Claims

1. A pharmaceutical composition comprising erythrocytes and a pharmaceutically acceptable vehicle, the erythrocytes encapsulating a PLP (pyridoxal phosphate)-dependent enzyme selected from methioninase, tyrosine phenol-lyase, tyrosine aminotransferase and cystathionine betasynthase, the composition further comprising a non-phosphate precursor of PLP selected from pyridoxal, pyridoxine and/or pyridoxamine encapsulated in the erythrocytes and/or present outside the erythrocytes.

2. The composition according to claim 1, comprising, as a non-phosphate form of a PLP precursor, pyridoxine.

3. The composition according to any one of the preceding claims, further comprising a phosphate PLP precursor selected from PNP (pyridoxine phosphate) and/or PMP (pyridoxamine phosphate), encapsulated in the erythrocytes.

4. The composition according to any one of the preceding claims, comprising from 0.01 to 30 mg of PLP-dependent enzyme per ml of red blood cells.

5. The composition according to claim 4, comprising from 0.05 to 10 mg of PLP-dependent enzyme per ml of red blood cells.

6. The composition according to any one of the preceding claims, further comprising pyridoxine kinase (PN-kinase), pyridoxine phosphate oxidase (PNP-oxidase), and/or an agent inhibiting PLP-phosphatase.

7. The composition according to any one of the preceding claims, comprising as a PLP-dependent enzyme, methioninase.

8. A kit comprising separately (i) erythrocytes and a pharmaceutically acceptable vehicle, the erythrocytes encapsulating a PLP-dependent enzyme selected from methioninase, tyrosine phenol-lyase, tyrosine aminotransferase and cystathionine betasynthase, and (ii) a solution of non-phosphate precursor of PLP selected from pyridoxal, pyridoxine and/or pyridoxamine for use as a drug.

9. The composition according to any one of claims 1-7, for use as a drug.

10. A composition comprising (i) erythrocytes and a pharmaceutically acceptable vehicle, the erythrocytes encapsulating a PLP-dependent enzyme selected from methioninase, tyrosine phenol-lyase, tyrosine aminotransferase and cystathionine beta-synthase,and (ii) a non-phosphate form of vitamin B6 selected from pyridoxine (PN), pyridoxal (PL), and pyridoxamine (PM), as a pharmaceutical combination for simultaneous, separate or sequential use in therapy.

11. Use of a kit comprising separately (i) erythrocytes and a pharmaceutically acceptable vehicle, the erythrocytes encapsulating a PLP-dependent enzyme in the form of methioninase, and (ii) a solution of non-phosphate precursor of PLP selected from pyridoxal, pyridoxine and/or pyridoxamine in the manufacture of a medicament for the treatment of cancer, notably against a cancer comprising tumoral cells auxotrophic for methionine, or in the treatment of homocysteinuria, hyperhomocysteinemia or an associated cardiovascular disease.

12. Use of the composition according to any one of claims 1 to 7, or claim 10, comprising methioninase, in the manufacture of a medicament for the treatment of cancer, notably against a cancer comprising tumoral cells auxotrophic for methionine, or in the treatment of homocysteinuria or hyperhomo-cysteinemia or an associated cardiovascular disease.

13. Use of a kit comprising separately (i) erythrocytes and a pharmaceutically acceptable vehicle, the erythrocytes encapsulating a PLP-dependent enzyme in the form of tyrosine phenol-lyase and (ii) a solution of non-phosphate precursor of PLP selected from pyridoxal, pyridoxine and/or pyridoxamine in the manufacture of a medicament for the treatment of a cancer comprising tumoral cells auxotrophic for tyrosine.

14. Use of the composition according to any of claims 1 to 7, or claim 10 comprising tyrosine phenol-lyase, in the manufacture of a medicament for the treatment of cancer, notably against a cancer comprising tumoral cells auxotrophic for tyrosine.

15. Use of a kit comprising separately (i) erythrocytes and a pharmaceutically acceptable vehicle, the erythrocytes encapsulating a PLP-dependent enzyme in the form of tyrosine aminotransferase and (ii) a solution of non-phosphate precursor of PLP selected from pyridoxal, pyridoxine and/or pyridoxamine in the manufacture of a medicament for the treatment of Richner-Hanhart syndrome (tyrosinemia type II).

16. Use of the composition according to any of claims 1 to 7, or claim 10, comprising tyrosine aminotransferase, in the manufacture of a medicament for the treatment of Richner-Hanhart syndrome (tyrosinemia type II).

17. Use of a kit comprising separately (i) erythrocytes and a pharmaceutically acceptable vehicle, the erythrocytes encapsulating a PLP-dependent enzyme in the form of cystathionine beta-synthase and (ii) a solution of non-phosphate precursor of PLP selected from pyridoxal, pyridoxine and/or pyridoxamine in the manufacture of a medicament for the treatment of homocysteinuria or hyperhomocysteinemia or an associated cardiovascular disease.

18. Use of the composition according to any of claims 1 to 7, or claim 10 , comprising cystathionine beta-synthase, in the manufacture of a medicament for the treatment of homocysteinuria or hyperhomocysteinemia or an associated cardiovascular disease.

19. The use according to any one of claims 11 to 18, wherein the non-phosphate form of PLP precursor or vitamin B6 is for administration via injection or oral route.