Claims

1. A nucleic acid molecule encoding a polypeptide comprising SEQ ID NO: 1.

2. A nucleic acid molecule according to claim 1, wherein the encoded polypeptide further comprises a leader sequence.

3. A nucleic acid molecule according to any one of the preceding claims, wherein the encoded polypeptide further comprises at least one epitope of a human papillomavirus (HPV) E2 protein.

4. A nucleic acid molecule according to claim 3, wherein the encoded polypeptide comprises HPV16 E2 protein that has a deletion or mutation in its DNA binding domain.

5. A nucleic acid molecule according to claim 4, wherein the encoded polypeptide comprises SEQ ID NO: 3 or SEQ ID NO: 5.

6. A nucleic acid molecule according to any one of the preceding claims, wherein the nucleic acid sequence is codon-optimized.

7. A nucleic acid molecule according to any one of the preceding claims, comprising SEQ ID NO: 2.

8. A nucleic acid molecule according to any one of the preceding claims, comprising SEQ ID NO: 4 or SEQ ID NO: 6.

9. A vector comprising a nucleic acid molecule according to any one of the preceding claims, wherein a sequence encoding the polypeptide is operably linked to a promoter.

10. A vector according to claim 9, wherein the vector is a recombinant adenovirus.

11. A vector according to claim 9 or 10, wherein the promoter is operably coupled to a repressor operator sequence, to which a repressor protein can bind in order to repress expression of the promoter in the presence of said repressor protein.

12. A vaccine composition comprising a vector according to any one of claims 9-11, and a pharmaceutically acceptable excipient.

13. Use of the vaccine composition according to claim 12 in the manufacture of a medicament for the treatment of HPV, wherein the medicament is to be administered to a subject in need thereof.

14. The use according to claim 13, wherein the medicament according to claim 12 is to be administered to the subject in need thereof more than once.

15. Use of the vaccine composition according to claim 12 in the manufacture of a medicament for the treatment of persistent HPV infection, vulvar intraepithelial neoplasia (VIN), cervical intraepithelial neoplasia (CIN), vaginal intraepithelial neoplasia (VaIN), anal intraepithelial neoplasia (AIN), cervical cancer (such as cervical squamous cell carcinoma (SCC), oropharyngeal cancer, penile cancer, vaginal cancer or anal cancer.

16. A polypeptide comprising SEQ ID NO: 1.

17. A polypeptide according to claim 16, comprising SEQ ID NO: 3 or SEQ ID NO: 5.