CLAIMS

1. Use of a platinum containing drug, an immune checkpoint inhibitor and a peptide compound in the manufacture of a medicament for increasing nucleic acid damage of a hyperproliferating cell or for the prophylaxis or treatment of a cell proliferative disorder in a mammal, wherein the platinum containing drug comprises cisplatin or carboplatin, the immune checkpoint inhibitor comprises an anti-CTLA-4, anti-PD1, or anti-PD-L1 antibody, and the peptide compound comprises (d-Bpa)(d-Ser)(d-Trp)(d-Ser)(d-Phe-2,3,4,5,6-F)(d-Cha)(d-Arg)(d-Arg)(d-Arg)(d-Gln)(d-Arg)(d-Arg), or a pharmaceutically acceptable salt thereof.

2. The use of claim 1, wherein said medicament is to be administered with a T cell activating agent selected from an agent that targets CD28, OX40, GITR, CD137, CD27, or HVEM.

3. The use of claim 1 or 2, wherein said medicament is to be administered with a T cell activating agent selected from an anti-CD28, anti-OX40, anti-GITR, anti-CD137, anti-CD27, or anti-HVEM antibody.

4. The use of any one of claims 1-3, wherein the immune checkpoint inhibitor comprises anti-PD1 or anti-PD-L1 antibody.

5. The use of claim 4, wherein the antibody comprises a subsequence that binds to PD1 or PD-L1.

6. The use of claim 4 or 5, wherein the antibody comprises a bi-specific antibody that binds to PD1 or PD-L1.

7. The use of claim 4 or 5, wherein the antibody or subsequence comprises a mammalian antibody.

8. The use of claim 4 or 5, wherein the antibody or subsequence comprises a human, humanized, primatized or chimeric antibody that binds to PD1 or PD-L1.

9. The use of claim 4 or 5, wherein the antibody or subsequence comprises an Fab, Fab', $F(ab')_2$, Fv, Fd, single-chain Fv (scFv), disulfide-linked Fvs (sdFv), V_L, V_H, Camel Ig, V-NAR, VHH, trispecific (Fab_3), bispecific (Fab_2), diabody ($(V_L\text{-}V_H)_2$ or $(V_H\text{-}V_L)_2$), triabody (trivalent), tetrabody (tetravalent), minibody ($(scFv\text{-}C_H3)_2$), bispecific single-chain Fv (Bis-scFv), IgGdeltaCH2, scFv-Fc, $(scFv)_2$-Fc, affibody, aptamer, avimer or nanobody.

10. The use of any one of claims 1-9, wherein the mammal has a white blood cell count within a normal range.

11. The use of any one of claims 1-9, wherein the mammal has a white blood cell count of less than 11,000 white blood cells per microliter (wbc/µl) of blood.

12. The use of any one of claims 1-9, wherein the mammal has a white blood cell count between 4,000 to 11,000 white blood cells per microliter (wbc/µl) of blood.

13. The use of any one of claims 1-9, wherein the mammal has a white blood cell count of less than 10,000 white blood cells per microliter (wbc/µl) of blood.

14. The use of any one of claims 1-9, wherein the mammal has a white blood cell count of less than 9,000 white blood cells per microliter (wbc/µl) of blood.

15. The use of any one of claims 1-9, wherein the mammal has a white blood cell count between 4,000 to 9,000 white blood cells per microliter (wbc/µl) of blood.

16. The use of any one of claims 1-9, wherein the mammal has a white blood cell count of less than 8,000 white blood cells per microliter (wbc/µl) of blood.

17. The use of any one of claims 1-9, wherein the mammal has a white blood cell count of less than 7,000 white blood cells per microliter (wbc/µl) of blood.

18. The use of any one of claims 1-9, wherein the medicament comprises a pharmaceutical formulation.

19. The use of any one of claims 1-9, wherein the pharmaceutically acceptable salt thereof is selected from acetate, sulfonate, sulfate, pyrosulfate, bisulfate, sulfite, bisulfite, phosphate, monohydrogen-phosphate, dihydrogenphosphate, metaphosphate, pyrophosphate, chloride, bromide, iodide, propionate, decanoate, caprylate, acrylate, formate, isobutyrate, caproate, heptanoate, propiolate, oxalate, malonate, succinate, suberate, sebacate, fumarate, maleate, butyne-1,4-dioate, hexyne-1,6-dioate, benzoate, chlorobenzoate, methyl benzoates, dinitrobenzoates, hydroxybenzoates, methoxybenzoates, phthalates, xylenesulfonate, phenylacetate, phenylpropionate, phenylbutyrate, citrate, lactate, γ-hydroxybutyrate, glycolate, tartrate, methane-sulfonate, propanesulfonate, naphthalene-1-sulfonate, naphthalene-2-sulfonate, and mandelate.

