WHAT IS CLAIMED IS:

1. A virus-like particle (VLP), comprising:

a papilloma virus L1 protein, and

a linker peptide comprising a target peptide and at least one cleavage site,

wherein the target peptide comprises an antigen that is from 8 to 17 amino acids in length,

wherein the at least one cleavage site is between the VLP and the antigen,

wherein the antigen comprises at least one T cell epitope,

wherein the linker peptide is attached to the VLP via a disulfide, amide, or maleimide moiety,

wherein the linker peptide is 45 amino acids or less in length,

~~wherein the T cell epitope is from a human pathogen,~~ and

wherein, when the VLP is contacted by a protease that recognizes and cleaves the linker at the cleavage site, then the antigen is released from the VLP ~~release of the linker peptide~~ in a tumor microenvironment results in complexation of the antigen with a major histocompatibility (MHC) molecule present on a tumor cell surface, resulting in activation of T cells, thereby inhibiting growth, proliferation, and/or metastasis of the tumor cell.

~~2. The VLP of claim 1, wherein the linker peptide comprises at least one cleavage site, wherein the cleavage site is between the VLP and the antigen.~~

2~~3~~. The VLP of claim 1 ~~or claim 2~~, wherein the antigen is not a tumor-associated antigen.

34. The VLP of any one of claims 1 to ~~3~~2, further comprising a papilloma virus L2 protein.

45. The VLP of any one of claims 1 to ~~4~~3, wherein the L1 protein is a hybrid L1 protein comprising a peptide sequence from at least two different strains of papilloma virus.

~~6. The VLP of any one of claims 1 to 5, wherein the linker peptide is attached by conjugation to the L1 protein via a cysteine, lysine, or arginine residue of the L1 protein.~~

57. The VLP of any one of claims 1 to ~~6~~4, wherein the antigen is from at least one vaccine for inoculating children against one or more childhood diseases.

6.~~8.~~ The VLP of any one of claims 1 to ~~7~~5, wherein the target peptide is not a papilloma virus antigen.

79. The VLP of any one of claims 1 to ~~8~~6, wherein the at least one T cell epitope comprises one or more of SEQ ID NOs: 1 to 204.

8~~10~~. The VLP of any one of claims 1 to ~~9~~7, wherein the antigen is a viral antigenic peptide, bacterial antigenic peptide, parasitic antigenic peptide, or fungus antigenic peptide.

9~~11~~. The VLP of claim ~~10~~8, wherein the antigen is at least a viral antigen, and wherein the viral antigen is from one or more of: vaccinia, Varicella zoster, Herpes zoster, rubella, hepatitis,

influenza, measles, mumps, poliovirus, variola, rabies, dengue, Ebola, West Nile, yellow fever, and zika, or

wherein the antigen is at least a bacterial antigenic peptide, and wherein the bacterial antigen is from one or more of: *Bordetella pertussis*, *Clostridium tetani*, *Chlamydia trachomatis*, *Corynebacterium diphtheriae*, *Hemophilus influenza*, *Neisseria meningitidis*, *Streptococcus*, *Vibrio cholera*, *Mycobacterium tuberculosis*, Bacillus Calmette-Guérin, *Salmonella*, *Escherichia coli*, *Legionella pneumophila*, *Rickettsia*, *Treponema pallidum pallidum*, *Bacillus anthracis*, *Clostridium botulinum*, and *Yersinia*, or

wherein the antigen is at least a parasitic antigenic peptide, and wherein the parasitic antigen is from one or more of: *Entamoeba histolytica*, *Toxoplasma gondii*, *Trichinella*, *Trichomonas*, *Trypanosoma*, and *Plasmodium*.

102. The VLP of any one of claims ~~4~~ 3 to ~~11~~9, wherein the L1 and/or L2 protein is from Bovine papilloma virus (BPV), Human papilloma virus (HPV), Rabbit papilloma virus (RPV), or Mouse papilloma virus (MPV), and optionally wherein the BPV, HPV, RPV, or MPV are of genotype 1, 2, 3, 4, 5, 6, 8, 9, 11, 15, 16, 17, 18, 23, 27, 38, 31, 45, 33, 35, 39,51, 52, 58, 66, 68, 70, 76, or 92.

