CLAIMS

1. Use of a combination of chemotherapy and an immune checkpoint inhibitor with at least one caloric restriction mimetic for the manufacture of a medicament for the treatment of cancer in a patient in need thereof.

2. The use according to claim 1, wherein the at least one caloric restriction mimetic is selected from the group consisting of inhibitors of mitochondrial pyruvate carrier complex (MPC), inhibitors of mitochondrial carnitine palmitoytransferase-1 (CTP1), inhibitors of mitochondrial citrate carrier (CiC), inhibitors of ATP-citrate lyase (ACLY), EP300 acetyltransferase inhibitors, and inhibitors of acyl-CoA synthetase short-chain family member 2 (ACCS2).

3. The use according to claim 1 or 2, wherein the at least one caloric restriction mimetic is selected from the group consisting of hydroxycitrate, lipoic acid, spermidine and mixtures thereof.

4. The use according to any one of claims 1 to 3, wherein the at least one caloric restriction mimetic is hydroxycitrate.

5. The use according to any one of claims 1 to 3, wherein the at least one caloric restriction mimetic is hydroxycitrate in association with lipoic acid.

6. The use according to any one of claims 1 to 5, wherein the chemotherapy is a chemotherapeutic agent selected from the group consisting of alkylating agents; alkyl sulfonates; aziridines; ethylenimines and methylamelamines; acetogenins; a camptothecin; bryostatin; callystatin; CC-1065; cryptophycins; dolastatin; duocarmycin; eleutherobin; pancratistatin; a sarcodictyin; spongistatin; nitrogen mustards; nitrosureas; enediyne antibiotics; dynemicin; bisphosphonates; an esperamicin; neocarzinostatin chromophore and related chromoprotein enediyne antibiotic chromophores, aclacinomysins, actinomycin, authrarnycin, azaserine, bleomycins, cactinomycin, carabicin, caminomycin, carzinophilin, chromomycins, dactinomycin, daunorubicin, detorubicin, 6-diazo-5-oxo-L-norleucine,

doxorubicin, epirubicin, esorubicin, idarubicin, marcellomycin, mitomycins, mycophenolic acid, nogalamycin, olivomycins, peplomycin, potfiromycin, puromycin, quelamycin, rodorubicin, streptonigrin, streptozocin, tubercidin, ubenimex, zinostatin, zorubicin; anti-metabolites; folic acid analogues; purine analogs; pyrimidine analogs; androgens; anti-adrenals; folic acid replenisher; aceglatone; aldophosphamide glycoside; aminolevulinic acid; eniluracil; amsacrine; bestrabucil; bisantrene; edatraxate; defofamine; demecolcine; diaziquone; elformithine; elliptinium acetate; an epothilone; etoglucid; gallium nitrate; hydroxyurea; lentinan; lonidainine; maytansinoids; mitoguazone; mitoxantrone; mopidanmol; nitraerine; pentostatin; phenamet; pirarubicin; losoxantrone; podophyllinic acid; 2-ethylhydrazide; procarbazine; PSK polysaccharide complex; razoxane; rhizoxin; sizofuran; spirogermanium; tenuazonic acid; triaziquone; 2,2',2"-trichlorotriethylamine; trichothecenes; urethan; vindesine; dacarbazine; mannomustine; mitobronitol; mitolactol; pipobroman; gacytosine; arabinoside; cyclophosphamide; thiotepa; taxoids; chlorambucil; gemcitabine; 6-thioguanine; mercaptopurine; methotrexate; platinum coordination complexes; vinblastine; platinum; etoposide; ifosfamide; vincristine; vinorelbine; novantrone; teniposide; edatrexate; daunomycin; aminopterin; xeloda; ibandronate; irinotecan; topoisomerase inhibitor RFS 2000; difluoromethylomithine (DMFO); retinoids; capecitabine; pemetrexed; and pharmaceutically acceptable salts, acids or derivatives of any of the above.

