

## Claims

What is claimed is:

1. An isolated antigen-binding protein that binds specifically to a conformational epitope of an HLA-A2 presented human papillomavirus (HPV) 16 E7 peptide (HPV16E7 peptide), wherein the conformational epitope comprises one or more amino acids of SEQ ID NO: 537 selected from the group consisting of Y11, D14, L15, P17 and E18,  
wherein the antigen-binding protein comprises three heavy chain complementarity determining regions (CDRs) (HCDR1, HCDR2 and HCDR3); and three light chain CDRs (LCDR1, LCDR2 and LCDR3), and wherein the HCDR1, HCDR2 HCDR3, LCDR1, LCDR2 and LCDR3 comprise the amino acid sequence set selected from the group consisting of
  - (a) SEQ ID NOs: 4, 6, 8, 12, 14, and 16, respectively;
  - (b) SEQ ID NOs: 36, 38, 40, 44, 46, and 48, respectively;
  - (c) SEQ ID NOs: 84, 86, 88, 92, 94, and 96, respectively;
  - (d) SEQ ID NOs: 196, 198, 200, 204, 206, and 208, respectively;
  - (e) SEQ ID NOs: 284, 286, 288, 292, 294, and 296, respectively; and
  - (f) SEQ ID NOs: 508, 510, 512, 516, 518, and 520, respectively.
2. The isolated antigen-binding protein of claim 1, wherein the HPV16E7 peptide comprises the amino acid sequence of YMLDLQPET (SEQ ID NO: 538).
3. The isolated antigen-binding protein of claim 1, wherein the antigen-binding protein is a full-length antibody, a Fab, a Fab', a (Fab')<sub>2</sub>, an Fv, a single chain Fv (scFv), a T-body construct, or a CAR.
4. The isolated antigen-binding protein of claim 1, wherein the antigen-binding protein is a human monoclonal antibody, or antigen-binding fragment thereof.
5. The isolated antigen-binding protein of claim 1, wherein the amino acid sequence of the HCVR and the amino acid sequence of the LCVR of each HCVR/LCVR pair are each independently at least 95% identical to the amino acid sequence of an HCVR/LCVR amino acid sequence pair selected from the group consisting of SEQ ID NOs: 2/10, 34/42, 82/90, 194/202, 282/290, and 506/514.
6. The isolated antigen-binding protein of claim 5, wherein the amino acid sequence of

the HCVR and the amino acid sequence of the LCVR of each HCVR/LCVR pair are selected from the group consisting of SEQ ID NOs: 2/10, 34/42, 82/90, 194/202, 282/290, and 506/514.

7. The isolated antigen-binding protein of claim 3, wherein the antigen-binding protein is a single chain Fv (scFv).

8. The isolated antigen-binding protein of claim 6, comprising an HCVR/LCVR amino acid sequence pair selected from the group consisting of SEQ ID NOs: 2/10, 34/42, 82/90, 194/202, 282/290, and 506/514.

9. The isolated antigen-binding protein of claim 1, further comprising a detectable moiety.

10. A pharmaceutical composition comprising an isolated antigen-binding protein that binds to HLA-A2:HPV16E7 according to claim 5 and a pharmaceutically acceptable carrier or diluent.