CLAIMS

We claim:

1. An immunogenic composition ~~for stimulating an immune response against a varicella zoster virus (VZV)~~, comprising: a varicella zoster virus (VZV) glycoprotein E (gE) antigen and a toll-like receptor 9 (TLR9) agonist, wherein the TLR9 agonist is an oligonucleotide of from 10 to 35 nucleotides in length comprising an unmethylated cytidine-phospho-guanosine (CpG) motif~~, and the gE antigen and the oligonucleotide are present in the immunogenic composition in amounts effective to stimulate an immune response against the gE antigen in a mammalian subject~~.

2. The immunogenic composition of claim 1, wherein the oligonucleotide comprises the sequence 5'-AACGTTCGAG-3' (SEQ ID NO:3).

3. The immunogenic composition of claim 1, wherein the oligonucleotide comprises the sequence of 5'-TGACTGTGAA CGTTCGAGAT GA-3' (SEQ ID NO:1).

4. The immunogenic composition of any one of claims 1-3, wherein the oligonucleotide comprises a modified nucleoside~~, optionally wherein the modified nucleoside is~~ selected from the group consisting of 2'-deoxy-7-deazaguanosine, 2'-deoxy-6-thioguanosine, arabinoguanosine, 2'-deoxy-2'substituted-arabinoguanosine, and 2'-O-substituted-arabinoguanosine.

5. The immunogenic composition of any one of claims 1-4, wherein the VZV gE antigen and the oligonucleotide are present in the immunogenic composition in amounts effective to stimulate an immune response against the VZV gE antigen in a mammalian subject~~laim 4, wherein the oligonucleotide comprises the sequence 5'-TCG$_1$AACG$_1$TTCG$_1$-3' (SEQ ID NO:2) in which G$_1$ is 2'-deoxy-7-deazaguanosine, optionally wherein the oligonucleotide comprises the sequence 5'-TCG$_1$AACG$_1$TTCG$_1$-X-G$_1$CTTG$_1$CAAG$_1$CT-5', and in which G$_1$ is 2'-deoxy-7-deazaguanosine and X is glycerol (5' SEQ ID NO:2 3' X 3' SEQ ID NO:2 5')~~.

6. The immunogenic composition of any one of claims 1-53, wherein the oligonucleotide comprises at least one phosphorothioate linkage, or wherein all nucleotide linkages are phosphorothioate linkages.

7. The immunogenic composition of any one of claims 1-6, wherein the oligonucleotide is a single-stranded oligodeoxynucleotide.

8. The immunogenic composition of any one of claims 1-76, wherein a 0.5 ml dose of the immunogenic composition comprises from about 375 µg to about 6000 µg of the oligonucleotide or from about 750 µg to about 3000 µg of the oligonucleotide, or wherein a 0.5 ml dose of the immunogenic composition comprises about 375 µg, about 750 µg, about 1500 µg, about 3000 µg, or 6000 µg about of the oligonucleotide.

9. The immunogenic composition of any one of claims 1-8, wherein the VZV gE antigen is a truncated, recombinant protein devoid of signal peptide, transmembrane and cytoplasmic domains of a full-length VZV gE antigen.

10. The immunogenic composition of any one of claims 1-9, wherein a 0.5 ml dose of the immunogenic composition comprises from about 10 µg25 to about 10075 µg of the VZV gE antigen, or wherein the immunogenic composition comprises from about 40 to about 60 µg of the gE antigen, or about 50 µg of the gE antigen.

11. The immunogenic composition of any one of claims 1-10, further comprising an aluminum salt adjuvant.

12. The immunogenic composition of claim 11, wherein the aluminum salt adjuvant comprises one or more of the group consisting of amorphous aluminum hydroxyphosphate sulfate, aluminum hydroxide, aluminum phosphate, and potassium aluminum sulfate.

13. The immunogenic composition of claim 11, wherein the aluminum salt adjuvant comprises aluminum hydroxide.

14. The immunogenic composition of any one of claims 11-13, wherein a 0.5 ml dose of the immunogenic composition comprises from about 0.25 to about 0.50 mg Al^{3+}, or wherein a 0.5 ml dose of the immunogenic composition comprises from about 0.30 to about 0.40 mg Al^{3+}.

15. The immunogenic composition of any one of claims 1-14, wherein the mammalian subject is a human subject.

16. A kit comprising:

i) the immunogenic composition of any one of claims 1-15, and

ii) instructions for administration of the immunogenic composition to stimulate an immune response against the VZV gE antigen in the mammalian subject.

17. A kit comprising:

i) a first composition comprising a varicella zoster virus (VZV) glycoprotein E (gE) antigen ~~of a varicella zoster virus~~;

ii) a second composition comprising a TLR9 agonist; and

iii) instructions for mixing the first composition with the second composition to prepare an immunogenic composition.

18. The kit of claim 17, further comprising:

iv) a further set of instructions for administration of the immunogenic composition to stimulate an immune response against the VZV gE antigen in a mammalian subject.

19. The kit of claim 18, further comprising a syringe and needle for intramuscular injection of the immunogenic composition.

20. Use of ~~A method for stimulating an immune response against varicella zoster virus (VZV) in a mammalian subject, comprising administering~~ the immunogenic composition of any one of claims 1-15 in the manufacture of a medicament for stimulating an immune response against varicella zoster virus (VZV) in a mammalian subject~~to a mammalian subject so as to stimulate an immune response against the gE antigen in the mammalian subject~~.

21. The ~~method~~ use of claim 20, wherein the immunogenic composition is to be administered by intramuscular injection.