WHAT IS CLAIMED IS:

1. A polynucleotide encoding a fusion protein comprising: (a) an HPV-16 E5 peptide or an HPV-18 E5 peptide; and (b) an HPV-16 E6 peptide, an HPV-16 E7 peptide, an HPV-18 E6 peptide, or an HPV-18 E7 peptide.
2. The polynucleotide of claim 1, wherein the fusion protein comprises at least one of: (a) an HPV-16 E5 peptide comprising the amino acid sequence of SEQ ID NO: 130; (b) an HPV-16 E6 peptide comprising the amino acid sequence of any one of SEQ ID NOs: 113–121; (c) an HPV-16 E7 peptide comprising the amino acid sequence of any one of SEQ ID NOs: 122–129; (d) an HPV-18 E6 peptide comprising the amino acid sequence of any one of SEQ ID NOs: 131–138; and (e) an HPV-18 E7 peptide comprising the amino acid sequence of any one of SEQ ID NOs: 139–144.
3. The polynucleotide of claim 1, wherein the fusion protein further comprises an agonist peptide.
4. The polynucleotide of claim 3, wherein the agonist peptide comprises an amino acid sequence of any one of SEQ ID NOs: 145–147.
5. The polynucleotide of claim 1, wherein the fusion protein further comprises an ankyrin-like repeat domain.
6. The polynucleotide of claim 5, wherein the ankyrin-like repeat domain is located between two of the HPV peptides of the fusion protein.
7. The polynucleotide of claim 6, wherein the fusion protein comprises three or more HPV peptides and an ankyrin-like repeat domain between each of the HPV peptides.
8. The polynucleotide of claim 1, wherein the fusion protein comprises an amino acid sequence having at least 90% identity with SEQ ID NO: 243.
9. The polynucleotide of claim 1, wherein the fusion protein comprises an amino acid sequence having at least 95% identity with SEQ ID NO: 243.
10. The polynucleotide of claim 1, wherein the fusion protein comprises the amino acid sequence of SEQ ID NO: 243 or a conservatively-substituted variant thereof.
11. The polynucleotide of claim 1, wherein the fusion protein comprises the amino acid sequence of SEQ ID NO: 243.
12. The polynucleotide of claim 1, wherein the fusion protein comprises an amino acid sequence having at least 90% identity withany one of SEQ ID NOs: 51–53.

13. The polynucleotide of claim 1, operably linked to at least one of: a promoter; a 5’ untranslated region (UTR); a transcription start site (TSS); a 3’ UTR; a tetracycline responsive element; and a kozak region.
14. A vector comprising the polynucleotide of any one of claims 1–13.
15. The vector of claim 14, wherein the vector is an adenoviral vector that is deficient in one or more elements selected from the group consisting of an E1–E4 region and an L1–L5 region.
16. The vector of claim 14, wherein the vector is a gorilla adenoviral vector.
17. The vector of claim 16, wherein the gorilla adenoviral vector is GC46.
18. The vector of claim 14, wherein the vector comprises a nucleic acid sequence having at least 90% identity with SEQ ID NO: 244.
19. Use of the polynucleotide of any one of claims 1–13 in the manufacture of a medicament for inducing an anti-HPV immune response in a subject in need thereof, wherein the medicament comprises a therapeutically effective amount of the polynucleotide.
20. A fusion protein encoded by the polynucleotide of any one of claims 1–13.
21. A composition comprising the polynucleotide of any one of claims 1–13.
22. The composition of claim 21 for use in treating a disease or disorder in a subject in need thereof.
23. A composition comprising the vector of claim 14 in an amount of about 0.1×10^{9} to about 10×10^{12} particle units.
24. A use of the polynucleotide of any one of claims 1–13 in the manufacture of a medicament for use in treating a disease or disorder in a subject in need thereof.
25. The use of claim 24, wherein the medicament is for use in treating the disease or disorder in combination with an immune checkpoint inhibitor.
26. The use of claim 25, wherein the immune checkpoint inhibitor is pembrolizumab.
27. The use of claim 24, wherein the disease or disorder is a lower genital tract neoplasia, cervical cancer, vulvar cancer, anal cancer, penile cancer, or head and neck cancer.
28. A kit comprising the polynucleotide of any one of claims 1–13.
29. A vaccine comprising the polynucleotide of any one of claims 1–13.
30. The vaccine of claim 29 for use in treating a disease or disorder in a subject in need thereof.