CLAIMS

1. A recombinant Human cytomegalovirus gL protein wherein said gL protein comprises a mutation at Protease Recognition Site residues 91-102 numbered according to SEQ ID NO: 1, wherein said mutation reduces protease cleavage between residues 97 and 98 numbered according to SEQ ID NO: 1, as compared to a control, and wherein said mutation comprises:

    a) addition of one or more amino acid residues;

    b) deletion of one to three amino acid residues;

    c) substituting a residue with a corresponding residue from the gL protein of HSV1, HSV2, VZV, EBV, PrV, or bovine herpesvirus 5;

    d) substituting A96 with a non-polar residue or with a residue that comprises a large side chain;

    e) substituting A95 with R, L, E or N;

    f) substituting N97 with a polar residue or a non-polar residue;

    g) substituting S98 with an amino acid residue with a small side chain;

    h) substituting V99 with I;

    i) substituting L100 with an amino acid residue with F or V;

    j) substituting L101 with an amino acid residue with V or I;

    or a combination thereof.

2. The gL protein, or fragment, of claim 1, wherein the addition in a) comprises addition of one or more residues between residues N97 and S98, preferably addition of F, Q, FQ or QF between residues N97 and S98.

3. The gL protein, or fragment, of any one of claims 1 and 2, wherein the deletion in b) comprises deletion of a residue selected from the group consisting of: A95, A96, N97, and a combination thereof.

4. The gL protein, or fragment, of any one of claims 1-3, wherein the substitution of A96 in d) is with I, L, V or S.

5. The gL protein, or fragment, of any one of claims 1-4, wherein the substitution of N97 in f) is with a polar residue comprising a small side chain.

6. The gL protein or fragment of any one of claims 1-4, wherein the substitution of N97 in f) is with a polar residue comprising a large side chain.

7. The gL protein or fragment of any one of any one of claims 1-6, wherein the substitution of S98 in g) is with G, T, V, or I.

8. A recombinant Human cytomegalovirus gL protein wherein said gL protein comprises a mutation at Protease Recognition Site residues 91-102 numbered according to SEQ ID NO: 1, wherein said mutation reduces protease cleavage between residues 97 and 98 numbered according to SEQ ID NO: 1, as compared to a control and wherein said mutation is the triple mutation A96L/N97S/S98G.

9. A recombinant Human cytomegalovirus gL protein wherein said gL protein comprises a mutation at Protease Recognition Site residues 91-102 numbered according to SEQ ID NO: 1, wherein said mutation reduces protease cleavage between residues 97 and 98 numbered according to SEQ ID NO: 1, as compared to a control and wherein said mutation is the triple mutation A96I/N97D/S98G.

10. A Human cytomegalovirus protein complex comprising the recombinant gL protein of any one of claims 1-9.

11. The complex of claim 10, wherein said complex is a pentameric complex comprising: gH or a pentamer-forming fragment thereof, the recombinant gL protein of any one of claims 1-9, pUL128 , pUL130, and pUL131.

12. The complex of claim 11, comprising a pentamer-forming fragment of gH that lacks a transmembrane domain.

13. An isolated nucleic acid comprising a polynucleotide sequence encoding the recombinant cytomegalovirus gL protein, or fragment, of any one of claims 1-9.

14. The isolated nucleic acid molecule of claim 13, wherein the nucleic acid molecule is a vector.

15. A host cell, preferably a mammalian host cell, comprising the nucleic acid of claim 13.

16. The host cell of claim 15, wherein said host cell comprises one or more polynucleotide sequences encoding cytomegalovirus pentameric complex, said pentameric complex comprising: gH or a pentamer-forming fragment thereof, gL, pUL128, pUL130, and pUL131.

17. An immunogenic composition comprising the recombinant cytomegalovirus gL protein, or fragment, of any of one of claims 1-9, or the complex of any one of claims 10-12, and optionally comprising an adjuvant.

18. The immunogenic composition of claim 17 for use in inducing an immune response against cytomegalovirus.

19. The immunogenic composition of claim 17 for use in treating a subject by inhibiting cytomegalovirus entry into a cell of the subject.

20. Use of the immunogenic composition of claim 17 in the manufacture of a medicament for inducing an immune response against cytomegalovirus.

21. Use of the immunogenic composition of claim 17 in the manufacture of a medicament for treating a subject by inhibiting cytomegalovirus entry into a cell of the subject.