WHAT IS CLAIMED :

1. Use of an effective dosage of a pharmaceutical composition comprising

   an alphavirus replicon comprising a recombinant polynucleotide, wherein the polynucleotide comprises a sequence encoding both subunits of a human class II major histocompatibility complex protein and a sequence encoding an antigen expressed in a tumor cell;

   a retroviral gag protein, and

   a fusogenic envelope protein, wherein the VLP does not contain an alphavirus structural protein gene

   in the manufacture of a medicament for treating a tumor in a mammalian subject.

2. The use of claim 1, wherein the class II major histocompatibility complex protein (class II MHC protein) encoded by the VLP differs from the class II MHC protein of the mammalian subject.

3. The use of any of claim 1 or claim 2, wherein the pharmaceutical composition induces tumor-specific immunity in the mammalian subject.

4. The use of any one of claims 1-3, wherein the mammalian subject is a cancer patient selected from the group of cancer patients having solid tumors derived from breast, cervical, prostate, ovary, renal carcinoma, lung, gastric, pancreas, glioblastoma, and colorectal.

5. The use of any one of claims 1-4, wherein the antigen expressed in a tumor cell comprises a polypeptide selected from the group consisting of alpha fetoprotein (AFP), CA15-3, CA27-29, CA19-9, CA-125, calcitonin, calretinin, carcinoembryonic antigen, chromogranin, cytokeratin, desmin, epithelial membrane protein (EMA), Factor VIII, FL1, glial fibrillary acidic protein (GFAP), gross cystic disease fluid protein (GCDFP-15), HMB-45, human chorionic gonadotropin (hCG), inhibin, keratin, lymphocyte marker, MART-1 (Melan-A), Myo D1, muscle-specific actin (MSA), neurofilament, neuron-specific enolase (NSE), placental alkaline phosphatase (PLAP), prostate-specific antigen, S100 protein, smooth

muscle actin (SMA), synaptophysin, thyroglobulin, thyroid transcription factor-1, tumor M2-PK, vimentin, cluster of differentiation10 (CD10), CD13, CD15, CD20, CD25, CD30, CD31, CD34, CD45 (PTPRC), CD80, CD99, CD117, and a fragment thereof.

6. The use of any one of claims 1-5, wherein the antigen expressed in a tumor cell and the class II major histocompatibility complex protein are coexpressed in a tumor cell in the mammalian subject.

7. The use of any one of claims 1-6, wherein the VLP causes antigen-presentation to cells of the immune system of the mammalian subject.

8. The use of claim 1, wherein the pharmaceutical composition is used in combination therapy with a chemotherapeutic drug.

9. The use of claim 8, wherein the combination therapy further comprises use of a chemotherapeutic drug selected from the drug classes consisting of a taxane (paclitaxel or docetaxel), an anthracycline (doxorubicin or epirubicin), cyclophosphamide, capecitabine, tamoxifen, letrozole, carboplatin, gemcitabine, cisplatin, erlotinib, irinotecan, fluorouracil, and oxaliplatin.

10. The use of claim 1, wherein the pharmaceutical composition is used in combination with radiation.

11. The use of any one of claims 1-4, wherein the antigen expressed in a tumor cell is CD80 and the class II MHC protein is HLA-DR1.