

CLAIMS

1. A compound comprising:
 - a cyclic peptide comprising at least
 - (a) an amino acid X_1 being selected from the group consisting of the amino acids A, C, D, E, F, G, H, I, K, L, M, N, P, Q, R, S, T, V, W and Y, further
 - (b) an amino acid sequence R-W-H, and further
 - (c) an amino acid X_{11} being selected from the group consisting of the amino acids A, C, D, E, F, G, H, I, K, L, M, N, P, Q, R, S, T, V, W and Y, or
 - a cyclic peptide comprising at least the amino acid sequence X_1 - X_2 - X_3 - X_4 - X_5 - X_6 - X_7 -R-W-H- X_{11} - X_{12} - X_{13} - X_{14} , wherein the amino acid X_1 is selected from the group consisting of the amino acids A, C, D, E, F, G, H, I, K, L, M, N, P, Q, R, S, T, V, W and Y, wherein the amino acids X_2 , X_3 , X_4 , X_5 , X_6 , X_7 , X_{11} , X_{12} , X_{13} and X_{14} are independently selected from the group consisting of the amino acids A, C, D, E, F, G, H, I, K, L, M, N, P, Q, R, S, T, V, W and Y, and wherein X_2 , X_3 , X_4 , X_5 , X_6 , X_7 , X_{12} , X_{13} and X_{14} are optionally present in the amino acid sequence,
the compound comprising a chemical bond between two adjacent amino acids of the cyclic peptide,
wherein the cyclic peptide comprises a chemical bond selected from the group consisting of a chemical bond between an N-terminal amino group of an amino acid and an amino acid side chain, a chemical bond between a C-terminal carboxyl group of an amino acid and an amino acid side chain, and a chemical bond between an amino acid side chain of a first amino acid of the peptide and an amino acid side chain of a second amino acid of the peptide,
wherein at least one amino acid of the cyclic peptide is a D-amino acid.
2. The compound of claim 1, wherein the amino acid X_1 is an amino acid having an NH_2 group in the amino acid side chain, such as the amino acids K, R, N, or Q, and/or wherein X_2 is optionally present and selected from the group consisting of amino acids with negatively charged side chains such as the amino acid E or D, or amino acids with non-polar side chains such as the amino acids A, V, L or I, wherein X_3 is optionally present and selected from the group consisting of amino acids with an NH_2 group in the amino acid side chain, such as the amino acids K, R, N, or Q, and amino acids with non-polar side chains, such as the amino acids A, V, L or I, wherein X_4 is optionally present and selected from the group consisting of amino acids with non-polar or non-charged side

chains and aromatic ring structures, such as the amino acids F, W, or Y, and amino acids with non-polar side chains, such as the amino acids A, V, L or I, wherein X_5 is optionally present and selected from the group consisting of amino acids with non-polar or non-charged side chains and aromatic rings structures, such as the amino acids F, W, or Y, and amino acids with non-polar side chains, such as the amino acids A, V, L or I, wherein X_6 is optionally present and selected from the group consisting of the amino acid G and amino acids with non-polar side chains, such as the amino acids A, V, L or I, wherein X_7 is optionally present and selected from the group consisting of amino acids with an NH_2 group in the side chain, such as the amino acids K, R, N or Q, and amino acids with non-polar side chains, such as the amino acids A, V, L or I, wherein X_{11} is selected from the group consisting of amino acids with negatively charged side chains, such as the amino acid E or D, and amino acids with non-polar side chains, such as the amino acids A, V, L or I, wherein X_{12} is optionally present and selected from the group consisting of the amino acid G and amino acids with non-polar side chains such as the amino acids A, V, L or I, wherein X_{13} is optionally present and selected from the group consisting of amino acids with non-polar or non-charged side chains and aromatic rings structures, such the amino acids F, W or Y, and amino acids with non-polar side chains, such as the amino acids A, V, L or I, and wherein X_{14} is optionally present and selected from the group consisting of amino acids with an NH_2 group in the side chain, such as the amino acids K, R, N or Q, and amino acids with non-polar side chains, such as the amino acids A, V, L or I.

