WHAT IS CLAIMED IS:

1. A composition for preparation of a lyophilized vaccine comprising at least one antigen adsorbed to an aluminum adjuvant and greater than ~~at least~~ 20%, greater than 25%, or greater than 30% (w/v) ~~non-reducing~~ sugar.

2. The composition of claim 1, which is a ~~A~~ temperature stable liquid vaccine ~~composition comprising at least one antigen adsorbed to an aluminum adjuvant and at least 20% (w/v) sugar~~.

3. ~~A~~The composition of claim 1, wherein ~~comprising~~, prior to lyophilization, ~~at least one antigen absorbed to an aluminum adjuvant and at least 20% (w/v)~~ the ~~non-reducing~~ sugar is greater than 20% (w/v), and wherein after reconstitution the ~~non-reducing~~ sugar is at least 6% (w/v).

4. The composition of ~~any one of claims~~ claim 1~~-3~~, ~~wherein the composition~~ further comprise~~s~~ing a surfactant.

~~5. A composition comprising at least one antigen adsorbed to an aluminum adjuvant, a surfactant and at least 15% (w/v) sugar for preparation of a lyophilized vaccine.~~

~~6. A temperature stable liquid vaccine composition comprising at least one antigen adsorbed to an aluminum adjuvant, a surfactant and at least 15% (w/v) sugar.~~

~~7~~5. The composition of ~~any one of claims~~ claim 1~~-6~~, ~~wherein said composition~~ further comprise~~s~~ing an amino acid.

~~8. A composition for preparation of a lyophilized vaccine comprising at least one antigen adsorbed to an aluminum adjuvant, a surfactant, an amino acid and at least 10% (w/v) sugar.~~

~~9. A stable liquid vaccine composition comprising at least one antigen adsorbed to an aluminum adjuvant, a surfactant, an amino acid and at least 10% (w/v) sugar.~~

~~10~~6. The composition of ~~any one of claims~~ claim 1~~-9~~, wherein the aluminum adjuvant is selected from the group consisting of aluminum phosphate, ~~and~~ aluminum sulfate, and aluminum hydroxide.

~~11. The composition of any one of claims 1-9, wherein the aluminum adjuvant is aluminum hydroxide.~~

~~12~~7. The composition of claim ~~11~~6, wherein the composition contains about 0.5 to 1.5 mg/ml aluminum hydroxide.

~~13. The composition of claim 12, wherein the composition contains about 0.5 mg/ml aluminum hydroxide.~~

~~14. The composition of claim 12, wherein the composition contains about 1.5 mg/ml aluminum hydroxide.~~

~~15~~8. The composition of ~~any one of claims~~ claim ~~14~~14, wherein the surfactant is ~~selected from the group consisting of polysorbate 80 and~~ polysorbate 20.

~~16~~9. The composition of claim ~~15~~4, wherein the surfactant is polysorbate 80.

~~17. The composition of any one of claims 4-16, wherein the composition contains about 0.020% or 0.025% (w/v) surfactant.~~

~~18~~10. The composition of ~~claims~~ claim 1~~-17~~, wherein the sugar is a non-reducing sugar selected from the group consisting of trehalose, sucrose, and a combination thereof.

~~19. The composition of claims 18, wherein the sugar is trehalose.~~

~~20. The composition of claims 18, wherein the sugar is sucrose.~~

~~21. The composition of claim 18, wherein the sugar is trehalose and sucrose.~~

~~22~~11. The composition of claim 1~~any one of claims 5-21~~, wherein the composition contains about ~~15~~20-40% (w/v) sugar.

~~23. The composition of any one of claim 1-22, wherein the composition contains about 20-40% (w/v) sugar.~~

~~24. The composition of claim 23, wherein the composition contains about 20-35% (w/v) sugar.~~

~~25. The composition of claim 24, wherein the composition contains about 25-40% (w/v) sugar.~~

~~26. The composition of any one of claims 1-25, wherein the composition contains greater than about 20%, 21%, 22%, 23%, 24% and 25% (w/v) sugar.~~

~~27~~12. The composition of ~~any one of claims~~ claim 1-~~26~~, wherein the antigen is an Anthrax antigen.

~~28~~13. The composition of claim ~~27~~12, wherein the Anthrax antigen is protective antigen.