7. The use according to any one of claims 1 to 5, wherein the chemotherapy is a chemotherapeutic agent selected from the group consisting of cyclophosphamide, dolastatin, pancratistatin, mechlorethamine, bleomycins, dactinomycin, daunorubicin, doxorubicin, morpholino-doxorubicin, cyanomorpholino-doxorubicin, 2-pyrrolino-doxorubicin, deoxy doxorubicin, epirubicin, idarubicin, 5-fluorouracil, trimetrexate, epothilones, lonidamine, maytansine, mitoxantrone, PSK polysaccharide complex, verrucarin A, vindesine, cytosine arabinoside, paclitaxel, nab-paclitaxel, docetaxel, 6-thioguanine, cisplatin, oxaliplatin, carboplatin, vinblastine, platinum, ansamitocins, vincristine, vinorelbine, novantrone, daunomycin, irinotecan, retinoic acid, bortezomib, digitoxin, digoxin,

patupilone, hypericin, cetuximab, septacidin, hedamycin, CDDP, mitomycin C, temozolomide, gemcitabine, and pemetrexed.

8. The use according to any one of claims 1 to 7, wherein the immune checkpoint inhibitor is selected from the group consisting of PD-1 antagonists, PD-L1 antagonists, PD-L2 antagonists, CTLA-4 antagonists, VISTA antagonists, TIM-3 antagonists, LAG-3 antagonists, IDO antagonists, KIR2D antagonists, A2AR antagonists, B7-H3 antagonists, B7-H4 antagonists, and BTLA antagonists.

9. The use according to any one of claims 1 to 8, wherein the immune checkpoint inhibitor is a therapeutically effective combination of a PD-1 antagonist with a CTLA-4 antagonist.

10. The use according to any one of claims 1 to 9, wherein the immune checkpoint inhibitor is selected from the group consisting of nivolumab, pembrolizumab, pidilizumab, avelumab, durvalumab atezolimumab, ipilimumab and tremelimumab.

11. The use according to any one of claims 1 to 10, wherein:
- the at least one caloric restriction mimetic is hydroxycitrate or hydroxycitrate in association with lipoic acid;
- the chemotherapy is a chemotherapeutic agent selected from cisplatin, oxaliplatin, carboplatin; taxanes selected from paclitaxel, nab-paclitaxel, docetaxel and taxotere; vinca alkaloids selected from vindesine, vinblastine, vincristine and vinorelbine; anthracyclines selected from mitoxantrone, daunorubicin, doxorubicin, epirubicin, idarubicin, valrubicin and ditrisarubicin; gemcitabine; pemetrexed; mixtures thereof and pharmaceutically acceptable salts thereof; and
- the immune checkpoint inhibitor is selected from the group consisting of nivolumab, pembrolizumab, pidilizumab, avelumab, durvalumab atezolimumab, ipilimumab and tremelimumab.

12. The use according to any one of claims 1 to 10, wherein:

- the at least one caloric restriction mimetic is hydroxycitrate or hydroxycitrate in association with lipoic acid;
- the chemotherapy is a chemotherapeutic agent selected from cisplatin, oxaliplatin and carboplatin; a simultaneous or sequential combination of carboplatin and pemetrexed; a simultaneous or sequential combination of oxaliplatin and 5-FU; taxanes selected from paclitaxel, nab-paclitaxel, docetaxel and taxotere; gemcitabine; pemetrexed; mitoxantrone; and mixtures thereof and pharmaceutically acceptable salts thereof; and
- the immune checkpoint inhibitor is selected from the group consisting of nivolumab, pembrolizumab, pidilizumab, avelumab, durvalumab atezolimumab, ipilimumab and tremelimumab.

13. The use according to any one of claims 1 to 12, wherein the at least one caloric restriction mimetic is to be administrated simultaneously with the chemotherapy and/or the immune checkpoint inhibitor.

14. The use according to any one of claims 1 to 12, wherein the at least one caloric restriction mimetic is to be administrated prior to the chemotherapy and/or the immune checkpoint inhibitor.

