Claims

1. A recombinant virus-like particle comprising two or more different epitopes or different proteins comprising epitopes which are selected either (a) from different viral strains of the same virus and/or (b) from different serotypes of the same virus and/or (c) from different viral strains specific for different hosts.

2. The recombinant virus-like particle according to claim 1 comprising three or more different epitopes or different proteins comprising epitopes.

3. The recombinant virus-like particle according to claim 1 comprising four or more different epitopes or different proteins comprising epitopes.

4. The recombinant virus-like particle according to claim 1 comprising six, nine or twelve epitopes or different proteins comprising epitopes.

5. The recombinant virus-like particle according to any of the preceding claims wherein the epitopes are from three or more different virus strains or serotypes.

6. The recombinant virus-like particle according to any of the preceding claims further comprising B- and/or T-cell epitopes.

7. The recombinant virus-like particle according to any of the preceding claims further comprising proteins forming a complete virus-like surface and optionally capsid and/or nucleopore proteins.

8. The recombinant virus-like particle according to any of the preceding claims further comprising fluorescent proteins, proteins useful for purification purposes of the particles or for attaching a label, and/or proteinaceous structures required for transport processes.

9. The recombinant virus-like particle according to any of the preceding claims wherein the virus is influenza virus.

10. The recombinant virus-like particle according to any of the preceding claims wherein the virus is human papilloma virus.

11. A vector comprising two or more polynucleotides coding for different epitopes or for different proteins comprising epitopes which are selected either (a) from different viral strains of the same virus and/or (b) from different serotypes of the same virus and/or (c) from different viral strains specific for different hosts.

12. The vector according to claim 11 encoding a recombinant virus-like particle according to any of claims 1 to 10.

13. The vector according to claims 11 or 12 which is a baculoviral vector.

14. The vector according to claim 11 comprising a polynucleotide sequence selected from SEQ ID NO: 1 to 5.

15. A host cell comprising a vector according to any of claims 11 to 14.

16. A vaccine comprising a recombinant virus-like particle according any of claims 1 to 10.

Claims

1. A recombinant virus-like particle comprising two or more different epitopes or different proteins comprising epitopes which are selected either (a) from different viral strains of the same virus and/or (b) from different serotypes of the same virus and/or (c) from different viral strains specific for different hosts, wherein said virus-like particle is encoded by a baculoviral vector and produced in insect cells.

2. The recombinant virus-like particle according to claim 1 comprising three or more different epitopes or different proteins comprising epitopes.

3. The recombinant virus-like particle according to claim 1 comprising four or more different epitopes or different proteins comprising epitopes.

4. The recombinant virus-like particle according to claim 1 comprising six, nine or twelve epitopes or different proteins comprising epitopes.

5. The recombinant virus-like particle according to any of the preceding claims wherein the epitopes are from three or more different virus strains or serotypes.

6. The recombinant virus-like particle according to any of the preceding claims further comprising B- and/or T-cell epitopes.

7. The recombinant virus-like particle according to any of the preceding claims further comprising proteins forming a complete virus-like surface and optionally capsid and/or nucleopore proteins.

8. The recombinant virus-like particle according to any of the preceding claims further comprising fluorescent proteins, and/or proteins useful for purification purposes of the particles or for attaching a label.

9. The recombinant virus-like particle according to any of the preceding claims wherein the virus is influenza virus.

10. The recombinant virus-like particle according to any of the preceding claims wherein the virus is human papilloma virus.

11. A baculoviral vector encoding a recombinant virus-like particle according to any of claims 1 to 10.

12. The vector according to claim 11 comprising a polynucleotide sequence selected from SEQ ID NO: 1 to 5.

13. A host cell comprising a vector according to claim 11 or 12.

14. A vaccine comprising a recombinant virus-like particle according any of claims 1 to 10.