CLAIMS

1. Use of at least one inhibitor of dipeptidyl peptidase IV (DPP-IV) in the manufacture of a composition for the treatment of haematopoetic stem cell transplanted recipients, wherein said haematopoetic stem and/or progenitor cells had been treated *in vitro* before transplantation with a prostacyclin analogue selected from the group of Treprostinil, Iloprost, Cicaprost and Beraprost or pharmaceutically acceptable salts thereof and a cAMP enhancer to enhance engraftment, and wherein the DPP-IV inhibitor is to be administered for a period of at least 1 day after haematopoetic stem cell transplantation.

2. The use according to claim 1, wherein the DPP-IV inhibitor is selected from gliptin.

3. The use according to claim 2, wherein said gliptin is selected from the group consisting of sitagliptin, vildagliptin, alogliptin, saxagliptin, linagliptin, anagliptin, teneligliptin, gemigliptin and dutogliptin.

4. The use according to any one of claims 1 to 3, wherein said prostacyclin analogue is Treprostinil, preferably a derivative of Treprostinil, selected from the group of acid derivatives of Treprostinil, prodrugs of Treprostinil, polymorphs of Treprostinil or isomers of Treprostinil.

5. The use according to any one of claims 1 to 4, wherein said cAMP enhancer is forskolin.

6. The use according to claim 1, wherein the DPP-IV inhibitor is vildagliptin and wherein the haematopoetic stem cells had been treated *in vitro* with Treprostinil and forskolin.

7. The use according to any one of claims 1 to 6, wherein the DPP-IV inhibitor is to be administered at least 5, specifically at least 10, specifically at least 15, specifically at least 24 hours before haematopoetic stem cell transplantation.

8. The use according to any one of claims 1 to 7 wherein the DPP-IV inhibitor is to be administered for a period of at least 1, specifically at least 2, specifically at least 3, specifically at least 4 days after haematopoetic stem cell transplantation.

9. The use according to any one of claims 1 to 8 in the treatment of individuals suffering from bone marrow disease.

10. The use according to claim 9, wherein the bone marrow disease is leukemia, a defect of the blood cell compartment, bone marrow disease induced by chemotherapy or irradiation.

11. The use according to claim 10 wherein said defect of the blood cell compartment is a hemoglobinopathy, a defect in neutrophil granulocyte function or a defect in T- and/or B-lymphocytes.