

CLAIMS

It is claimed:

1. An isolated nucleic acid sequence encoding a hexon polypeptide or a functional derivative thereof comprising a hexon hypervariable regions-encompassing polypeptide having the amino acid sequence of SEQ ID NO:1 or an amino acid sequence which is at least 95% identical over its entire length to the amino acid sequence of SEQ ID NO:1.
2. The isolated nucleic acid sequence of claim 1, wherein the hexon polypeptide comprises a hexon hypervariable regions-encompassing polypeptide having the amino acid sequence of SEQ ID NO:1.
3. The isolated nucleic acid sequence of claim 2, wherein the hexon polypeptide or the functional derivative thereof comprises the amino acid sequence of SEQ ID NO:2 or an amino acid sequence which is at least 95% identical over its entire length to the amino acid sequence of SEQ ID NO:2.
4. The isolated nucleic acid sequence of any one of claims 1-3, further comprising a nucleic acid sequence encoding a fiber polypeptide or a functional derivative thereof.
5. The isolated nucleic acid sequence of claim 4, wherein the fiber polypeptide comprises at least one selected from the group consisting of: (1) a fiber knob polypeptide sequence comprising the amino acid sequence of SEQ ID NO:10, (2) a fiber shaft polypeptide sequence comprising the amino acid sequence of SEQ ID NO:11, and (3) a fiber tail polypeptide sequence comprising the amino acid sequence of SEQ ID NO:12, preferably, the fiber polypeptide or a functional derivative thereof comprises the amino acid sequence of SEQ ID NO:3 or an amino acid sequence which is at least 95% identical over its entire length to the amino acid sequence of SEQ ID NO:3.
6. An isolated nucleic acid sequence encoding a fiber polypeptide comprising at least one selected from the group consisting of: (1) a fiber knob polypeptide sequence comprising the amino acid sequence of SEQ ID NO:10; (2) a fiber shaft polypeptide sequence comprising the amino acid sequence of SEQ ID NO:11, and (3) a fiber tail polypeptide sequence comprising the amino acid sequence of SEQ ID NO:12.
7. The isolated nucleic acid sequence of claim 6, wherein the fiber polypeptide comprises the amino acid sequence of SEQ ID NO:3.
8. A vector comprising the nucleic acid of any of claims 1-7.

9. The vector of claim 8, being an adenoviral vector, and further comprising a transgene.
10. The adenoviral vector of claim 9, wherein the adenoviral vector further comprises at least one of an E1 deletion and an E3 deletion.
- 5 11. The adenoviral vector of claim 9 or 10, wherein the adenoviral vector is a chimeric adenoviral vector comprising one or more human adenoviral nucleic acid sequences, preferably the human adenoviral nucleic acid sequences are from at least one of human adenovirus-4, human adenovirus-5, human adenovirus-26, or human adenovirus-35.
- 10 12. The adenoviral vector of any one of claims 9-11, wherein the adenoviral vector comprises a nucleic acid sequence selected from the group consisting of SEQ ID NO:13 and SEQ ID NO:14.
13. A recombinant cell comprising the vector of any one of claims 8-12.
14. A method of producing a vector, comprising;
- 15 (a) growing the recombinant cell of claim 13 under conditions for production of the vector; and
(b) isolating the vector from the recombinant cell.
15. An immunogenic composition comprising the adenoviral vector of any one of claims 9-12.
- 20 16. A method of inducing an immune response in a subject in need thereof, comprising administering to the subject the immunogenic composition of claim 15
17. A method of producing a vaccine, comprising combining an adenoviral vector according to any of claims 9-12 with a pharmaceutically acceptable carrier.