CLAIMS

1. An immunogenic fragment of a Neisserial Heparin Binding Antigen (NHBA) protein from *Neisseria gonorrhoeae*, wherein the immunogenic fragment is between about 165 amino acids and about 200 amino acids in length and wherein the immunogenic fragment comprises, is contained in, consists, or consists essentially of an amino acid sequence having at least 97%, at least 98%, or at least 99% sequence identity to the amino acid sequence of SEQ ID NO: 2.

2. The immunogenic fragment of claim 1, wherein the immunogenic fragment comprises an amino acid sequence having at least 97%, at least 98%, or at least 99% sequence identity to the amino acid sequence of SEQ ID NO: 2.

3. The immunogenic fragment of claim 2, wherein the immunogenic fragment comprises the amino acid sequence of SEQ ID NO: 2.

4. The immunogenic fragment of claim 1, wherein the immunogenic fragment consists or consists essentially of an amino acid sequence having at least 97%, at least 98%, or at least 99% sequence identity to the amino acid sequence of SEQ ID NO: 2.

5. The immunogenic fragment of claim 4, wherein the immunogenic fragment consists or consists essentially of the amino acid sequence of SEQ ID NO: 2.

6. The immunogenic fragment of any one of claims 1-5, wherein the immunogenic fragment is conjugated, coupled or otherwise linked to a carrier protein.

7. The immunogenic fragment of any one of claims 1-6, wherein the immunogenic fragment is conjugated, coupled or otherwise linked to a heterologous amino acid sequence.

8. The immunogenic fragment of any one of claims 1, 2, 4, 6, and 7, wherein the immunogenic fragment comprises one or more amino acid substitutions of residues 4, 6, 7, 10, 21, 51, 58, 61, 62, 70, 72, 76, 77, 84, 89, 90, 92, 93, 94, 114, 136, 151, 153, 154, 168, 174, 178, 181, and 182 of SEQ ID NO: 2.

9. The immunogenic fragment of claim 8, wherein the one or more amino acid substitutions of SEQ ID NO: 2 are selected from the group consisting of A4V, I6M, P7L, P10S, G21E, P51S, R58S, G61A, E62K, A70V, T72A, N76S, G77R, M84T, P89S, Y90C, S92T, G93R, G94S, S114G, T136N, G151D, A153V, G154D, A168T, G174S, G178D, D181E, R182Q, and any combinations thereof.

10. A protein comprising one or more of immunogenic fragments according to any one of claims 1-9 and a heterologous amino acid sequence.

11. A nucleic acid, which comprises a nucleotide sequence that encodes the immunogenic fragment of any one of claim 1-9 or the protein of claim 10, or which comprises a nucleotide sequence complementary thereto.

12. A genetic construct comprising the nucleic acid of claim 11.

13. A host cell comprising the genetic construct of claim 12.

14. A method of producing the immunogenic fragment of any one of claims 1-9 or the protein of claim 10, comprising: (i) culturing the host cell of claim 13 in a culture medium; and (ii) isolating said immunogenic fragment or protein from the culture medium.

15. An antibody or antibody fragment that binds or is raised against the immunogenic fragment of any one of claim 1-9 or the protein of claim 10.

16. A composition comprising the immunogenic fragment of any one of claims 1-9, and a pharmaceutically acceptable diluent, carrier or excipient.

17. The composition of claim 16, wherein the composition is an immunogenic composition.

18. The composition of claim 17, wherein the composition is a vaccine.

19. A composition comprising the protein of claim 10, the nucleic acid of claim 11, the genetic construct of claim 12, the host cell of claim 13, or the antibody or antibody fragment of claim 15, and a pharmaceutically acceptable diluent, carrier, or excipient.

20. The composition of claim 19, wherein the composition is an immunogenic composition.

21. The composition of claim 20, wherein the composition is a vaccine.