What is claimed is:

1. A chimeric papilloma virus L1 protein comprising, from its N-terminus to C-terminus orientation,

a. an N-terminal fragment derived from L1 protein of the first papilloma virus type , said N-terminal fragment maintains the immunogenicity of the L1 protein of the first papilloma virus type ; and

b. a C-terminal fragment derived from L1 protein of the second papilloma virus type , said L1 protein of the second papilloma virus type has better expression level and solubility compared to the L1 proteins of other types;

wherein said chimeric papilloma virus L1 protein has the immunogenicity of the L1 protein of the first papilloma virus type .

2. The chimeric papilloma virus L1 protein according to Claim 1, wherein

said N-terminal fragment is a fragment obtained by truncating the C-terminus of the natural sequence of said L1 protein of the first papilloma virus type at any amino acid position within its α5 region, and a fragment having at least 98% identity therewith; and

said C-terminal fragment is a fragment obtained by truncating the N-terminus of the natural sequence of said L1 protein of the second papilloma virus type at any amino acid position within its α5 region, and functional variants resulting from further mutations, deletions and/or additions to the fragment;

Preferably, said N-terminal fragment has at least 98.5%, 99%, 99.5% or 100% identity to a fragment obtained by truncating the C-terminus of the natural sequence of said L1 protein of the first papilloma virus type at any amino acid position within its α5 region.

3. The chimeric papilloma virus L1 protein according to Claim 2, wherein said C-terminal fragment contains one or plurality of nuclear localization sequences.

4. The chimeric papillomavirus L1 protein according to any one of Claims 1-3, wherein said papilloma virus L1 protein is an HPV L1 protein.

5. The chimeric papilloma virus L1 protein according to any one of Claims 1-4, wherein said L1 protein of the second papilloma virus type is selected from L1 proteins of HPV Types 1, 2, 3, 4, 6, 7, 10, 11, 13, 16, 18, 22, 26, 28, 31, 32, 33, 35, 39, 42, 44, 45, 51, 52, 53, 56, 58, 59, 60, 63, 66, 68, 73, or 82;

Preferably, said L1 protein of the second HPV type is selected from L1 proteins of HPV Types 16, 28, 33, 59, or 68;

More preferably, said L1 protein of the second papilloma virus type is selected from L1 proteins of HPV Type 33 or HPV Type 59.

6. The chimeric papilloma virus L1 protein according to Claim 5, wherein said C-terminal fragment is SEQ ID No: 2; or a fragment having a length of m1 amino acids, preferably a fragment covering amino acids 1-m1 position of SEQ ID No: 2; wherein m1 is an integer of 8-26; or said C-terminal fragment is SEQ ID No: 132; or a fragment having a length of m2 amino acids, preferably covering amino acids 1-m2 position of SEQ ID No: 132; wherein m2 is an integer of 13-31.

7. The chimeric papilloma virus L1 protein according to Claim 5, wherein said C-terminal fragment is SEQ ID No: 13; or a fragment thereof having n amino acids in length, preferably a fragment covering amino acids 1-n of SEQ ID No: 13; wherein n is an integer of 16-38.

8. The chimeric papilloma virus L1 protein according to any one of Claims 1-7, wherein said L1 protein of the first papilloma virus type is selected from L1 proteins of HPV Types 6, 11, 16, 18, 31, 35, 39, 45, 51, 52, 56, or 58,

preferably, selected from

HPV type 6 L1 protein encoded by the gene thereof shown in SEQ ID No: 5,
HPV type 11 L1 protein encoded by the gene thereof shown in SEQ ID No: 18,
HPV type 16 L1 protein encoded by the gene thereof shown in SEQ ID No: 31,
HPV type 18 L1 protein encoded by the gene thereof shown in SEQ ID No: 44,
HPV type 31 L1 protein encoded by the gene thereof shown in SEQ ID No: 57,
HPV type 35 L1 protein encoded by the gene thereof shown in SEQ ID No: 70,

HPV type 39 L1 protein encoded by the gene thereof shown in SEQ ID No: 83,
HPV type 45 L1 protein encoded by the gene thereof shown in SEQ ID No: 96,
HPV type 51 L1 protein encoded by the gene thereof shown in SEQ ID No: 109,
HPV type 52 L1 protein encoded by the gene thereof shown in SEQ ID No: 122,
HPV type 56 L1 protein encoded by the gene thereof shown in SEQ ID No: 135, or
HPV type 58 L1 protein encoded by the gene thereof shown in SEQ ID No: 148.

