

## WHAT IS CLAIMED IS:

1. A tumor antigen peptide (TAP) that binds to an HLA-A\*02:01 molecule and comprises the amino acid sequence FLLEFKPVS (SEQ ID NO:7), LLSRGLLFRI (SEQ ID NO:11), LLDNILQSI (SEQ ID NO:27), FLASFVEKTVL (SEQ ID NO:32), ILASHNLTV (SEQ ID NO:33), IQLTSVHLL (SEQ ID NO:34), LELISFLPVL (SEQ ID NO:35), LLLPESPSI (SEQ ID NO:43), ALASHLIEA (SEQ ID NO:51), ALDDITIQL (SEQ ID NO:52), GLYYKLHNV (SEQ ID NO:61), HLLSETPQL (SEQ ID NO:65), KLEKAFSI (SEQ ID NO:72), SLWGQPAEA (SEQ ID NO:77), KLQDKEIGL (SEQ ID NO:108), TLNQGINVYI (SEQ ID NO:119), ALPVALPSL (SEQ ID NO:123), ALDPLLLRI (SEQ ID NO:130), KILDVNLRI (SEQ ID NO:132), SLLSGLLRA (SEQ ID NO:146), SLDLLPLSI (SEQ ID NO:150), ILLEEQSLI (SEQ ID NO:167), LTSISIRPV (SEQ ID NO:168), TISECPLLI (SEQ ID NO:169), ILLSNFSSL (SEQ ID NO:171), RMVAYLQQL (SEQ ID NO:183), or KLNQAFLVL (SEQ ID NO:188), or a nucleic acid encoding said TAP.
2. The TAP or nucleic acid of claim 1, wherein said TAP comprises the amino acid sequence KLQDKEIGL (SEQ ID NO:108), TLNQGINVYI (SEQ ID NO:119), ALPVALPSL (SEQ ID NO:123), ALDPLLLRI (SEQ ID NO:130), KILDVNLRI (SEQ ID NO:132), SLLSGLLRA (SEQ ID NO:146) or SLDLLPLSI (SEQ ID NO:150).
3. The TAP or nucleic acid of claim 1 or 2, which is encoded by a sequence located a non-protein coding region of the genome.
4. The TAP or nucleic acid of claim 3, wherein said non-protein coding region of the genome is an untranslated transcribed region (UTR).
5. The TAP or nucleic acid of claim 3, wherein said non-protein coding region of the genome is an intron.
6. The TAP or nucleic acid of claim 3, wherein said non-protein coding region of the genome is an intergenic region.
7. A combination comprising at least two of the TAPs or nucleic acids defined in any one of claims 1-6.
8. The TAP or nucleic acid of any one of claims 1-6, which is a nucleic acid.
9. The nucleic acid of claim 8, which is an mRNA.
10. A vehicle comprising the TAP or nucleic acid of any one of claims 1-6, 8 and 9, or the combination of claim 7.

11. The vehicle of claim 10, which is a liposome.
12. A composition comprising the TAP or nucleic acid of any one of claims 1-6, 8 and 9, the combination of claim 7, or the vehicle of claim 10 or 11, and a pharmaceutically acceptable carrier.
13. A vaccine comprising the TAP or nucleic acid of any one of claims 1-6, 8 and 9, the combination of claim 7, the vehicle of claim 10 or 11, or the composition of claim 12, and an adjuvant.
14. An isolated cell expressing at its surface major histocompatibility complex (MHC) class I molecules comprising the TAP of any one of claims 1-6, 8 and 9 or the combination of TAPs of claim 7 in their peptide binding groove.
15. A T-cell receptor (TCR) that specifically recognizes MHC class I molecules expressed at the surface of the cell of claim 14.
16. The TCR of claim 15, wherein said TCR comprises a TCRbeta (TCR $\beta$ ) chain comprising a complementary determining region 3 (CDR3) comprising one of the amino acid sequences set forth in SEQ ID NO: 191-219.
17. An isolated cell expressing at its cell surface the TCR of claim 15 or 16.
18. A cell population comprising at least 0.5% of the isolated cell as defined in claim 17.
19. Use of:
  - (i) a TAP comprising the amino acid sequence FLLEFKPVS (SEQ ID NO:7), LLSRGLLFRI (SEQ ID NO:11), LLDNILQSI (SEQ ID NO:27), FLASFVEKTVL (SEQ ID NO:32), ILASHNLTV (SEQ ID NO:33), IQLTSVHLL (SEQ ID NO:34), LELISFLPVL (SEQ ID NO:35), LLLPESPSI (SEQ ID NO:43), ALASHLIEA (SEQ ID NO:51), ALDDITIQL (SEQ ID NO:52), ALGNTVPAV (SEQ ID NO:53), ALLPAVPSL (SEQ ID NO:54), GLYYKLHNV (SEQ ID NO:61), HLLSETPQL (SEQ ID NO:65), KLLKAFSI (SEQ ID NO:72), SLWGQPAEA (SEQ ID NO:77), SVFAGVVG (SEQ ID NO:82), VLVPYEPPQV (SEQ ID NO:86), VLFGGKVSGA (SEQ ID NO:104), KLQDKEIGL (SEQ ID NO:108), TLNQGINVYI (SEQ ID NO:119), ALPVALPSL (SEQ ID NO:123), ALDPLLLRI (SEQ ID NO:130), KILDVNLRI (SEQ ID NO:132), SLLSGLLRA (SEQ ID NO:146), SLDLLPLSI (SEQ ID NO:150), ILLEEQSLI (SEQ ID NO:167), LTSISIRPV (SEQ ID NO:168), TISECPLLI (SEQ ID NO:169),

ILLSNFSSL (SEQ ID NO:171), RMVAYLQQL (SEQ ID NO:183), or KLNQAFLVL (SEQ ID NO:188), or a nucleic acid encoding said TAP;

(ii) a combination comprising at least two of the TAPs or nucleic acids defined in (i);

(iii) a vehicle comprising the TAP or nucleic acid defined in (i) or the combination defined in (ii);

(iv) a composition comprising the TAP or nucleic acid defined in (i), the combination defined in (ii), or the vehicle defined in (iii);

(v) a vaccine comprising the TAP or nucleic acid defined in (i), the combination defined in (ii), the vehicle defined in (iii) or the composition defined in (iv);

(vi) a cell expressing at its surface (a) MHC class I molecules comprising the TAP defined in (i) or (b) a TCR that specifically the MHC class I molecules defined in (a);  
or

(vii) a cell population comprising at least 0.5% of the cells defined in (vi)(b);

for the manufacture of a medicament for treating myeloid leukemia in a subject

20. The use of claim 19, wherein said myeloid leukemia is acute myeloid leukemia (AML).

21. The use of claim 19 or 20, wherein said medicament is for use in combination with at least one additional antitumor agent or therapy.

22. The use of claim 21, wherein said at least one additional antitumor agent or therapy is a chemotherapeutic agent, immunotherapy, an immune checkpoint inhibitor, radiotherapy or surgery.