Claims

1. A recombinant *Poxviridae* vector, which comprises the following:

   - at least one first nucleotide sequence encoding and expressing a co-stimulatory molecule, and

   - at least one promoter controlling the expression of the first nucleotide sequence.

2. The recombinant *Poxviridae* vector of claim 1, characterized in that the co-stimulatory molecule is CD40L.

3. The recombinant *Poxviridae* vector of claim 1, characterized in that the co-stimulatory molecule is CD80.

4. The recombinant *Poxviridae* vector of any of claims 1-3, which additionally comprises the following:

   - at least a second nucleotide sequence encoding and expressing a co-stimulatory molecule, and

   - at least one promoter controlling the expression of the second nucleotide sequence.

5. The recombinant *Poxviridae* vector of any of claims 1-4, characterized in that the co-stimulatory molecule is CD40L and/or CD80.

6. The recombinant *Poxviridae* vector of any of claims 1-5, which is a recombinant Parapoxvirus vector, preferably a recombinant Orf virus (ORFV) vector, further preferably the ORFV is of the strain D1701.

7. The recombinant *Poxviridae* vector of any of claims 1-6, characterized in that the first nucleotide sequence is located in the vegf locus.

8. The recombinant *Poxviridae* vector of any of claims 1-7, characterized in that the second nucleotide sequence is located in the vegf locus.

9. The recombinant *Poxviridae* vector of any of claims 1-8, which additionally comprises the following:

   - at least one third nucleotide sequence encoding and expressing an antigen, and
   - at least one promoter controlling the expression of the third nucleotide sequence.

10. The recombinant *Poxviridae* vector of claim 9, characterized in that the third nucleotide sequence is located in the Del2 locus.

11. The recombinant *Poxviridae* vector of claim 9 or 10, characterized in that the antigen is selected from the following group:

   – viral antigen, preferably

     rabies virus antigen, including glycoprotein (RabG);

     influenza A antigen, including nucleoprotein (NP), hemagglutinin (HA), neuraminidase (NA);

     SARS-CoV-2 antigen, including spike protein (S) or fragments thereof;

   – tumor antigen, preferably viral tumor antigen, including HPV selective viral tumor antigen;

   – tumor associated antigen, including viral tumor associated antigen, including HPV selective viral tumor-associated antigen;

   – parasitic antigen, preferably plasmodium antigen;

– cytokine.

12. A cell containing the recombinant *Poxviridae* vector of any of claims 1-11.

13. A pharmaceutical composition containing the recombinant *Poxviridae* vector of any of claims 1-11.

14. The pharmaceutical composition of claim 13, which is a vaccine.

15. Use of the recombinant vector of any of claims 1-11, or the pharmaceutical composition of claims 13 or 14, in the manufacture of a medicament for the treatment of a living being in need of a vaccination with an antigen, wherein said medicament is to be administered.

16. The recombinant vector of any of claims 1-11, or the pharmaceutical composition of claims 13 or 14, for use as a medicament.