9. The chimeric papilloma virus L1 protein according to Claim 8, wherein the L1 protein of the first papilloma virus type is selected from
HPV type 6 L1 protein shown in SEQ ID No: 1,
HPV type 11 L1 protein shown in SEQ ID No: 14,
HPV type 16 L1 protein shown in SEQ ID No: 27,
HPV type 18 L1 protein shown in SEQ ID No: 40,
HPV type 31 L1 protein shown in SEQ ID No: 53,
HPV type 35 L1 protein shown in SEQ ID No: 66
HPV type 39 L1 protein shown in SEQ ID No: 79,
HPV type 45 L1 protein shown in SEQ ID No: 92,
HPV type 51 L1 protein shown in SEQ ID No: 105,
HPV type 52 L1 protein shown in SEQ ID No: 118,
HPV type 56 L1 protein shown in SEQ ID No: 131, or
HPV type 58 L1 protein shown in SEQ ID No: 144.

10. The chimeric papilloma virus L1 protein according to any one of Claims 1 to 9, said C-terminus of said N-terminal fragment is connected to the N-terminus of said C-terminal fragment directly or via a linker.

11. The chimeric papilloma virus L1 protein according to any one of Claims 1 to 10, wherein when the C-terminus of said N-terminal fragment is connected to the N-terminus of said C-terminal fragment, the continuous amino acid sequence RKFL is present within a range of plus or minus 4 amino acid positions of the connection point;

Preferably, the continuous amino acid sequence LGRKFL is present within a range of plus or minus 6 amino acid positions of the connection point.

12. The chimeric papillomavirus L1 protein according to claim 11, selected from chimeric HPV L1 protein of HPV Types 6, 11, 16, 18, 31, 35, 39, 45, 51, 52, 56, and 58 has 98%, 98.5%, 99%, 99.5% or 100% identity to SEQ ID No: 3, SEQ ID No: 16, SEQ ID No: 29, SEQ ID No: 42, SEQ ID No: 55, SEQ ID No: 68, SEQ ID No: 81, SEQ ID No: 94, SEQ ID No: 107, SEQ ID No: 120, SEQ ID No: 133 and SEQ ID No: 146, respectively.

13. A papilloma virus-like particle, comprising the chimeric papilloma virus L1 protein of any one of Claims 1 to 12.

14. An immunogenic composition for the prevention of papilloma virus-associated diseases or infections, comprising the papilloma virus-like particles according to Claim 13 and adjuvants.

15. An isolated polynucleotide encoding the chimeric papilloma virus L1 protein of any one of Claims 1 to 12.

16. The polynucleotide according to claim 15, selected from
the nucleotide sequence encoding the chimeric HPV type 6 L1 protein which is shown in SEQ ID No: 4,
the nucleotide sequence encoding the chimeric HPV type 11 L1 protein which is shown in SEQ ID No: 17,
the nucleotide sequence encoding the chimeric HPV type 16 L1 protein which is shown in SEQ ID No: 30,
the nucleotide sequence encoding the chimeric HPV type 18 L1 protein which is shown in SEQ ID No: 43,
the nucleotide sequence encoding the chimeric HPV type 31 L1 protein which is shown in SEQ ID No: 56,
the nucleotide sequence encoding the chimeric HPV type 35 L1 protein which is shown in SEQ ID No: 69,
the nucleotide sequence encoding the chimeric HPV type 39 L1 protein which is shown

in SEQ ID No: 82,
the nucleotide sequence encoding the chimeric HPV type 45 L1 protein which is shown in SEQ ID No: 95,
the nucleotide sequence encoding the chimeric HPV type 51 L1 protein which is shown in SEQ ID No: 108,
the nucleotide sequence encoding the chimeric HPV type 52 L1 protein which is shown in SEQ ID No: 121,
the nucleotide sequence encoding the chimeric HPV type 56 L1 protein which is shown in SEQ ID No: 134, or
the nucleotide sequence encoding the chimeric HPV type 58 L1 protein which is shown in SEQ ID No: 147.

17. A vector comprising the polynucleotide according to Claim 15 or 16.

18. The vector according to Claim 17, wherein said vector is a baculovirus vector.

19. A baculovirus comprising the polynucleotide according to Claim 15 or 16.

20. A host cell comprising a polynucleotide according to Claim 15 or 16, a vector according to Claims17 or 18, or a baculovirus according to Claim 19.

21. A host cell according to Claim 20, which is an insect cell, preferably said insect cell is selected from Sf9 cells, Sf21 cells, Hi5 cells and S2 cells.

22. A method for preparing a papilloma virus-like particle according to Claim 11, comprising,

culturing host cells of any one of Claims 20-21 to express said chimeric papilloma virus L1 protein and to assemble into virus-like particles; and

purifying said papillomavirus-like particles.

23. The method according to Claim 22, wherein said purification is carried out

using cation exchange chromatography, preferably, said cation exchange chromatography is HS-MMA two-step chromatography.