3. The compound of any one of the preceding claims, wherein the cyclic peptide comprises, optionally consists of, the amino acid sequence K-R-W-H-E (SEQ ID No.: 34), K-N-R-W-H-E (SEQ ID No.: 35), K-G-N-R-W-H-E (SEQ ID No: 36).
4. The compound of any one of the preceding claims, wherein the cyclic peptide comprises a modification, optionally wherein the modification comprises an amino acid, amino acid derivative, a lipophilic modification, or an aromatic hydrophobic modification, optionally the modification comprises phenyl acetic acid or 3-indole acetic acid.
5. The compound of any one of the preceding claims, wherein the cyclic peptide comprises a chemical bond selected from the group consisting of a chemical bond between an N-terminal amino group of an amino acid and a carboxyl group of an amino acid side chain,

preferably of the amino acids E or D, a chemical bond between a C-terminal carboxyl group of an amino acid and an amino group of an amino acid side chain, preferably of the amino acids K, R, N or Q, and a chemical bond between an amino group of an amino acid side chain of a first amino acid of the peptide, preferably of the amino acids K, R, N or Q, and a carboxyl group of an amino acid side chain of a second amino acid of the peptide, preferably of the amino acids E or D.

6. The compound of any one of the preceding claims, wherein the peptide comprises the amino acid sequence K-R-W-H-E (SEQ ID No.: 34), K-N-R-W-H-E (SEQ ID No.: 35) or K-G-N-R-W-H-E (SEQ ID No.: 36), comprising a chemical bond selected from the group consisting of a chemical bond between an N-terminal amino group of an amino acid and an amino acid side chain, optionally a carboxyl group of an amino acid side chain, a chemical bond between a C-terminal carboxyl group of an amino acid and an amino acid side chain, optionally an amino group of an amino acid side chain, and a chemical bond between an amino acid side chain of a first amino acid of the peptide and an amino acid side chain of a second amino acid of the peptide, optionally between a carboxyl group of the amino acid side chain of the first amino acid and an amino group of the amino acid side chain of the second amino acid.
7. The compound of claim 6, wherein the peptide comprises the amino acid sequence K-R-W-H-E (SEQ ID No.: 34) and comprises a chemical bond between an N-terminal amino group of a first amino acid, preferably of the amino acid K, and an amino acid side chain, preferably a carboxyl group of an amino acid side chain, of a second amino acid, preferably of the amino acid E, or wherein the peptide comprises the amino acid sequence K-R-W-H-E (SEQ ID No.: 34) and comprises a chemical bond between an amino acid side chain, preferably the amino group of an amino acid side chain, of a first amino acid, preferably of the amino acid K, and the C-terminal carboxyl group of a second amino acid, preferably of E.
8. The compound of any one of claims 1 to 7, wherein the amino acid side chain is the amino acid side chain of an amino acid selected from the group consisting of the amino acids E, D, K, R, N and Q, optionally wherein the chemical bond comprises the carboxyl group of an amino acid side chain of an amino acid E or D and/or wherein the chemical bond comprises the amino group of an amino acid side chain of any one of the amino acids K, R, N or Q.

9. The compound of any one of claims 1 to 8, wherein the amino acid side chain is modified or truncated.
10. The compound of any one of the preceding claims, wherein 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 or 14 amino acids are D-amino acids.
11. The compound of any one of the preceding claims, wherein at least one amino acid of the amino acid sequence R-W-H is a D-amino acid.
12. The compound of any one of the preceding claims, wherein the peptide is selected from the group consisting of a peptide having the amino acid sequence K-R-W-H-E (SEQ ID No.: 34), comprising a chemical bond between the N-terminal amino group of the amino acid K and the carboxyl group of the amino acid side chain of the amino acid E, and wherein the amino acid W is a D-amino acid, a peptide having the amino acid sequence as depicted in SEQ ID No.: 35, comprising a chemical bond between the N-terminal amino group of the amino acid K and the carboxyl group of the amino acid side chain of the amino acid E, a peptide comprising the amino acid sequence SEQ ID No.: 36, comprising a chemical bond between the N-terminal amino group of the amino acid K and the carboxyl group of the amino acid side chain of the amino acid E, wherein the amino acid H is a D-amino acid, and a peptide comprising the amino acid sequence K-R-W-H-E (SEQ ID No.: 34), comprising a chemical bond between the amino group of the amino acid side chain of the amino acid K and the C-terminal carboxyl group of the amino acid E, wherein the amino acid R is a D-amino acid.
13. A pharmaceutical composition comprising the compound of any one of the preceding claims and a pharmaceutically acceptable carrier.
14. The compound of any one of claims 1 to 12 or the pharmaceutical composition of claim 13, wherein the compound is to be administered in combination with a cytotoxic compound, an immunopharmaceutical, an antibody against a receptor tyrosine kinase (RTK), a small molecule RTK inhibitor and/or a chemotherapeutic agent, preferably the compound of the invention is to be administered in combination with a compound selected from the group consisting of an epidermal growth factor receptor (EGFR) inhibitor, preferably selected from the group consisting of gefitinib, erlotinib, lapatinib,

