

CLAIMS

1. A composition comprising a genetically engineered immune cell which comprises an engineered survivin-specific T cell receptor with selective antitumor activity, wherein the receptor recognizes an epitope having a sequence selected from the group consisting of: SEQ ID NO: 15, SEQ ID NO: 16, a functional derivative thereof having at least 70, 75, 77, 80, 85, 88, 90, 91, 95, 97, or 99% identity to SEQ ID NO: 15 or SEQ ID NO: 16, respectively, an epitope having a N-terminal and/or C-terminal truncation of 1, 2, 3, 4 or 5 or more amino acids in relation to SEQ ID NO: 15 or SEQ ID NO: 16, respectively, and an epitope having a N-terminal and/or C-terminal extension of 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10 amino acids in relation to SEQ ID NO: 15 or SEQ ID NO: 16, respectively.
2. The composition according to claim 1, wherein the survivin-specific T cell receptor comprises one or both of the following:
 - a) a beta chain comprising SEQ ID NO: 1, a functional fragment thereof, or a functional derivative thereof having 85%, 90%, 95%, 97%, 98% or 99% identity to SEQ ID NO: 1; and
 - b) an alpha chain comprising SEQ ID NO: 2, a functional fragment thereof, or a functional derivative thereof having 85%, 90%, 95%, 97%, 98% or 99% identity to SEQ ID NO: 2.
3. The composition according to claim 2, wherein the immune cell is a T cell, a NK T cell or an NK cell.
4. The composition according to claim 3, wherein the immune cell is a T cell.
5. The composition according to any one of claims 1 to 4, wherein the cell comprises an antigen recognition moiety that is not the T cell receptor.
6. The composition according to claim 5, wherein the antigen recognition moiety is a chimeric antigen receptor, an engager molecule or another T cell receptor.
7. The composition according to claim 6, wherein the antigen recognition moiety recognizes a tumor antigen.
8. The composition according to claim 7, wherein the tumor antigen is survivin.
9. The composition according to any one of claims 1 to 8, wherein the cell is autologous to an individual.
10. The composition according to any one of claims 1 to 8, wherein the cell is allogeneic to an individual.

11. The composition according to any one of claims 1 to 10, wherein the cell expresses a suicide gene product.
12. The composition according to claim 11, wherein the suicide gene product is iCaspase 9.
13. The composition according to any one of claims 1 to 12, wherein the receptor is HLA-A2 restricted.
14. The composition according to any one of claims 1 to 13, further comprising immunomodulatory agents, agents that affect the upregulation of cell surface receptors and GAP junctions, cytostatic and differentiation agents, inhibitors of cell adhesion, or agents that increase the sensitivity of the hyperproliferative cells to apoptotic inducers.
15. Use of a composition according to any one of claims 1 to 14 in the manufacture of a medicament for the treatment of cancer.
16. The use according to claim 15, wherein the cancer is survivin-positive.
17. The use according to claims 15 to 16, wherein the cancer is selected from the group consisting of: leukemia, myeloma, breast cancer, lung cancer, colon cancer, melanoma, lymphoma, ovarian cancer, prostate cancer, central nervous system cancer and renal cancer.
18. A polynucleotide that encodes a T cell receptor as defined in any one of claims 1 to 14.
19. The polynucleotide of claim 18, encoding an amino acid sequence, a functional fragment thereof, or a functional derivative thereof having 95%, 97%, 98% or 99% identity thereto selected from the group consisting of: SEQ ID NO: 1, SEQ ID NO: 2 and SEQ ID NO: 3.
20. An expression vector comprising the polynucleotide according to claim 18 or 19.
21. A cell comprising the polynucleotide according to claims 18 or 19 or the expression vector of claim 20.