CLAIMS

What is claimed is:

1. An immunogenic composition comprising a plurality of recombinant influenza virus proteins, wherein the plurality of recombinant influenza virus proteins comprises:

a first recombinant influenza virus hemagglutinin (HA), wherein the first recombinant influenza virus HA is an H1 HA;

a second recombinant influenza virus HA, wherein the second recombinant influenza virus HA is an H3 HA;

a third recombinant influenza virus HA, wherein the third recombinant influenza virus HA is from a B/Victoria lineage;

a first recombinant influenza virus neuraminidase (NA), wherein the first recombinant influenza virus NA is an N1 NA;

a second recombinant influenza virus NA, wherein the second recombinant influenza virus NA is an N2 NA; and

a third recombinant influenza virus NA, wherein the third recombinant influenza virus NA is from a B/Victoria lineage,

wherein the immunogenic composition does not contain inactivated influenza virions or live attenuated influenza virions and wherein, following production by expression, each of the recombinant influenza virus HAs and each of the recombinant influenza virus NAs is isolated and/or purified.

2. The immunogenic composition according to claim 1, wherein each of the first, second, and third recombinant influenza virus NA is a modified recombinant influenza virus NA.

3. The immunogenic composition according to claim 2, wherein the modified recombinant influenza virus NA comprises a modified recombinant tetrameric influenza virus NA comprising four modified monomeric NA molecules, each comprising a head region of the NA of the influenza virus, but lacking a cytoplasmic tail, a transmembrane region, and all or substantially all of a stalk region of the NA of the influenza virus and wherein the modified monomeric NA molecules form modified recombinant tetrameric NA when expressed in a host cell.

4. The immunogenic composition according to claim 3, wherein each modified recombinant monomeric influenza virus NA comprises a heterologous tetramerization domain.

5. The immunogenic composition according to claim 3, wherein each modified recombinant monomeric influenza virus NA does not comprise a heterologous oligomerization domain.

6. The immunogenic composition according to claim 4, wherein the heterologous tetramerization domain is a *Staphylothermus marinus* tetrabrachion tetramerization domain, a GCN4 leucine zipper tetramerization domain, a tetramerization domain from a paramyxovirus phosphoprotein, or a human vasodilator stimulated phosphoprotein (VASP) tetramerization domain.

7. The immunogenic composition according to any one of claims 1-5, wherein each of the recombinant influenza virus HA is produced by a baculovirus expression system in cultured insect cells and/or wherein each of the recombinant influenza virus NA is produced in Chinese Hamster Ovary (CHO) cells.

8. The immunogenic composition according to any one of claims 1-7, wherein each of the recombinant influenza virus HAs and/or each of the recombinant influenza virus NAs are from standard of care influenza strains.

9. The immunogenic composition according to any one of claims 1-8, wherein the H1 HA is from an H1N1 influenza virus strain and/or the H3 HA is from an H3N2 influenza virus strain and/or wherein the N1 NA is from an H1N1 influenza virus strain and/or the N2 NA is from an H3N2 influenza virus strain.

10. The immunogenic composition according to any one of claims 1-9, wherein the H1 HA is from an H1N1 influenza virus strain, the H3 HA is from an H3N2 influenza virus strain, the N1 NA is from an H1N1 influenza virus strain, and the N2 NA is from an H3N2 influenza virus strain.

11. The immunogenic composition of claim 10, wherein the H1 HA and the N1 NA are from the same H1N1 influenza virus strain and the H3 HA and N2 NA are from the same H3N2 influenza virus strain.

12. The immunogenic composition according to any one of claims 1-11, wherein the plurality of recombinant influenza virus proteins consists of:

a first recombinant influenza virus HA, wherein the first recombinant influenza virus HA is an H1 HA;

a second recombinant influenza virus HA, wherein the second recombinant influenza virus HA is an H3 HA;

a third recombinant influenza virus HA, wherein the third recombinant influenza virus HA is from a B/Victoria lineage;

a first recombinant influenza virus NA, wherein the first recombinant influenza virus NA is an N1 NA;

a second recombinant influenza virus NA, wherein the second recombinant influenza virus NA is an N2 NA; and

a third recombinant influenza virus NA, wherein the third recombinant influenza virus NA is from a B/Victoria lineage.

13. The immunogenic composition according to any one of claims 1-12, wherein the composition further comprises an adjuvant, preferably a squalene-in-water adjuvant or a liposome-based adjuvant, wherein the squalene-in-water adjuvant optionally comprises AF03 and wherein the liposome-based adjuvant optionally comprises SPA14.

14. The immunogenic composition according to any one of claims 1-13, wherein each of the recombinant influenza virus HAs is present in the composition in an amount ranging from 0.1 mg to 90 mg, optionally 1 mg to 60 mg or 5 mg to 45 mg and/or wherein each of the recombinant influenza virus NAs is present in the composition in an amount ranging from 0.1 mg to 90 mg, optionally 1 mg to 60 mg or 5 mg to 45 mg.

15. The immunogenic composition according to any one of claims 1-14, wherein the composition is formulated for intramuscular injection.

16. A vaccine comprising the immunogenic composition according to any one of claims 1-15 and a pharmaceutical carrier.

17. Use of a vaccine according to claim 16 for the manufacture of a medicament for immunizing a subject against influenza virus.

18. The use of claim 17, wherein the vaccine prevents influenza virus infection in the subject.

19. The use of claim 17 or 18, wherein the vaccine raises a protective immune response in the subject.

20. The use of claim 19, wherein the protective immune response comprises an HA antibody response and/or an NA antibody response.

21. The use of any one of claims 17-20, wherein the subject is human.

22. The use of any one of claims 17-21, wherein the vaccine is formulated to be administered intramuscularly, intradermally, subcutaneously, intravenously, intranasally, by inhalation, or intraperitoneally.

23. The use of any one of claims 17-22, wherein the vaccine prevents disease caused by either or both a seasonal and a pandemic influenza strain.

24. The use of any one of claims 1-23, wherein the subject is human and the human is 6 months of age or older, less than 18 years of age, at least 6 months of age and less than 18 years of age, at least 18 years of age and less than 65 years of age, at least 6 months of age and less than 5 years of age, at least 5 years of age and less than 65 years of age, at least 60 years of age, or at least 65 years of age.

25. Use of a vaccine according to claim 16 for the manufacture of a medicament for reducing one or more symptoms of influenza virus infection in a subject.

26. Use of a vaccine according to claim 16 for the manufacture of a medicament for enhancing or broadening a protective immune response in a subject, wherein the vaccine increases the vaccine efficacy of a standard of care influenza virus vaccine composition by an amount ranging from 5% to 100%, such as at least 20%, or from 40% to 80%, such as from 40% to 60%.

27. The use according to claim 26, wherein the standard of care influenza virus vaccine composition is an inactivated influenza virus composition comprising inactivated influenza virus from an H1N1 strain, an H3N2 strain, and a B/Victoria lineage, or wherein the standard of care influenza virus vaccine composition comprises recombinant influenza virus HA from an H1N1 strain, an H3N2 strain, and a B/Victoria lineage.

28. The use of any one of claims 17-27, wherein the vaccine is formulated for administration to the subject in two doses of the vaccine with an interval of 2-6 weeks, optionally 4 weeks, between doses.

29. The immunogenic composition according to any one of claims 1-15, wherein at least one of the recombinant influenza virus HAs and/or at least one of the recombinant influenza virus NAs are encoded by an artificial nucleic acid molecule.