CLAIMS

What is claimed is:

1. An immunogenic composition comprising a first viral expression vector and a second viral expression vector, wherein:

the first viral expression vector comprises a polynucleotide encoding a truncated HBV polymerase polypeptide mutant, wherein the polypeptide is no longer than 600 amino acids in length, does not comprise all of the terminal protein (TP) domain and does not comprise all or part of the Spacer domain, wherein the polypeptide comprises or consists of the amino acid sequence of any one of SEQ ID NOs: 13-14; and

the second viral expression vector comprises a polynucleotide encoding the core-sAg fusion comprising in sequential order from the N-terminus to the C terminus, an HBV core polypeptide and an HBV small surface antigen (sAg) polypeptide, wherein the fusion protein is no longer than 450 amino acids in length, and wherein the core polypeptide is from an HBV genotype D and the sAg polypeptide is from an HBV genotype D, wherein the fusion protein comprises or consists of an amino acid sequence of any one of SEQ ID NOs: 40-41, or an amino acid sequence that is at least 97%, 98% or 99% identical to any one of SEQ ID NOs: 40-41.

2. The immunogenic composition of claim 1, comprising a first viral expression vector and a second viral expression vector, wherein:

the first viral expression vector comprises a polynucleotide encoding an HBV polymerase polypeptide mutant comprising or consisting of the amino acid sequence of SEQ ID NO: 13; and

the second viral expression vector comprises a polynucleotide encoding the core-sAg fusion protein comprising or consisting of an amino acid sequence of SEQ ID NO: 41, or an amino acid sequence that is at least 97%, 98% or 99% identical to SEQ ID NO: 41.

3. The immunogenic composition of claim 1 or 2, comprising a first viral expression vector and a second viral expression vector, wherein:

a) the first viral expression vector comprises a polynucleotide comprising or consisting of a nucleic acid sequence of any one of SEQ ID NOs: 29, 32, 89, 90, 91, 92, 93and

94, or a nucleic acid sequence that is at least 99% identical to the full length of any one of SEQ ID NOs: 29, 32, 89, 90, 91, 92, 93 and 94;

b) the second viral expression vector comprises a polynucleotide comprising or consisting of a nucleic acid sequence of any one of SEQ ID NOs: 33-37 or a sequence that is at least 85%, 86%, 87%, 88%, 89%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98% or 99% identical to the full length of any one of SEQ ID NOs: 33-37.

4. The immunogenic composition of any one of claims 1 to 3, comprising a first viral expression vector and a second viral expression vector, wherein:

a) the first viral expression vector comprises a polynucleotide comprising or consisting of a nucleic acid sequence of SEQ ID NOs: 29, 89, 90 or 92, or a sequence that is at least 99% identical to the full length of SEQ ID NOs: 29, 89, 90 or 92; and

b) the second viral expression vector comprises a polynucleotide comprising or consisting of a nucleic acid sequence of SEQ ID NO: 37 or a nucleic acid sequence that is at least 85%, 86%, 87%, 88%, 89%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98% or 99% identical to the full length of any one of SEQ ID NO: 37.

5. The immunogenic composition of any one of claims 1 to 4, wherein the first viral expression vector and the second viral expression vector are independently from a taxonomic family selected from Adenoviridae, Arenaviridae, Herpesviridae, Poxviridae, Flaviviridae), Rhabdoviridae, and Togaviridae.

6. The immunogenic composition of any one of claims 1 to 5, wherein the first viral expression vector and the second viral expression vector are from the same taxonomic family.

7. The immunogenic composition of claim 6, wherein the first viral expression vector and the second viral expression vector are from Arenaviridae.

8. The immunogenic composition of claim 6 or 7, wherein the first viral expression vector and the second viral expression vector are independently from an arenavirus vector selected from Lymphocytic choriomeningitis mammarenavirus (LCMV), Pichinde mammarenavirus (PICV), Guanarito virus (GTOV), Junin virus (JUNV), Lassa virus (LASV), Lujo virus (LUJV), Machupo virus (MACV), Sabia virus (SABV), and Whitewater Arroyo virus (WWAV).

9. The immunogenic composition of any one of claims 6 to 8, wherein the first viral expression vector and the second viral expression vector are from an arenavirus vector selected from Lymphocytic choriomeningitis mammarenavirus (LCMV) or Pichinde mammarenavirus (PICV).

10. The immunogenic composition of any one of claims 6 to 9, wherein the first viral expression vector and the second viral expression vector are replication-defective or replication-deficient.

11. The immunogenic composition of any one of claims 6 to 9, wherein the first viral expression vector and the second viral expression vector are replication-attenuated.

12. The immunogenic composition of any one of claims 1 to 11, wherein the first viral expression vector and the second viral expression vector are provided in a ratio in the range of from 1:10 to 10:1.

13. The immunogenic composition of any one of claims 1 to 12, comprising in the range of about 10^3 to about 10^{12} viral focus forming units (ffu) or plaque forming units (pfu) or infectious units (iu) or viral particles (vp) per milliliter of each of the first viral expression vector and the second viral expression vector.

14. The immunogenic composition of any one of claims 1 to 13, further comprising one or more of an adjuvant, a detergent, a micelle-forming agent, and an oil.

15. The immunogenic composition of any one of claims 1 to 14, formulated for administration via a route selected from the group consisting of intravenous, intramuscular, intradermal, subcutaneous and mucosal.

16. The immunogenic composition of any one of claims 1 to 15, formulated as a liquid.

17. The immunogenic composition of any one of claims 1 to 15, wherein the composition is lyophilized.

18. A kit comprising one or more unitary doses of the immunogenic composition of any one of claims 1 to 17.