CLAIMS

1. A hematopoietic stem cell or progenitor cell comprising a lentiviral vector that comprises a nucleic acid encoding:

(a) a first BCL11A segment that comprises a BCL11A sequence, a loop segment; and

(b) a second BCL11A segment arranged in tandem in a 5' to 3' direction,

in which the loop segment is between and directly linked to the first and second BCL11A segments,

in which the second BCL11A segment is complementary to the first BCL11A segment so that the first and second BCL11A segments base pair to form a hairpin loop with the loop segment forming the loop portion of the hairpin loop thus formed; and

in which the first BCL11A segment starts with a -GCGC- at the 5' end and the second BCL11A segment ends with a - GCGC- at the 3' end.

2. A hematopoietic stem cell or progenitor cell according to Claim 1, in which the cell is a hematopoietic stem cell.

3. A hematopoietic stem cell or progenitor cell according to Claim 1, in which the cell is a hematopoietic progenitor cell.

4. A hematopoietic stem cell or progenitor cell according to Claim 1, in which the cell is an erythroid cell.

5. A hematopoietic stem cell or progenitor cell according to Claim 1, in which the first and second BCL11A segments are 18 to 25 nucleotides long.

6. A hematopoietic stem cell or progenitor cell according to Claim 1, in which the first BCL11A segment contains a sequence obtained from a BCL11A mRNA sequence.

7. A hematopoietic stem cell or progenitor cell according to Claim 1, in which the first BCL11A segment is complementary to the second BCL11A segment.

8. A hematopoietic stem cell or progenitor cell according to Claim 1, in which the first BCL11A segment comprises the nucleotide sequence set forth in any one of SEQ ID NOs: 57, 58, 59, 60, 61, 62, 63, 64, and 65.

9. A hematopoietic stem cell or progenitor cell according to Claim 1, in which the first BCL11A segment comprises the nucleotide sequence set forth in SEQ ID NO: 61.

10. A hematopoietic stem cell or progenitor cell according to Claim 1, in which the loop segment is obtained from a microRNA.

11. A hematopoietic stem cell or progenitor cell according to Claim 1, in which the loop segment is obtained from a microRNA selected from the group consisting of: miR-142, miR-155, miR-181 and miR-223.

12. A hematopoietic stem cell or progenitor cell according to Claim 1, in which the loop segment is obtained from miR223.

13. A hematopoietic stem cell or progenitor cell according to Claim 1, in which the loop segment comprises the polynucleotide sequence set forth in SEQ ID NO: 68.

14. A hematopoietic stem cell or progenitor cell according to Claim 1, in which the nucleic acid comprises a polynucleotide sequence selected from the group consisting of SEQ ID NOs: 34, 35, 36, 37, 38, 39, 40, 41, and 42.

15. A hematopoietic stem cell or progenitor cell according to Claim 1, in which the nucleic acid comprises the polynucleotide sequence set forth SEQ ID NO: 39.

16. A composition comprising the hematopoietic stem cell or progenitor cell according to any of Claims 1 to 15.

17. A composition comprising a pharmaceutically acceptable carrier or diluent and the hematopoietic stem cell or progenitor cell according to any of Claims 1 to 15.