~~29~~14. The composition of claim ~~28~~13, wherein the protective antigen ~~is~~ has at least about 80% sequence identity to ~~the~~ a polypeptide comprising the sequence of SEQ ID NO: 2.

~~30~~15. The composition of ~~any one of claims~~ claim ~~28~~13-~~29~~, wherein the composition comprises about 150-500 μg/ml protective antigen.

~~31. The composition of claim 30, wherein the composition comprises about 150, 175, 200, 225, 250, 275, 300, 325, 400, 375, 400, 425, 450, 475 or 500 μg/ml protective antigen~~

~~32~~16. The composition of claim ~~31~~12, wherein the Anthrax antigen is a cell-free filtrate from an avirulent *B. anthracis* strain.

~~33~~17. The composition of claim ~~32~~16, wherein the avirulent *B. anthracis* strain is V770-NP1-R.

~~34. The composition of any one of claims 7-33 wherein the amino acid is selected from the group consisting of arginine, alanine, proline, glycine, and any combination thereof.~~

~~35. The composition of claim 34, wherein the composition contains about 0.5-4% (w/v) alanine or arginine.~~

~~36~~18. The composition of claim 4~~0~~5, wherein ~~the composition contains about 2% (w/v) alanine or arginine~~the amino acid is selected from the group consisting of arginine, alanine, proline, glycine, and any combination thereof.

~~37~~19. The composition of claim ~~34~~18, wherein the composition contains (i) about 0.5-4% (w/v) alanine or arginine or (ii) about 6-12% (w/v) glycine.

~~38. The composition of claim 37, wherein the composition contains about 10% (w/v) glycine.~~

~~39. The composition of any one of claims 1, 3-5, 7, 8, and 10-38, wherein said composition is subjected to sublimation under vacuum to produce a lyophilized composition.~~

~~40~~20. A lyophilized composition, which is lyophilized from the composition of claim 1~~any one of claims 1, 3-5, 7, 8, and 10-38~~.

~~41~~21. A reconstituted composition comprising the lyophilized composition of claim ~~39 or 40~~ 20 reconstituted in an aqueous solution.

~~42. The reconstituted composition of claim 41, wherein the aqueous solution is selected from the group consisting water, Tris-EDTA (TE), phosphate buffered saline (PBS), Tris buffer or saline.~~

~~43~~22. The composition of claim 1~~any one of claims 1, 3-5, 7, 8, and 10-38~~, wherein the composition retains at least 80%~~, at least 90% or at least 95%~~ purity after storage in lyophilized form for at least 4 months at 50 °C.

~~44~~23. The composition of claim 1~~any one of claims 1, 3-5, 7, 8, and 10-38~~, wherein the composition retains at least 80%~~, at least 90% or at least 95%~~ immunogenicity after storage in lyophilized form for at least 1 months at 40 °C.

~~45~~24. Use of the composition of claim 1 in the manufacture of a medicament for ~~A method of~~ vaccinating a subject against a pathogen~~ comprising administering the composition of any one of claims 1-44~~.

~~46~~25. Use of a pharmaceutical composition reconstituted from the lyophilized composition of claim 20 in the manufacture of a medicament for ~~A method of~~ vaccinating a subject against a pathogen~~ comprising administering to a subject a pharmaceutical composition reconstituted from the lyophilized composition of claim 39 or 40~~.

~~47~~26. A method of producing a potent, alum based frozen vaccine comprising suspending a composition comprising greater than 20%, greater than 25%, or greater than 30%~~at least about 10%~~ sugar and an antigen adsorbed to an aluminum adjuvant and freezing said composition at a rate sufficient to freeze the suspended composition before sedimentation occurs.

~~48. The method of claim 47, wherein said composition contains at least about 15% sugar.~~

~~49. The method of claim 47, wherein said composition contains at least about 20% sugar.~~

~~50~~27. A method of preparing a stable lyophilized composition, comprising lyophilizing ~~a~~ the composition of claim 1~~any one of claims 1, 3-5, 7, 8, and 10-38~~, wherein the stability of the reconstituted lyophilized composition is measured by ma~~i~~crophage lysis assay (MLA), size

exclusion chromatography (SEC-HPLC) and/or anion exchange chromatography (AEX-HPLC).