113. The VLP of any one of claims 1 to ~~12~~10, wherein the L1 protein sequence comprises SEQ ID NO:221 or SEQ ID NO:222.

124. The VLP of any one of claims 1 to ~~13~~11, wherein the linker peptide is attached to the L1 protein by conjugation, and where the linker peptide is conjugated to one or more of a DE loop, HI loop, or a helix B4 loop of the L1 protein.

135. The VLP of any one of claims ~~2~~ 1 to ~~14~~12, wherein the cleavage site is any one or more of SEQ ID NO:209 to 213.

146. The VLP of any one of claims ~~2~~ 1 to ~~15~~13, wherein the cleavage site is one or more of a furin cleavage sequence, a matrix metalloprotease cleavage sequence, or an ADAM cleavage sequence.

~~17~~15. The VLP of any one of claims ~~2~~ 1 to ~~16~~14, wherein the cleavage site is recognized by a protease present in a tumor microenvironment.

~~18~~16. The VLP of any one of claims ~~2~~ 1 to ~~17~~15, wherein when the VLP is contacted by a protease that recognizes and cleaves the linker at the cleavage site, then the antigen is released from the VLP.

~~19~~17. The VLP of claim ~~18~~16, wherein the T cell epitope is capable of being recognized by a pre-existing memory CD8+ T cell in a subject.

1820. The VLP of any one of claims ~~6~~ 1 to ~~19~~17, wherein the target peptide is conjugated to ~~the~~ cysteine, lysine, and/or arginine residues of the L1 protein, and wherein at least 30 percent

or from 35 to 100 percent of the cysteine, lysine, and/or arginine residues of the L1 protein are conjugated to an antigen.

1921. Use of the VLP of any one of claims 1 to 2018, in the manufacture of a medicament for inhibiting tumor growth, tumor progression, or tumor metastasis in a subject in need thereof.

2220. The use of claim 2119, which further comprises:

obtaining from the subject a tumor tissue sample; and

identifying in the tumor tissue a peptide sequence of one or more MHC molecules expressed by one or more tumor cells in the tumor tissue sample.

2321. The use of claim 21 19 or claim 2022, wherein the subject was previously immunized or vaccinated against a pathogen.

2422. The use of any one of claims 21 19 to 2321, wherein the antigen comprises an epitope that complexes with one or more MHC molecules expressed by one or more tumor cells in a tumor tissue sample obtained from the subject.

2523. The VLP of any one of claims 1 to 2018, for use in inhibiting tumor growth, tumor progression, or tumor metastasis in a subject in need thereof.

~~26~~24. The VLP of claim ~~25~~23, wherein the antigen comprises an epitope that complexes with one or more MHC molecules expressed by one or more tumor cells in a tumor tissue sample obtained from the subject.

~~27~~25. A virus-like particle (VLP), for inhibiting the growth, progression, or metastasis of a tumor in a subject, comprising:

a papilloma virus L1 protein, and

a linker peptide comprising a target peptide and at least one cleavage site,

wherein the target peptide comprises an antigen,

wherein the at least one cleavage site is between the VLP and the antigen,

wherein the linker protein is 45 amino acids or less in length,

wherein the antigen comprises at least one T cell epitope and is from 8 to 17 amino acids in length,

wherein the antigen is attached to the VLP,

~~wherein the T cell epitope is from a human pathogen~~, and

wherein the T cell epitope is capable of being recognized by a pre-existing memory CD8+ T cell in the subject having cytotoxicity that can be directed to a tumor cell,

wherein the T cell epitope is from a human pathogen which is not a peptide of a papilloma virus, and wherein the antigen is conjugated to a cysteine, lysine, or arginine residue of the L1 protein, and

wherein, when the VLP is contacted by a protease that recognizes and cleaves the linker at the cleavage site, then the antigen is released from the VLP release of the antigen from the VLP in a tumor microenvironment results in complexation of the antigen with a major histocompatibility

(MHC) molecule present on a tumor cell surface resulting in activation of T cells, thereby inhibiting growth, proliferation, and/or metastasis of the tumor cell.