CLAIMS

1. Use of a Globo H-KLH (Keyhole limpet hemocyanin) glycoconjugate vaccine in the manufacture of a medicament for the treatment of a tumor in a human subject, wherein the Globo H-KLH glycoconjugate vaccine is to be administered to the human subject ~~more than three times~~at least six times in a pharmaceutically effective amount of less than 100 μg;

wherein the Globo H-KLH glycoconjugate vaccine is OBI-822 and is to be administered together with an OBI-821 adjuvant; and

wherein the tumor is breast cancer or ovarian cancer.

~~**2**. The use of the Globo H-KLH glycoconjugate vaccine of Claim 1, wherein the Globo H-KLH glycoconjugate vaccine is OBI-822.~~

~~3~~2. The use of the Globo H-KLH glycoconjugate vaccine of Claim 1, wherein the Globo H-KLH glycoconjugate vaccine is to be administered as a pharmaceutical composition.

4~~3~~. The use of the Globo H-KLH glycoconjugate vaccine of Claim ~~3~~2, wherein the pharmaceutical composition further comprises a pharmaceutically acceptable excipient~~an adjuvant~~.

~~**5**. The use of the Globo H-KLH glycoconjugate vaccine of Claim 4, wherein the adjuvant is OBI-821.~~

~~**6**. The use of the Globo H-KLH glycoconjugate vaccine of Claim 3, wherein the pharmaceutical composition comprises OBI-822 vaccine and OBI-821 adjuvant.~~

~~**7**. The use of the Globo H-KLH glycoconjugate vaccine according to Claim 1, wherein the vaccine comprises OBI-822 and a pharmaceutically acceptable excipient, and wherein the pharmaceutically effective dose of OBI-822 is less than 100 μg.~~

8~~4~~. The use of the Globo H-KLH glycoconjugate vaccine according to ~~any preceding claim~~any one of claims 1 to 3, wherein the Globo H-KLH glycoconjugate vaccine induces an immunogenic production of monoclonal antibody directed to Globo H antigen, and wherein the antibody produced is an IgG, an IgM, or both.

9~~5~~. The use of the Globo H-KLH glycoconjugate vaccine according to ~~any preceding~~

~~claim~~any one of claims 1 to 4, wherein the tumor is metastatic or nonmetastatic~~, and wherein the tumor is selected from breast cancer, lung cancer, liver cancer, gastric cancer, colon cancer, ovarian cancer, or pancreatic cancer~~.

~~10~~**6**. The use of the Globo H-KLH glycoconjugate vaccine according to ~~any preceding claim~~any one of claims 1 to 5, wherein the Globo H-KLH glycoconjugate vaccine is to be administered ~~as a pharmaceutical composition to the human subject~~ in combination with one or more anti-proliferative agents, and wherein the antiproliferative agent is selected from cyclophosphamide, opiate, granulocyte colony-stimulating factor (GCSF), estrogen inhibitors, aromatase inhibitors, pituitary downregulators, tamoxifen selective estrogen-receptor modulator, rolaxifene, estrogen receptor down-regulator, anticoagulant, enzyme, hematopoietic growth factor, anti-neoplastic agent, antimetabolites, miscellaneous cytotoxic agents, vinca alkaloid, epipodophyllotoxins, alkylating agents, taxanes, antitumor antibiotics, camptothecins, nitrosoureas, HERI/EGFR tyrosine kinase inhibitor, VEGF protein inhibitor, HER-2/ErbB2 inhibitor, interferon, interleukin, monoclonal antibody, glucocorticoid steroid, erlotinib, docetaxel, gemcitabine, cisplatin; carboplatin; paclitaxel, trastuzumab, temozolomide, tamoxifen, doxorubicin, oxaliplatin, bortezomib, sutent, letrozole, imatinib mesylate, MEK inhibitor, fulvestrant, leucovorin (folinic acid); rapamycin, lapatinib, lonafanib, sorafenib, gefitinib, irinotecan, tipifanib, Cremophor-free, paclitaxel, vandetanib, chloranmbucil, temsirolimus, pazopanib, canfosfamide, thiotepa, cyclosphosphamide, 5-fluorouracil (5-FU), vinorelbine, novantrone, teniposide, edatrexate, daunomycin, aminopterin, capecitabine, ibandronate, topoisomerase inhibitor RFS 2000, difluoromethylomithine (DMFO), tamoxifen, raloxifene, droloxifene, 4-hydroxytamoxifen, trioxifene, keoxifene, onapristone, toremifine citrate, 4(5)-imidazo les, aminoglutethimide, megestrol acetate, exemestane, formestanie, fadrozole, vorozole, letrozole, anastrozole, flutamide, nilutamide, bicalutamide, leuprolide, goserelin, troxacitabine (a-1,3- dioxolane nucleoside cytosine analog), lipid kinase inhibitor, oblimersen, angiozyme, allovectin, leuvectin, vaxid, aldesleukin, lurtotecan, abarelix, bevacizumab, alemtuzumab, bevacizumab, cetuximab, panitumumab, rituximab, pertuzumab, trastuzumab, tositumomab, gemtuzumab or ozogamicin.

