WHAT IS CLAIMED IS:

1. A tumor antigen peptide of 15 amino acids or less comprising one of the amino acid sequences set forth in SEQ ID NOs: 69, 1-68 and 70-103, or a nucleic acid encoding said tumor antigen peptide.

2. The tumor antigen peptide or nucleic acid of claim 1, wherein said tumor antigen peptide comprises one of the amino acid sequences set forth in SEQ ID NOs: 69, 19-68 and 70-103.

3. The tumor antigen peptide or nucleic acid of claim 1 or 2, wherein said tumor antigen peptide binds to an HLA-A*01:01 molecule and comprises the amino acid sequence set forth in SEQ ID NO: 21, 28, 40, 41, 66 or 88.

4. The tumor antigen peptide or nucleic acid of claim 1 or 2, wherein said tumor antigen peptide binds to an HLA-A*03:01 molecule and comprises the amino acid sequence set forth in SEQ ID NO: 1, 19, 20, 22, 30, 31, 36, 50, 52, 60, 62, 73, 84, 85, 86 or 91.

5. The tumor antigen peptide or nucleic acid of claim 1 or 2, wherein said tumor antigen peptide binds to an HLA-A*11:01 molecule and comprises the amino acid sequence set forth in SEQ ID NO: 69, 32, 54, 55, 67, 81, 87, 90 or 102.

6. The tumor antigen peptide or nucleic acid of claim 1 or 2, wherein said tumor antigen peptide binds to an HLA-B*07:02 molecule and comprises the amino acid sequence set forth in SEQ ID NO: 4, 6, 8, 9, 26, 49, 78, 92, 97 or 101.

7. The tumor antigen peptide or nucleic acid of claim 1 or 2, wherein said tumor antigen peptide binds to an HLA-B*08:01 molecule and comprises one of the amino acid sequences set forth in SEQ ID NO: 23, 35, 42, 44, 46, 59, 63, 70, 74, 76, 83 or 103.

8. The tumor antigen peptide or nucleic acid of any one of claims 1-7, wherein said tumor antigen peptide is encoded by a sequence located a non-protein coding region of the genome, and wherein said non-protein coding region of the genome is:

(a) an untranslated transcribed region (UTR), and said tumor antigen peptide comprises the amino acid sequence set forth in any one of SEQ ID NOs: 1, 8, 10, 13, 15 and 19-27;

(b) an intron, and said tumor antigen peptide comprises the amino acid sequence set forth in any one of SEQ ID NOs: 16, 17 and 36-64;

(c) an intergenic region, and said tumor antigen peptide comprises the amino acid sequence set forth in any one of SEQ ID NOs: 65-84;

(d) an exon of a noncoding RNA transcript (ncRNA), and said tumor antigen peptide comprises the amino acid sequence set forth in any one of SEQ ID NOs: 4 and 85-92; or

(e) an antisense strand of a gene, and said tumor antigen peptide comprises the amino acid sequence set forth in any one of SEQ ID NOs: 93-99.

9. The tumor antigen peptide or nucleic acid of any one of claims 1 to 8, wherein said nucleic acid is an mRNA or a viral vector.

10. A liposome comprising the tumor antigen peptide or nucleic acid of any one of claims 1 to 9.

11. A composition comprising the tumor antigen peptide or nucleic acid of any one of claims 1-9 or the liposome of claim 10, and a pharmaceutically acceptable carrier.

12. A vaccine comprising the tumor antigen peptide or nucleic acid of any one of claims 1-9 the liposome of claim 10, or the composition of claim 11, and an adjuvant.

13. An isolated cell expressing at its surface major histocompatibility complex (MHC) class I molecules comprising the tumor antigen peptide of any one of claims 1-9 in their peptide binding groove.

14. The cell of claim 13, which is an antigen-presenting cell (APC).

15. The cell of claim 14, wherein said APC is a dendritic cell.

16. A T-cell receptor (TCR) that specifically recognizes MHC class I molecules expressed at the surface of the cell of any one of claims 13-15.

17. An isolated $CD8^+$ T lymphocyte expressing at its cell surface the TCR of claim 16.

18. A cell population comprising at least 0.5% of $CD8^+$ T lymphocytes as defined in claim 17.

19. Use of: (i) the tumor antigen peptide or nucleic acid of any one of claims 1-9; (ii) the liposome of claim 10; (iii) the composition of claim 11; (iv) the vaccine of claim 12; (v) the cell of any one of claims 13-15; (vi) the $CD8^+$ T lymphocytes of claim 17; or (vii) the cell population of claim 18, for the manufacture of a medicament for treating ovarian cancer in a subject.

20. The use of claim 19, wherein said ovarian cancer is a serous carcinoma.

21. The use of claim 20, wherein said serous carcinoma is high-grade serous carcinoma (HGSC).

22. The use of any one of claims 19-21, further comprising the use of at least one additional antitumor agent or therapy.

23. The use of claim 22, wherein said at least one additional antitumor agent or therapy is a chemotherapeutic agent, immunotherapy, an immune checkpoint inhibitor, radiotherapy or surgery.

24. The (i) tumor antigen peptide or nucleic acid of any one of claims 1-9; (ii) liposome of claim 10; (iii) composition of claim 11; (iv) vaccine of claim 12; (v) cell of any one of claims 13-15; (vi) $CD8^+$ T lymphocytes of claim 17; or (vii) the cell population of claim 18, for use in treating ovarian cancer in a subject.

25. The tumor antigen peptide, nucleic acid, liposome, composition, vaccine, cell, $CD8^+$ T lymphocytes, or cell population for use according to claim 24, wherein said ovarian cancer is a serous carcinoma.

26. The tumor antigen peptide, nucleic acid, liposome, composition, vaccine, cell, $CD8^+$ T lymphocytes, or cell population for use according to claim 25, wherein said serous carcinoma is high-grade serous carcinoma (HGSC).

27. The tumor antigen peptide, nucleic acid, liposome, composition, vaccine, cell, $CD8^+$ T lymphocytes, or cell population for use according to any one of claims 24-26, wherein the tumor antigen peptide, nucleic acid, liposome, composition, vaccine, cell, $CD8^+$ T lymphocytes, or cell population is used in combination with at least one additional antitumor agent or therapy.

28. The tumor antigen peptide, nucleic acid, liposome, composition, vaccine, cell, $CD8^+$ T lymphocytes, or cell population for use according to claim 27, wherein said at least one additional antitumor agent or therapy is a chemotherapeutic agent, immunotherapy, an immune checkpoint inhibitor, radiotherapy or surgery.