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 20%, greater than 25%, or greater than 30% (w/v) non-reducing sugar.

2. The composition of claim 1, which is a temperature stable liquid vaccine.

3. The composition of claim 1, wherein, prior to lyophilization, the 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 claim 1, further comprising a surfactant.

5. The composition of claim 1, further comprising an amino acid.

6. The composition of claim 1, wherein the aluminum adjuvant is selected from the group consisting of aluminum phosphate, aluminum sulfate, and aluminum hydroxide.

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

8. The composition of claim 4, wherein the surfactant is polysorbate 20.

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

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

11. The composition of claim 1, wherein the composition contains about 20-40% (w/v) sugar.

12. The composition of claim 1, wherein the antigen is an Anthrax antigen.

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

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

15. The composition of claim 13, wherein the composition comprises about 150-500 μg/ml protective antigen.

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

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

18. The composition of claim 5, wherein the amino acid is selected from the group consisting of arginine, alanine, proline, glycine, and any combination thereof.

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

20. A lyophilized composition, which is lyophilized from the composition of claim 1.

21. A reconstituted composition comprising the lyophilized composition of claim 20 reconstituted in an aqueous solution.

22. The composition of claim 1, wherein the composition retains at least 80% purity after storage in lyophilized form for at least 4 months at 50 °C.

23. The composition of claim 1, wherein the composition retains at least 80% immunogenicity after storage in lyophilized form for at least 1 month at 40 °C.

24. Use of the composition of claim 1 in the manufacture of a medicament for vaccinating a subject to protect against, inhibit, or alleviate an Anthrax pathogen infection.

25. Use of a pharmaceutical composition reconstituted from the lyophilized composition of claim 20 in the manufacture of a medicament for vaccinating a subject to protect against, inhibit, or alleviate an Anthrax pathogen infection.

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% 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.

27. A method of preparing a stable lyophilized composition, comprising lyophilizing the composition of claim 1, wherein the stability of the reconstituted lyophilized composition is measured by macrophage lysis assay (MLA), size