

CLAIMS

1. ~~A peptide comprising an amino sequence selected from the group consisting of~~
STLPETAVVRR, STLPETAVVR, STLPETTIVRR, STLPETTIVRR, STPETTVVRR, STLPETTIVGR and
5 STIPETTIVRR, wherein the peptide is derived from Hepatitis B virus core169 and is capable of
binding HLA-A*1101 and when bound to HLA-A*1101 is capable of identifying T cells specific
for Hepatitis B virus.
- ~~21.~~ Use of a peptide ~~according to claim 1~~ for identifying Hepatitis B virus antigen-specific
10 T cells, the peptide is capable of binding HLA-A*1101 and when bound to HLA-A*1101 is
capable of identifying T cells specific for Hepatitis B virus, wherein the comprises an amino
acid sequence selected from the group consisting of STLPETAVVRR, STLPETAVVR,
STLPETTIVRR, STPETTVVRR, STLPETTIVGR and STIPETTIVRR.
- 15 ~~32.~~ A method for selecting Hepatitis B virus antigen-specific T cells, the method
comprising contacting a population of T cells with a peptide ~~according to claim 1~~ comprising
an amino acid sequence selected from the group consisting of STLPETAVVRR, STLPETAVVR,
STLPETTIVRR, STPETTVVRR, STLPETTIVGR and STIPETTIVRR.
- 20 4. ~~A T cell receptor (TCR) molecule comprising an amino acid sequence selected from the~~
~~group comprising: CASGDSNSPLHF, CASSGGQIVYEQYF, CSARGGRGGDYTF and~~
~~CASSQDWTEAFF, the T cell receptor is able to bind to a peptide according to claim 1.~~
- 25 5. ~~The TCR molecule according to claim 4, wherein the amino acid encodes for a TCR beta~~
~~chain portion.~~
6. ~~A polynucleotide encoding a peptide according to a TCR molecule in claim 4.~~
7. ~~The polynucleotide encoding a T cell receptor according to claim 6 has a sequence~~
30 ~~selected from the group comprising SEQ ID NOS 1 to 16.~~

5 ~~83.~~ An expression vector comprising a polynucleotide encoding a T cell receptor (TCR) molecule, the TCR molecule comprising an amino acid sequence selected from the group consisting of: CASGDSNSPLHF, CASSGGQIVYEQYF, CSARGGRGGDYTF and CASSQDWTEAFF~~according to any one of claims 6 or 7.~~

4. The expression vector of claim 3, wherein the polynucleotide encoding the TCR molecule has a sequence selected from the group consisting of SEQ ID NOs 1 to 16.

10 ~~9-5.~~ A host cell comprising:

(i) a polynucleotide encoding a TCR molecule, the TCR molecule comprising an amino acid sequence selected from the group comprising: CASGDSNSPLHF, CASSGGQIVYEQYF, CSARGGRGGDYTF and CASSQDWTEAFF~~according to any one of claims 6 or 7;~~ or

(ii) a polynucleotide encoding a TCR molecule comprising a sequence selected from the group consisting of SEQ ID NOs 1 to 16; or

15 (iii) an expression vector according to claim ~~83~~; or

(iv) an expression vector according to claim 4.

20 ~~106.~~ The host cell according to claim ~~95~~, wherein the host cell is a T cell derived from a patient.

25 ~~117.~~ A T cell modified to express the TCR molecule comprising an amino acid sequence selected from the group consisting of: CASGDSNSPLHF, CASSGGQIVYEQYF, CSARGGRGGDYTF and CASSQDWTEAFF~~according to any one of claims 4 or 5.~~

8. The T cell according to claim 7, wherein the amino acid sequence encodes for a TCR beta chain portion.

30 ~~129.~~ The T cell according to claim ~~117~~ 7 or 8, for use in inducing antiviral T cell activity against a Hepatitis B virus core169 epitope, wherein a polynucleotide ~~according to claim 7 or~~ an expression vector according to claims ~~8-3 or 4~~ 8-3 or 4 has been introduced into the T cell, preferably patient-derived T cell, so that the T cell expresses the encoded TCR molecule,

wherein the polynucleotide encodes a TCR molecule, wherein the TCR molecule comprises an amino acid sequence selected from the group comprising: CASGDSNSPLHF, CASSGGQIVYEQYF, CSARGGRGGDYTF and CASSQDWTEAFF, and wherein the polynucleotide has a sequence selected from the group comprising SEQ ID NOs 1 to 16.

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~~13~~10. A pharmaceutical composition comprising:

(i) a peptide comprising an amino acid sequence selected from the group consisting of STLPETAVVRR, STLPETAVVR, STLPETTVIRR, STPPETTVVRR, STLPETTVVGR and STIPETTVVRR~~according to claim 1;~~ or

10 (ii) a polynucleotide encoding a TCR molecule, the TCR molecule comprising an amino acid sequence selected from the group comprising: CASGDSNSPLHF, CASSGGQIVYEQYF, CSARGGRGGDYTF and CASSQDWTEAFF~~according to claim 6;~~ or

(iii) a T cell according to claim ~~10~~7;

and a pharmaceutically acceptable carrier.

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~~14~~11. A peptide comprising an amino acid sequence selected from the group consisting of STLPETAVVRR, STLPETAVVR, STLPETTVIRR, STPPETTVVRR, STLPETTVVGR and STIPETTVVRR;~~according to claim 1;~~ or

~~a polynucleotide according to claim 6 or a T cell according to claim 11-7;~~

20 for use in medicine, wherein ~~the~~an individual to be treated is a human individual who carries HLA-A*1101.

~~15~~12. A vaccine against Hepatitis B virus infection comprising a peptide comprising an amino acid sequence selected from the group consisting of STLPETAVVRR, STLPETAVVR, STLPETTVIRR, STPPETTVVRR, STLPETTVVGR and STIPETTVVRR~~according to claim 1 or a polynucleotide according to claim 6 or a T cell according to claim 11.~~

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~~16~~13. Use of:

a peptide comprising an amino acid sequence selected from the group consisting of STLPETAVVRR, STLPETAVVR, STLPETTVIRR, STPPETTVVRR, STLPETTVVGR and STIPETTVVRR~~according to claim 1;~~ or

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~~a polynucleotide according to claim 6 or a T cell according to claim 11-7;~~

in the manufacture of a medicament for treating a Hepatitis B virus infection.

~~17. A method of treating a Hepatitis B virus infection in an individual, the method comprising administering to the individual an effective amount of a peptide according to claim 1 or a polynucleotide according to claim 6 or a T cell according to claim 11.~~

~~18~~14. Use of a T cell according to claim ~~11~~7 in the preparation of a medicament for inducing antiviral T cell activity against a Hepatitis B virus.

~~19. A method of combating a Hepatitis B virus infection in a patient which carries HLA A*1101, the method comprising:~~

~~(a) obtaining T cells from the patient;~~

~~(b) introducing into the T cells a polynucleotide encoding a TCR molecule according to claim 4;~~

~~(c) introducing the T cells produced in step (b) into the patient.~~

~~20. The method according to claim 19, wherein the polynucleotide is transfected or introduced to the T cells by electroporation.~~