20. The use of any one of claims 1-9, wherein the peptide compound has a length from 12 to 15, 15 to 20, 20 to 25, 25 to 30, 30 to 40, 40 to 50, 50 to 75, 75 to 100, 100 to 150, 150 to 200, or 200 to 300 amino acid residues.

21. The use of any one of claims 1-9, wherein the peptide compound further comprises a cell penetrating molecule attached or conjugated thereto.

22. The use of claim 21, wherein the cell penetrating molecule is joined to the peptide compound by a covalent bond, or a peptide or a non-peptide linker.

23. The use of claim 21, wherein the cell penetrating peptide comprises an alternating pattern of polar/charged amino acids and non-polar, hydrophobic amino acids.

24. The use of claim 21, wherein the cell penetrating peptide comprises a polycationic or amphipathic alpha-helix structure.

25. The use of claim 21, wherein the peptide compound and/or the cell penetrating peptide comprises L- or D-isomer amino acids, or a mixture of L- and D-isomer amino acids.

26. The use of claim 21, wherein the cell penetrating peptide comprises a poly-Arginine (Arg) sequence.

27. The use of any one of claims 2-9, wherein the peptide compound is to be administered prior to, with or after the T cell activating agent and/or immune checkpoint inhibitor.

28. The use of any one of claims 2-9, wherein the peptide compound is to be administered as a combination with the T cell activating agent and/or immune checkpoint inhibitor.

29. The use of any one of claims 2-9, wherein the peptide compound is to be administered less than 48 hours prior to or after the T cell activating agent and/or immune checkpoint inhibitor is to be administered.

30. The use of any one of claims 2-9, wherein the peptide compound is to be administered less than 24 hours prior to or after the T cell activating agent and/or immune checkpoint inhibitor is to be administered.

31. The use of any one of claims 2-9, wherein the peptide compound is to be administered less than 12 hours prior to or after the T cell activating agent and/or immune checkpoint inhibitor is to be administered.

32. The use of any one of claims 2-9, wherein the peptide compound is to be administered less than 6 hours prior to or after the T cell activating agent and/or immune checkpoint inhibitor is to be administered.

33. The use of any one of claims 2-9, wherein the peptide compound is to be administered less than 4 hours prior to or after the T cell activating agent and/or immune checkpoint inhibitor is to be administered.

34. The use of any one of claims 2-9, wherein the peptide compound is to be administered less than 2 hours prior to or after the T cell activating agent and/or immune checkpoint inhibitor is to be administered.

35. The use of any one of claims 2-9, wherein the peptide compound is to be administered less than 1 hour prior to or after the T cell activating agent and/or immune checkpoint inhibitor is to be administered.

36. The use of any one of claims 1-9, wherein the medicament further comprises a nucleic acid damaging agent or an anti-proliferative agent.

37. The use of claim 36, wherein the nucleic acid damaging agent or anti-proliferative agent comprises chemotherapy, immunotherapy, vaccination, an alkylating agent, an anti-metabolite, a plant extract, a plant alkaloid, nitrosourea, a hormone, or a nucleoside or nucleotide analogue.

38. The use of claim 36 or 37, wherein the nucleic acid damaging agent or anti-proliferative agent comprises a drug.

39. The use of claim 36 or 37, wherein the nucleic acid damaging agent or anti-proliferative agent comprises nedaplatin, mitaplatin, satraplatin, picoplatin, triplatin, miriplatin, or oxaliplatin.

40. The use of any one of claims 1-39, wherein the platinum containing drug comprises cisplatin.

41. The use of any one of claims 1-9, wherein the cell proliferative disorder comprises a tumor or cancer.

42. The use of claim 41, wherein the cell proliferative disorder comprises a metastatic tumor or cancer.

43. The use of claim 41 or 42, wherein the tumor or cancer comprises a lung tumor or cancer.

44. The use of claim 43, wherein the lung tumor or cancer comprises a small cell or non-small cell lung cancer.

45. The use of claim 43, wherein the lung tumor or cancer comprises an adenocarcinoma, squamous cell carcinoma or a large cell carcinoma.