15. The use according to any one of claims 1 to 14 wherein the cancer is selected from the group consisting of neoplasm, malignant; carcinoma; carcinoma, undifferentiated; giant and spindle cell carcinoma; small cell carcinoma; papillary carcinoma; squamous cell carcinoma; lymphoepithelial carcinoma; basal cell carcinoma; pilomatrix carcinoma; transitional cell carcinoma; papillary transitional cell carcinoma; adenocarcinoma; gastrinoma, malignant; cholangiocarcinoma; hepatocellular carcinoma; combined hepatocellular carcinoma and cholangiocarcinoma; trabecular adenocarcinoma; adenoid cystic carcinoma; adenocarcinoma in adenomatous polyp; adenocarcinoma, familial polyposis coli; solid carcinoma; carcinoid tumor, malignant; bronchiolo-alveolar adenocarcinoma; papillary adenocarcinoma; chromophobe carcinoma; acidophil carcinoma; oxyphilic adenocarcinoma; basophil carcinoma; clear cell adenocarcinoma; granular cell carcinoma; follicular adenocarcinoma; papillary and follicular

adenocarcinoma; nonencapsulated sclerosing carcinoma; adrenal cortical carcinoma; endometroid carcinoma; skin appendage carcinoma; apocrine adenocarcinoma; sebaceous adenocarcinoma; ceruminous adenocarcinoma; mucoepidermoid carcinoma; cystadenocarcinoma; papillary cystadenocarcinoma; papillary serous cystadenocarcinoma; mucinous cystadenocarcinoma; mucinous adenocarcinoma; signet ring cell carcinoma; infiltrating duct carcinoma; medullary carcinoma; lobular carcinoma; inflammatory carcinoma; Paget's disease, mammary; acinar cell carcinoma; adenosquamous carcinoma; adenocarcinoma w/squamous metaplasia; thymoma, malignant; ovarian stromal tumor, malignant; thecoma, malignant; granulosa cell tumor, malignant; and roblastoma, malignant; Sertoli cell carcinoma; Leydig cell tumor, malignant; lipid cell tumor, malignant; paraganglioma, malignant; extra-mammary paraganglioma, malignant; pheochromocytoma; glomangiosarcoma; malignant melanoma; amelanotic melanoma; superficial spreading melanoma; malignant melanoma in giant pigmented nevus; epithelioid cell melanoma; blue nevus, malignant; sarcoma; fibrosarcoma; fibrous histiocytoma, malignant; myxosarcoma; liposarcoma; leiomyosarcoma; rhabdomyosarcoma; embryonal rhabdomyosarcoma; alveolar rhabdomyosarcoma; stromal sarcoma; mixed tumor, malignant; mullerian mixed tumor; nephroblastoma; hepatoblastoma; carcinosarcoma; mesenchymoma, malignant; brenner tumor, malignant; phyllodes tumor, malignant; synovial sarcoma; mesothelioma, malignant; dysgerminoma; embryonal carcinoma; teratoma, malignant; struma ovarii, malignant; choriocarcinoma; mesonephroma, malignant; hemangiosarcoma; hemangioendothelioma, malignant; kaposi's sarcoma; hemangiopericytoma, malignant; lymphangiosarcoma; osteosarcoma; juxtacortical osteosarcoma; chondrosarcoma; chondroblastoma, malignant; mesenchymal chondrosarcoma; giant cell tumor of bone; Ewing's sarcoma; odontogenic tumor, malignant; ameloblastic odontosarcoma; ameloblastoma, malignant; ameloblastic fibrosarcoma; pinealoma, malignant; chordoma; glioma, malignant; ependymoma; astrocytoma; protoplasmic astrocytoma; fibrillary astrocytoma; astroblastoma; glioblastoma; oligodendroglioma; oligodendroblastoma; primitive neuroectodermal; cerebellar sarcoma; ganglioneuroblastoma; neuroblastoma; retinoblastoma; olfactory neurogenic

tumor; meningioma, malignant; neurofibrosarcoma; neurilemmoma, malignant; granular cell tumor, malignant; malignant lymphoma; Hodgkin's disease; Hodgkin's lymphoma; paragranuloma; malignant lymphoma, small lymphocytic; malignant lymphoma, large cell, diffuse; malignant lymphoma, follicular; mycosis fungoides; other specified non-Hodgkin's lymphomas; malignant histiocytosis; multiple myeloma; mast cell sarcoma; immunoproliferative small intestinal disease; leukemia; lymphoid leukemia; plasma cell leukemia; erythroleukemia; lymphosarcoma cell leukemia; myeloid leukemia; basophilic leukemia; eosinophilic leukemia; monocytic leukemia; mast cell leukemia; megakaryoblastic leukemia; myeloid sarcoma; and hairy cell leukemia.