

What is claimed:

1. A fusion protein comprising:
an HBV polymerase N-terminal domain comprising the amino acid sequence of SEQ ID NO: 178 or an immunogenic fragment thereof, an HBV polymerase C-terminal domain comprising the amino acid sequence of SEQ ID NO: 179 or an immunogenic fragment thereof, and an HBV Core protein comprising the amino acid sequence of SEQ ID NO: 180 or an immunogenic fragment thereof.
2. The fusion protein of claim 1, comprising the amino acid sequence of SEQ ID NO: 174.
3. The fusion protein of claim 1 or 2, further comprising an N-terminal HSV gD sequence or a variant thereof, a C-terminal HSV gD protein sequence or a variant thereof, or both.
4. The fusion protein of claim 3, comprising:
an N-terminal HSV gD sequence or a variant thereof,
an HBV sequence comprising an HBV polymerase N-terminal domain comprising the amino acid sequence of SEQ ID NO: 178 or an immunogenic fragment thereof, an HBV polymerase C-terminal domain comprising the amino acid sequence of SEQ ID NO: 179 or an immunogenic fragment thereof, and an HBV Core protein comprising the amino acid sequence of SEQ ID NO: 180 or an immunogenic fragment thereof; and
a C-terminal HSV gD protein sequence or a variant thereof.
5. The fusion protein of claim 4, wherein the HBV sequence comprises the amino acid sequence of SEQ ID NO: 174.
6. The fusion protein of any one of claims 3-5, wherein the N-terminal HSV gD sequence comprises the amino acid sequence of SEQ ID NO: 12.

7. The fusion protein of any one of claims 3-5, wherein the N-terminal HSV gD sequence comprises amino acid residues 26-269 of SEQ ID NO: 12.
8. The fusion protein of any one of claims 3-7, wherein the C-terminal HSV gD sequence comprises the transmembrane domain of the HSV gD.
9. The fusion protein of any one of claims 3-8, wherein the C-terminal HSV gD sequence comprises the amino acid sequence of SEQ ID NO: 13.
10. The fusion protein of any one of claims 3-9, wherein the fusion protein comprises the amino acid sequence of SEQ ID NO: 185.
11. A nucleic acid molecule encoding the fusion protein of any one of claims 1-10.
12. The nucleic acid molecule of claim 11, wherein the nucleic acid molecule comprises the nucleotide sequence of SEQ ID NO: 176.
13. The nucleic acid molecule of claim 11, wherein the nucleic acid molecule comprises the nucleotide sequence of SEQ ID NO: 184.
14. A vector comprising the nucleic acid molecule of any one of claims 11-13.
15. The vector of claim 14, wherein the vector is an adenoviral vector.
16. The vector of claim 15, wherein the adenoviral vector is an AdC6 vector or AdC7 vector.
17. A vaccine comprising the vector of any one of claims 14-16.
18. A method of inducing an immune response to HBV in a subject, the method comprising providing to the subject an effective amount of the fusion protein of any one of

claims 1-10, the nucleic acid molecule of any one of claims 11-13, the vector of any one of claims 14-16, or the vaccine of claim 17 to thereby induce an immune response to HBV.

19. The method of claim 18, wherein the vaccine comprises an AdC6 vector comprising a fusion protein comprising the amino acid sequence of SEQ ID NO: 185.

20. The method of claim 19, further comprising providing to the subject, subsequent to providing the vaccine comprising the AdC6 vector, a vaccine comprising an AdC7 vector comprising a fusion protein comprising the amino acid sequence of SEQ ID NO: 185.

21. The method of claim 18, wherein the vaccine comprises an AdC7 vector comprising a fusion protein comprising the amino acid sequence of SEQ ID NO: 185.

22. The method of claim 21, further comprising providing to the subject, subsequent to providing the vaccine comprising the AdC7 vector, a vaccine comprising an AdC6 vector comprising a fusion protein comprising the amino acid sequence of SEQ ID NO: 185.

23. The method of any one of claims 18-22, wherein the amino acid sequence of SEQ ID NO: 185 or an immunogenic fragment thereof, does not contain the N-terminal 25 amino acid signal peptide.