46. The use of claim 41 or 42, wherein the tumor or cancer comprises a carcinoma, sarcoma, lymphoma, leukemia, adenoma, adenocarcinoma, melanoma, glioma, glioblastoma, meningioma, neuroblastoma, retinoblastoma, astrocytoma, oligodendrocytoma, mesothelioma, reticuloendothelial, lymphatic or haematopoietic neoplasia, tumor, cancer or malignancy.

47. The use of claim 46, wherein the sarcoma comprises a lymphosarcoma, liposarcoma, osteosarcoma, chondrosarcoma, leiomyosarcoma, rhabdomyosarcoma or fibrosarcoma.

48. The use of claim 46, wherein the haematopoietic neoplasia, tumor, cancer or malignancy comprises a myeloma, lymphoma or leukemia.

49. The use of claim 41 or 42, wherein the tumor or cancer comprises a lung, thyroid, head or neck, nasopharynx, throat, nose or sinuses, brain, spine, breast, adrenal gland, pituitary gland, thyroid, lymph, gastrointestinal (mouth, esophagus, stomach, duodenum, ileum, jejunum (small intestine), colon, rectum), genito-urinary tract (uterus, ovary, cervix, endometrial, bladder, testicle, penis, prostate), kidney, pancreas, liver, bone, bone marrow, lymph, blood, muscle, or skin neoplasia, tumor, or cancer.

50. The use of claim 41 or 42, wherein the tumor or cancer comprises a breast cancer, prostate cancer, pancreas cancer, gastric cancer, pleural mesothelioma, colon cancer, rectal cancer, large bowel cancer, small intestinal cancer, esophageal cancer, duodenal cancer, lingual cancer, pharyngeal cancer, salivary gland cancer, cerebral tumor, schwanoma, liver cancer, kidney cancer, bile duct cancer, endometrial cancer, cervical cancer, uterine body cancer, ovarian cancer, bladder cancer, urethral cancer, skin cancer, angioma, malignant lymphoma, malignant melanoma, thyroid cancer, parathyroid cancer, nasal cancer, paranasal cancer, auditory organ cancer, carcinoma of oral floor, laryngeal cancer, parotid cancer, submandibular cancer, bone tumor, angiofibroma, retinal sarcoma, penile cancer, testicular tumor, pediatric solid cancer, Kaposi's sarcoma, tumor of maxillary sinus, fibrous histiocytoma, leiomyosarcoma, rhabdomyosarcoma, lymphoma, multiple myeloma or leukemia.

51. The use of any one of claims 1-50, wherein the mammal is a human.

52. The use of any one of claims 41-50, wherein the amount of the peptide compound to be administered is effective to treat the tumor or cancer.

53. The use of any one of claims 41-50, wherein the medicament inhibits or reduces relapse, growth, progression, worsening or metastasis of the tumor or cancer.

54. The use of any one of claims 1-50, wherein the medicament results in partial or complete destruction of neoplasia, tumor, cancer or malignant cell mass, volume, size or numbers of cells, stimulating, inducing or increasing neoplasia, tumor, cancer or malignant cell necrosis, lysis or apoptosis, reducing neoplasia, tumor, cancer or malignancy volume size, cell mass, inhibiting or preventing progression or an increase in neoplasia, tumor, cancer or malignancy volume, mass, size or cell numbers, or prolonging lifespan.

55. The use of any one of claims 1-50, wherein the medicament results in reducing or decreasing severity, duration or frequency of an adverse symptom or complication associated with or caused by neoplasia, tumor, cancer or malignancy.

56. The use of any one of claims 1-50, wherein the medicament results in reducing or decreasing pain, discomfort, nausea, weakness or lethargy, or results in increased energy, appetite, improved mobility or psychological well being.

57. The use of any one of claims 1-50, wherein the medicament results in stimulating, inducing or increasing CD8 (=CD45+CD8+) T cell population in neoplasia, tumor, cancer or malignancy.

58. The use of any one of claims 1-50, wherein the medicament results in reducing or decreasing M2 macrophage (=F4/80+ CD206+) population in neoplasia, tumor, cancer or malignancy.