claim 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 nucleic acid, encoding for a peptide according to any one of claims 1 to 4, an antibody or fragment thereof according to claim 5, a T-cell receptor or fragment thereof according to claim 6, optionally linked to a heterologous promoter sequence, or an expression vector expressing said nucleic acid.

9. A recombinant host cell comprising the peptide according to any one of claims 1 to 4, the antibody or fragment thereof according to claim 5, the T-cell receptor or fragment thereof according to claim 6 or the nucleic acid or the expression vector according to claim 8, wherein said host cell preferably is selected from an antigen presenting cell, such as a dendritic cell, a T cell or an NK cell.
10. An *in vitro* method for producing activated T lymphocytes, the method comprising contacting *in vitro* T cells with antigen loaded human class I or I I 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 4.
11. An activated T lymphocyte, produced by the method according to claim 10, that selectively recognizes SEQ ID No. 12 of a cell which presents a polypeptide comprising an amino acid sequence given in any one of claims 1 to 4.
12. 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 4, the antibody or fragment thereof according to claim 5, the T-cell receptor or fragment thereof according to claim 6, the nucleic acid or the expression vector according to claim 8, the host cell according to claim 9, or the activated T lymphocyte according to claim 11, or a conjugated or labelled active ingredient, and a pharmaceutically acceptable carrier, and optionally, pharmaceutically acceptable excipients and/or stabilizers.
13. A method for producing the peptide according to any of claims 1 to 4, the antibody or fragment thereof according to claim 5, or the T-cell receptor or fragment thereof according to claim 6, the method comprising culturing the host cell according to claim 9, 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.
14. The peptide according to any one of claims 1 to 4, the antibody or fragment thereof according to claim 5, the T-cell receptor or fragment thereof according to claim 6, the nucleic acid or the expression vector according to claim 8, the host cell according to claim 9, or the activated T lymphocyte according to claim 11 for use in medicine.

15. Use of an effective number of activated T lymphocytes as defined in claim 11 in the manufacture of a medicament for the treatment of cancer, wherein the medicament is for killing target cells in a patient, and wherein the target cells present a polypeptide comprising an amino acid sequence given in any one of claims 1 to 4.
16. The peptide according to any one of claims 1 to 4, the antibody or fragment thereof according to claim 5, the T-cell receptor or fragment thereof according to claim 6, the nucleic acid or the expression vector according to claim 8, the host cell according to claim 9, or the activated T lymphocyte according to claim 11 for use in diagnosis and/or treatment of cancer, or for use in the manufacture of a medicament against cancer.
17. The use according to claim 15, wherein said cancer is selected from the group of ovarian cancer, hepatocellular carcinoma, colorectal carcinoma, glioblastoma, gastric cancer, esophageal cancer, non-small cell lung cancer, small cell lung cancer, pancreatic cancer, renal cell carcinoma, prostate cancer, melanoma, breast cancer, chronic lymphocytic leukemia, Non-Hodgkin lymphoma, acute myeloid leukemia, gallbladder cancer and cholangiocarcinoma, urinary bladder cancer, uterine cancer, head and neck squamous cell carcinoma, mesothelioma and other tumors that show an overexpression of a protein from which a peptide SEQ ID No. 12 is derived from.
18. A kit comprising:
 - a) a container comprising a pharmaceutical composition containing the peptide according to any one of claims 1 to 4, the antibody or fragment thereof according to claim 5, the T-cell receptor or fragment thereof according to claim 6, the nucleic acid or the expression vector according to claim 8, the host cell according to claim 9, or the activated T lymphocyte according to 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. 12, and
 - d) optionally, instructions for (i) use of the solution or (ii) reconstitution and/or use of the lyophilized formulation, and optionallyone or more of (iii) a buffer, (iv) a diluent, (v) a filter, (vi) a needle, or (vii) a syringe.