Claims

1. A nucleic acid encoding a TCR alpha chain construct (TRA) and/or a TCR beta chain construct (TRB) of a TCR construct specific for an epitope in complex with a human MHC I, wherein the epitope is an epitope of an Epstein-Barr-virus (EBV) protein,
wherein the epitope has the sequence of SEQ ID NO: 1, the MHC I is HLA-A*02:01, and the TRA comprises a CDR1 having the sequence of SEQ ID NO: 11, a CDR2 having the sequence of SEQ ID NO: 12 and a CDR3 having the sequence of SEQ ID NO: 13, and/or the TRB comprises a CDR1 having the sequence of SEQ ID NO: 16, a CDR2 having the sequence of SEQ ID NO: 17 and a CDR3 having the sequence of SEQ ID NO: 18.

2. A nucleic acid of claim 1, wherein the TRA comprises a variable region having at least 90% sequence identity to SEQ ID NO: 15 and/or the TRB comprises a variable region having at least 90% sequence identity to SEQ ID NO: 20.

3. The nucleic acid of any of the preceding claims, encoding at least one TCR alpha and beta chain construct of the TCR construct.

4. The nucleic acid of claim 3, wherein the nucleic acid is selected from the group consisting of a viral vector, a transposon, a vector suitable for CRISPR/CAS based recombination and a plasmid suitable for *in vitro* RNA transcription.

5. The nucleic acid of any of claims 3 or 4,wherein the TCR alpha chain construct and the TCR beta chain construct further comprise a constant region selected from the group comprising a human constant region, a murine constant region or a chimeric constant region.

6. A protein encoded by the nucleic acid of any of claims 3-5.

7. A host cell comprising a nucleic acid of any claims 3-5 and/or a protein of claim 6, wherein the host cell preferably is a human CD8+ T cell.

8. A pharmaceutical composition comprising

   a) a nucleic acid of any of claims 3-5 encoding a TCR construct capable of specifically binding to said epitope in the context of said MHC I; or

   b) a protein of claim 6 comprising a TCR construct capable of specifically binding to said epitope in the context of said MHC I; or

   c) a host cell of claim 7 expressing a TCR construct capable of specifically binding to said epitope in the context of said MHC I.

9. The pharmaceutical composition of claim 8 or a kit comprising the pharmaceutical composition of claim 8, further comprising

a) if the pharmaceutical composition comprises a nucleic acid of any of claims 3-5, a second nucleic acid encoding a TCR alpha chain construct (TRA) and a TCR beta chain construct (TRB) of a TCR construct specific for an epitope in complex with a human MHC I, wherein the epitope is an epitope of an Epstein-Barr-virus (EBV) protein

(i) wherein the epitope has the sequence of SEQ ID NO: 2, the MHC I is HLA-B*57:01, and the TRA comprises a CDR1 having SEQ ID NO: 21, a CDR2 having SEQ ID NO: 22 and a CDR3 having SEQ ID NO: 23, and the TRB comprises a CDR1 having SEQ ID NO: 26, a CDR2 having SEQ ID NO: 27 and a CDR3 having SEQ ID NO: 28;

(ii) wherein the epitope has the sequence of SEQ ID NO: 3, the MHC I is HLA-C*15:02, and the TRA comprises a CDR1 having SEQ ID NO: 31, a CDR2 having SEQ ID NO: 32 and a CDR3 having SEQ ID NO: 33, and the TRB comprises a CDR1 having SEQ ID NO: 36, a CDR2 having SEQ ID NO: 37 and a CDR3 having SEQ ID NO: 38;

(iii) wherein the epitope has the sequence of SEQ ID NO: 4, the MHC I is HLA-C*06:02, and the TRA comprises a CDR1 having SEQ ID NO: 41, a CDR2 having SEQ ID NO: 42 and a CDR3 having SEQ ID NO: 43, and the TRB comprises a CDR1 having SEQ ID NO: 46, a CDR2 having SEQ ID NO: 47 and a CDR3 having SEQ ID NO: 48;

(iv) wherein the epitope has the sequence of SEQ ID NO: 5, the MHC I is HLA-B*44:02, and the TRA comprises a CDR1 having SEQ ID NO: 51, a CDR2 having SEQ ID NO: 52 and a CDR3 having SEQ ID NO: 53, and the TRB comprises a CDR1 having SEQ ID NO: 56, a CDR2 having SEQ ID NO: 57 and a CDR3 having SEQ ID NO: 58;

(v) wherein the epitope has the sequence of SEQ ID NO: 5, the MHC I is HLA-B*44:02, and the TRA comprises a CDR1 having SEQ ID NO: 61, a CDR2 having SEQ ID NO: 62 and a CDR3 having SEQ ID NO: 63, and the TRB comprises a CDR1 having SEQ ID NO: 66, a CDR2 having SEQ ID NO: 67 and a CDR3 having SEQ ID NO: 68;

(vi) wherein the epitope has the sequence of SEQ ID NO: 6, the MHC I is HLA-B*07:02, and the TRA comprises a CDR1 having SEQ ID NO: 71, a CDR2 having SEQ ID NO: 72 and a CDR3 having SEQ ID NO: 73, and the TRB comprises a CDR1 having SEQ ID NO: 76, a CDR2 having SEQ ID NO: 77 and a CDR3 having SEQ ID NO: 78; and/or

(vii) wherein the epitope has the sequence of SEQ ID NO: 6, the MHC I is HLA-B*07:02, and the TRA comprises a CDR1 having SEQ ID NO: 81, a CDR2 having SEQ ID

NO: 82 and a CDR3 having SEQ ID NO: 83, and the TRB comprises a CDR1 having EQ IDNO: 86, a CDR2 having SEQ ID NO: 87 and a CDR3 having SEQ ID NO: 88;

or

b) if the pharmaceutical composition comprises a protein of claim 6, at least a second TCR construct capable of specifically binding to its respective epitope in the context of the respective MHC I encoded by the second nucleic acid of a); or

c) if the pharmaceutical composition comprises a host cell of claim 7, at least a second host cell expressing a second TCR construct capable of specifically binding to its respective epitope in the context of the respective MHC I,

wherein one of said TCR constructs preferably is the TCR construct of claim 2.

10. Use of the pharmaceutical composition of any of claims 8-9 or the kit of claim 9 in the manufacture of a medicament for the treatment of an EBV-associated disease selected from the group comprising Hodgkin's and non-Hodgkin lymphoma, Burkitt lymphoma, hemophagocytic lympohistiocytosis, nasopharyngeal carcinoma, head and neck cancer, lung cancer, gastric cancer hairy leukoplakia, post transplant lymphoproliferative disorder and central nervous system lymphoma in a patient expressing HLA-A*02:01,

wherein the treatment preferably is an immunotherapy selected from the group of adoptive T cell therapy and TCR gene therapy.

11. The pharmaceutical composition of any of claims 8-9 or the kit of claim 9 for use in therapy.