cetuximab, panitumumab, vandetanib and mixtures thereof, an hepatocyte growth factor receptor (HGF/c-Met) inhibitor, preferably selected from the group consisting of ficlatuzumab, crizotinib, tivantinib, cabozantinib, capmatinib, MGCD265, volitinib, MK8033, MK-2461, and mixtures thereof, a programmed cell death protein 1 (PD-1) inhibitor, preferably selected from the group consisting of nivolumab/BMS-936558, lambrolizumab, pidilizumab, AMP-224, pembrolizumab and mixtures thereof, a programmed death-ligand 1 (PD-L1) inhibitor, preferably selected from the group consisting of BMS-936559, RG7446/MPDL3280A, MEDI4736, MSB0010718C/Avelumab and mixtures thereof, a cytotoxic T-lymphocyte-associated protein 4 (CTLA-4) inhibitor, preferably ipilimumab, a vascular endothelial growth factor receptor (VEGFR) inhibitors, preferably selected from the group consisting of bevacicumab, pazopanib, sorafenib, sunitinib, axitinib, ponatinib, regorafenib, vandetanib, cabozantinib, lenvatinib, ramucirumab and mixtures thereof, a chemotherapeutic agent, preferably selected from the group consisting of an alkylating agent, preferably selected from the group consisting of a nitrogen mustard, such as mechlorethamine, chlorambucil, cyclophosphamide, ifosfamide and melphalan, nitrosourea, such as streptozocin, carmustine (BCNU) and lomustine, an alkyl sulfonate, such as busulfan, a triazine, such as dacarbazine (DTIC) and temozolomide, an ethylenimine, such as thiotepa and altretamine (hexamethylmelamine), and mixtures thereof, a platinum drug, preferably selected from the group consisting of cisplatin, carboplatin, oxaloplatin and a mixture thereof, an antimetabolite, preferably selected from the group consisting of 5-fluorouracil (5-FU), 6-mercaptopurine (6-MP), capecitabine, cytarabine, floxuridine, fludarabine, gemcitabine, hydroxyurea, methotrexate, pemetrexed, and mixtures thereof, an taxane, an eribulin, folfirinox, folfox, an anthracycline, preferably selected from the group consisting of daunorubicin, doxorubicin, epirubicin, idarubicin and a mixture thereof; and a mixture thereof; and combinations thereof.

15. The compound of any one of claims 1 to 12 or the pharmaceutical composition of claim 13 for use as a medicament.
16. Use of the compound of any one of claims 1 to 12, or the pharmaceutical composition of claim 13, in the manufacture of a medicament for the treatment of cancer, wherein said cancer shows expression of CD44v6 and optionally wherein the cancer is a metastasizing cancer.

17. The use of claim 16, wherein the cancer is selected from the group consisting of estrogen receptor-dependent breast cancer, estrogen receptor-independent breast cancer, hormone receptor-dependent prostate cancer, hormone receptor-independent prostate cancer, brain cancer, renal cancer, colon cancer, familial adenomatous polyposis (FAP), colorectal cancer, pancreatic cancer, bladder cancer, esophageal cancer, stomach cancer, genitourinary cancer, gastrointestinal cancer, uterine cancer, ovarian cancer, astrocytomas, gliomas, skin cancer, squamous cell carcinoma, Keratoakantoma, Bowen disease, cutaneous T-Cell Lymphoma, melanoma, basal cell carcinoma, sarcomas, Kaposi's sarcoma, osteosarcoma, head and neck cancer, small cell lung carcinoma, non-small cell lung carcinoma, leukemia, lymphomas and/or other blood cell cancers.
18. The use of any one of claims 16 to 17, wherein said cancer is classifiable as Stage III or Stage IV according to the TNM anatomic/prognostic group system of the cancer staging system of the American Joint Committee on Cancer.
19. The use of any one of claims 16 to 18, wherein said cancer is a metastasizing cancer selected from the group consisting of metastasizing forms of Hodgkin lymphoma, colorectal cancer, cervical cancer, lung cancer, skin cancer such as squamous cell cancer or basal cell carcinoma, head and neck cancer, gastric cancer, pancreatic cancer, and breast cancer, optionally wherein said metastasizing cancer is classifiable as Stage IV according to the TNM anatomic/prognostic group system of the cancer staging system of the American Joint Committee on Cancer, and wherein said metastasizing cancer shows expression of CD44v6.