~~11~~**7**. The use of the Globo H-KLH glycoconjugate vaccine according to ~~any preceding claim~~any one of claims 1 to 6, wherein the Globo H-KLH glycoconjugate vaccine is to be administered by intramuscular injection, subcutaneous injection, intravenous injection, intraperitoneal injection, intra-arterial injection, intrasynovial injection, intrathecal injection, epidural injection or intra-pleural injection, and wherein the vaccine is for administration intermittently at a time interval of one week to 41 weeks.

~~12~~**8**. The use of the Globo H-KLH glycoconjugate vaccine according to ~~claim 1~~any one of claims 1to 7, wherein ~~in~~ the treatment of a human subject is ~~afflicted with cancer by immunotherapy, and for use in~~performed for improving survival of the human subject by

modulating Globo series antigens interaction, wherein the survival comprises overall survival (OS) and/or progression free survival (PFS).

~~13~~**10**. The use of the Globo H-KLH glycoconjugate vaccine according to claim ~~12~~9, wherein the modulation of Globo series antigens interaction further comprises one or more of the following:

(a) Induction of Antibody-Dependent Cellular Cytotoxicity (ADCC) and Complement-Dependent Cytotoxicity (CDC) for Tumor Killing;

(b) Induction of anti-Globo series antigens IgM/IgG immune response to elicit Antibody-Dependent Cellular Cytotoxicity (ADCC) and Complement-Dependent Cytotoxicity (CDC) mediated tumor cell killing;

(c) Induction of anti-Globo series antigens antibodies trap Globo series antigens-ceramide shedding from tumor cells to block translin-associated factor X (TRAX)-dependent angiogenesis;

(d) Induction of anti-Globo series antigens antibodies to block Globo series antigens-ceramide induced Notch I-dependent immunosuppression and thereby enhancing T cell proliferation and cytokine production;

(e) Induction of anti-Globo series antigens antibodies to lead to apoptosis;

(f) Inhibition of Globo series antigens induced angiogenesis; or

(g) OBI-822 vaccination induced apoptosis; and

wherein the Globo series antigens is Globo H, Stage-specific embryonic antigen 3 (SSEA-3) or Stage-specific embryonic antigen 4 (SSEA-4).

~~**14**. The use of a pharmaceutically acceptable excipient comprising OBI-822 in the manufacture of a medicament for the treatment of cancer, wherein the pharmaceutically acceptable excipient is for improving OBI-822 vaccine-induced immune responsiveness in a subject in need thereof, wherein the pharmaceutically acceptable excipient comprising OBI-822 is to be administered to the subject in an immunogenic effective amount, and wherein the pharmaceutically acceptable excipient comprising OBI-822 is to be administered according to one or more of the following:~~

~~(a) administration two or more times (e.g., 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 or more times);~~

~~(b) administration at an adjustable time interval and/or dosing amount regimen between two successive administrations;~~

~~(c) administration by adjustable routes of administration and/or for administration at adjustable injection locations; or~~

~~(d) any combination of the above;~~

~~thereby each administration increases antibody immune response and/or increases~~

~~antigen-antibody binding affinity.~~

~~**15**. The use of the Globo H-KLH glycoconjugate vaccine according to any one of claims 1-13, wherein the Globo series antigens is Globo H, Stage-specific embryonic antigen-4 or Stage-specific embryonic antigen-3.~~