

CLAIMS

1. Use of a peptide for identifying Hepatitis B virus antigen-specific 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 peptide comprises an amino acid sequence selected from the group consisting of STLPETAVVRR, STLPETAVVR, STLPETTVIRR, STPPETTVVRR, STLPETTVVGR and STIPETTVVRR.
2. A method for selecting Hepatitis B virus antigen-specific T cells, the method comprising contacting a population of T cells with a peptide comprising an amino acid sequence selected from the group consisting of STLPETAVVRR, STLPETAVVR, STLPETTVIRR, STPPETTVVRR, STLPETTVVGR and STIPETTVVRR.
3. 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.
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.
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; or
 - (ii) a polynucleotide encoding a TCR molecule comprising a sequence selected from the group consisting of SEQ ID NOs 1 to 16; or
 - (iii) an expression vector according to claim 3; or
 - (iv) an expression vector according to claim 4.
6. The host cell according to claim 5, wherein the host cell is a T cell derived from a patient.

7. 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.

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

9. The T cell according to claims 7 or 8, for use in inducing antiviral T cell activity against
10 a Hepatitis B virus core169 epitope, wherein a polynucleotide or an expression vector according to claims 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,
15 CSARGGRGGDYTF and CASSQDWTEAFF, and wherein the polynucleotide has a sequence selected from the group comprising SEQ ID NOs 1 to 16.

10. A pharmaceutical composition comprising:

(i) a peptide comprising an amino acid sequence selected from the group consisting of
20 STLPETAVVRR, STLPETAVVR, STLPETTVIRR, STPPETTVVRR, STLPETTVVGR and STIPETTVVRR; or
(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; or
(iii) a T cell according to claim 7;
25 and a pharmaceutically acceptable carrier.

11. A peptide comprising an amino acid sequence selected from the group consisting of STLPETAVVRR, STLPETAVVR, STLPETTVIRR, STPPETTVVRR, STLPETTVVGR and STIPETTVVRR; or
a T cell according to claim 7;
30 for use in medicine, wherein an individual to be treated is a human individual who carries HLA-A*1101.

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.

5 13. Use of:

a peptide comprising an amino acid sequence selected from the group consisting of STLPETAVVRR, STLPETAVVR, STLPETTVIRR, STPPETTVVRR, STLPETTVVGR and STIPETTVVRR; or
a T cell according to claim 7;

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

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

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