CLAIMS

We claim the following:

1. ~~A method for inducing an immune response specific for an immunogen in a subject, said method comprising administering concurrently or sequentially to the subject~~ Use of (a) a first composition comprising a vector particle, the vector particle comprising a recombinant expression vector wherein the recombinant expression vector comprises a polynucleotide encoding the immunogen, and wherein the polynucleotide is operatively linked to at least one regulatory expression sequence; and (b) a second composition comprising a pharmaceutically suitable adjuvant, wherein the first composition and the second composition each further comprise a pharmaceutically suitable excipient, in the manufacture of a medicament for inducing an immune response specific for an immunogen in a subject, wherein said compositions are to be administered concurrently or sequentially to the subject.

2. The ~~method~~ use of claim 1, wherein the first composition and the second composition are to be administered concurrently, and wherein the first composition is to be administered to the subject at a first site and the second composition is to be administered to the subject at a second site, wherein the first site and the second site are different.

3. The ~~method~~ use of claim 2, wherein the first composition is to be administered at the first site via a first route and the second composition is to be administered at the second site via a second route.

4. The ~~method~~ use of claim 3, wherein the first route and the second route are different and each is selected from parenteral, enteral, oral, intramuscular, intradermal, subcutaneous, intratumoral, intranodal, intranasal, transdermal, inhalation, mucosal, and topical.

5. The ~~method~~ use of claim 3, wherein the first route and the second route are each the same and selected from parenteral, intramuscular, intradermal, subcutaneous, intratumoral, intranodal, percutaneous, transdermal, and topical.

6. The ~~method~~ use of claim 1, wherein the first composition and the second composition are to be administered sequentially.

7. The ~~method~~ use of claim 6, wherein the first composition is to be administered to the subject at a first site and the second composition is to be administered to the subject at a second site, wherein the first site and the second site are the same or different.

8. The ~~method~~ use of claim 7, wherein the first composition is to be administered at the first site via a first route and the second composition is to be administered at the second site via a second route.

9. The ~~method~~ use of claim 8, wherein the first route and the second route are different and each is selected from parenteral, enteral, oral, intramuscular, intradermal, subcutaneous, intratumoral, intranodal, intranasal, transdermal, inhalation, mucosal, and topical.

10. The ~~method~~ use of claim 8, wherein the first route and the second route are each the same and selected from parenteral, enteral, oral, intramuscular, intradermal, subcutaneous, intratumoral, intranodal, intranasal, transdermal, inhalation, mucosal, and topical.

11. The ~~method~~ use of claim 8, wherein the first site and the second site are the same, and wherein the first route and the second route are different and each route is selected from parenteral, intramuscular, intradermal, subcutaneous, intratumoral, intranodal, percutaneous, transdermal, and topical.

12. The ~~method~~ use of any one of claims 6-11, wherein the first composition is to be administered prior to administration of the second composition.

13. The ~~method~~ use of any one of claims 6-11, wherein the second composition is to be administered prior to administration of the first composition.

14. The ~~method~~ use of any one of claims 1-13, wherein the recombinant expression vector is selected from a lentiviral vector genome, poxvirus vector genome, vaccinia virus vector genome, adenovirus vector genome, adenovirus-associated virus vector genome, herpes virus vector genome, alpha virus vector genome, and plasmid DNA.

15. The ~~method~~ use of claim 14, wherein the vector particle is a lentiviral vector particle that comprises the lentiviral vector genome; a poxvirus vector particle that comprises the poxvirus vector genome; a vaccinia virus vector particle that comprises the vaccinia virus vector genome; an adenovirus vector particle that comprises the adenovirus vector genome; an adenovirus-associated virus vector particle that comprises the adenovirus-associated virus vector genome; a herpes virus vector particle that comprises the herpes virus vector genome; or an alpha virus vector particle that comprises the alpha virus vector genome.

16. The ~~method~~ use of claim 16, wherein the vector particle is the lentiviral vector particle and comprises the lentiviral vector genome.

17. The ~~method~~ use of claim 15 or claim 16, wherein the lentiviral vector particle further comprises an envelope comprising a Sindbis virus E2 glycoprotein having at least one amino acid change compared to SEQ ID NO:1, wherein residue 160 is either absent or an amino acid other than glutamic acid, and wherein E2 glycoprotein is not part of a fusion protein with Sindbis virus E3 protein.

18. The ~~method~~ use of any one of claims 1-17, wherein the vector particle delivers the recombinant expression vector to an antigen-presenting cell.

19. The ~~method~~ use of claim 18, wherein the antigen-presenting cell is a dendritic cell.

20. The ~~method~~ use of any one of claims 1-19, wherein the immunogen is a tumor-associated antigen.

21. The ~~method~~ use of claim 20, wherein the tumor-associated antigen is selected from a renal cell carcinoma antigen, a prostate cancer antigen, a mesothelioma antigen, a pancreatic cancer antigen, a melanoma antigen, a breast cancer antigen, a lung cancer antigen, or an ovarian cancer antigen.

22. The ~~method~~ use of claim 21, wherein the prostate cancer antigen is prostatic acid phosphatase, prostate specific antigen, NKX3.1, or prostate specific membrane antigen.

23. The ~~method~~ use of claims 21, wherein the renal cell carcinoma antigen is carbonic anhydrase IX.

24. The ~~method~~ use of any one of claims 1-19, wherein the immunogen is from an infectious microorganism selected from a virus, a bacterium, a fungus, or a parasite.

25. The ~~method~~ use of any one of claims 1-24, wherein the induced immune response comprises a cytotoxic T lymphocyte immune response.

26. The ~~method~~ use of any one of claims 1-25, wherein the induced immune response comprises production of an immunogen specific antibody.

27. The ~~method~~ use of any one of claims 1-26, wherein the adjuvant is a non-toxic lipid A-related adjuvant.

28. The ~~method~~ use of claim 27, wherein the non-toxic lipid A-related adjuvant is glucopyranosyl lipid A (GLA).

29. The ~~method~~ use of claim 28, wherein GLA is formulated in a stable oil-in-water emulsion.

30. The ~~method~~ use of any one of claims 1-29, wherein the second composition comprising the adjuvant inhibits induction of the immune response to the immunogen when

(a) the second composition is to be administered together with the first composition as a single composition; or (b) the first composition and the second composition are to be administered concurrently at the same site and via the same route.