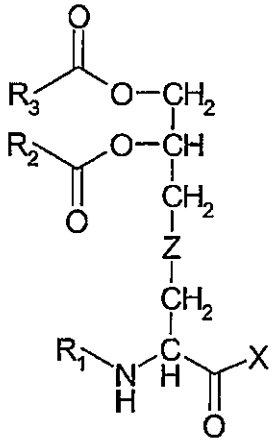
CLAIMS

1. Use of a composition comprising a lipopeptide in the manufacture of a medicament for producing a stem cell population in a mammal, wherein:

(a) the lipopeptide is a compound of the formula:



wherein,

R_1 represents H or -CO-R_4,

R_2, R_3 and R_4 independently are H or optionally substituted C_8-C_{16} aliphatic;

X is a peptide selected from the group consisting of SEQ ID NOs: 8, 16-18, 20, and 21; and

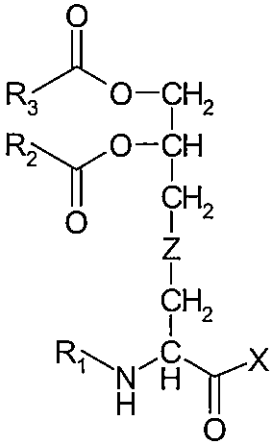
Z is S or CH_2; and

(b) peripheral white blood cells are isolated from the mammal, and wherein the peripheral white blood cells comprise the stem cell population.

2. Use of the stem cell population produced according to the use set out in claim 1 in the manufacture of a medicament for treating an effect of a cancer treatment in a mammal that has received a cancer treatment.

CLAIMS

1. A lipopeptide for use in the manufacture of a medicament for the treatment of a disease, wherein the lipopeptide comprises a compound of the formula:



wherein,

R_1 represents H or -CO-R_4,

R_2, R_3 and R_4 independently are H or optionally substituted C_8-C_{16} aliphatic;

X is a peptide comprising an amino acid sequence selected from SEQ ID NOs: 8, 16-18, 20, and 21;

Z is S or CH_2;

the lipopeptide increases the mobility of hematopoietic stem cells; and

the disease is selected from the group consisting of cancer, an autoimmune disease, an anemia, a non-malignant hematological disorder, Wiskott-Aldrich syndrome, Chediak-Higashi syndrome, Severe Combined Immune Deficiency (SCID), thalassemia, and sickle cell anemia.

2. The lipopeptide for use of claim 1, wherein X is SEQ ID NO: 21.

3. The lipopeptide for use of claim 1, wherein the composition is administered in conjunction with a radioprotectant.

4. The lipopeptide for use of claim 3, wherein the radioprotectant is an antioxidant.

5. The lipopeptide for use of claim 3, wherein the radioprotectant is a cytokine.

6. The lipopeptide for use of claim 5, wherein the cytokine is a stem cell factor.

7. The lipopeptide for use of claim 3, wherein the radioprotectant is flagellin.

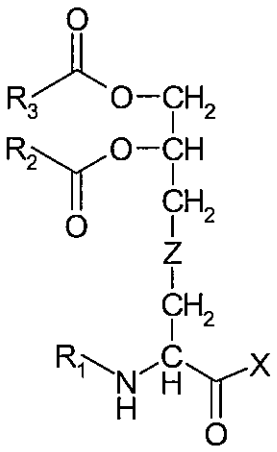
8. The lipopeptide for use of claim 3, wherein the radioprotectant is TGFβ.

9. The lipopeptide for use of claim 1, wherein the mobility of the hematopoietic stem cells increases from the bone marrow to the blood stream.

10. The lipopeptide for use of claim 1, wherein the disease is cancer.

11. The lipopeptide for use of claim 10, wherein the cancer is selected from leukemia, lymphoma, a malignant hematological disorder, breast cancer, testicular cancer, neuroblastoma, ovarian cancer, myeloma, and Waldenstrom's Macroglobulinemia.

12. A lipopeptide for use in the manufacture of a medicament for increasing the mobility of hematopoietic stem cells, wherein the lipopeptide comprises a compound of the formula:



wherein,

R_1 represents H or -CO-R_4,

R_2, R_3 and R_4 independently are H or optionally substituted C_8-C_{16} aliphatic;

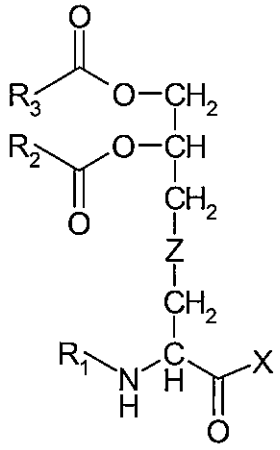
X is a peptide comprising an amino acid sequence selected from SEQ ID NOs: 8, 16-18, 20, and 21; and

Z is S or CH_2.

13. The lipopeptide for use of claim 12, wherein X is SEQ ID NO: 21.

14. The lipopeptide for use of claim 12, wherein the composition is for use with one or more of AMD3100 and G-CSF.

15. A method of producing a stem cell population comprising isolating peripheral white blood cells from a sample obtained from a mammal, wherein said mammal has been treated with a composition comprising a lipopeptide, wherein the lipopeptide is a compound of the formula:



wherein,

R_1 represents H or -CO-R_4,

R_2, R_3 and R_4 independently are H or optionally substituted C_8-C_{16} aliphatic;

X is a peptide comprising an amino acid sequence selected from SEQ ID NOs: 8, 16-18, 20, and 21; and

Z is S or CH_2; and

the peripheral white blood cells comprise the stem cell population.

16. The method of claim 15, wherein X is SEQ ID NO: 21.

17. The method of claim 15, wherein the composition is for use with one or more of AMD3100 and G-CSF.