Claims

1. Use of a composition comprising adult human liver-derived progenitor cells in the manufacture of a medicament for the treatment of a patient who has developed or is at risk of developing acute-on-chronic liver failure (ACLF), said cells are heterologous human adult liver-derived progenitor cells (HALPC) that express at least one mesenchymal marker selected from CD90, CD44, CD73, CD13, CD140b, CD29, vimentin and a-smooth muscle actin (ASMA), wherein an amount of said medicament is to be administered to said patient and wherein the composition in the medicament comprises a dose of 0.25 to 2.5 million of said progenitor cells per kg body weight; wherein the composition in said medicament is substantially free of an effective amount of an anticoagulant, and wherein the patient does not receive any co-treatment with an anticoagulant.

2. The use according to claim 1, wherein said cells express at least one hepatic marker and/or exhibit a liver-specific activity.

3. The use according to claim 1, wherein said cells secrete HGF.

4. The use according to claim 1, wherein said cells secrete HGF and PGE2.

5. The use according to any one of the preceding claims, wherein said cells are measured:

    a. positive for a-smooth muscle actin (ASMA), CD140b and optionally albumin (ALB);
    b. negative for Cytokeratin-19 (CK-19) and optionally for Sushi domain containing protein 2 (SUSD2).

6. The use according to any one of the preceding claims, wherein said cells are further measured positive for:

    a. At least one hepatic marker selected from HNF-3B, HNF-4, CYP1A2, CYP2C9, CYP2E1 and CYP3A4 and optionally albumin;
    b. At least one mesenchymal marker selected from Vimentin, CD90, CD73, CD44, and CD29;
    c. At least one liver-specific activity selected from urea secretion, bilirubin conjugation, alpha-1-antitrypsin secretion, and CYP3A4 activity;

d. At least one marker selected from ATP2B4, ITGA3, TFRC, SLC3A2, CD59, ITGB5, CD151, ICAM1, AN PEP, CD46, and CD81; and
e. At least one marker selected from MMP1, ITGA11, FMOD, KCND2, CCL11, ASPN, KCNK2, and HMCN1.

7. The use according to any one of claims 1 to 6, wherein the composition comprises a dose of 0.5 to 1 million HALPC cells per kg body weight.

8. The use according to any of the preceding claims, wherein the patient has been or is diagnosed with a disease or condition selected from a non-cirrhotic chronic liver disease, cirrhosis, compensated cirrhosis, decompensated cirrhosis (DC), acute decompensated cirrhosis, acute decompensation (AD), and optionally wherein the patient is pre-ACLF or ACLF grade-0, or has an ACLF grade level selected from ACLF-1 and ACLF-2.

9. The use according to any of the preceding claims, wherein the patient, prior to the treatment, has been diagnosed with a MELD score in the range from 13 to 35, and/or is experiencing or has experienced at least one organ failure.

10. The use according to any of the preceding claims, wherein the patient, prior to the treatment, exhibits a total bilirubin serum concentration of at least 5 mg/dL, or of at least 6 mg/dL.

11. The use according to any one of claims 1 to 10, wherein the medicament is to be administered to the patient in the form of a sterile liquid comprising the HALPC cells at a concentration of 0.5 to 5 million cells per mL.

12. The use according to claim 11, wherein the sterile liquid composition is to be intravenously infused to the patient at an infusion rate of about 0.1 to about 5 mL per minute, or at a rate of 0.5 to about 2 mL per minute, such as about 1.5 mL per minute.

13. The use according to claim 12, wherein the composition is to be administered to the patient via a vertically mounted infusion pump.

14. The use according to any one of claims 1 to 13, wherein
a second amount of said medicament is to be administered to said patient, said second amount comprising a second dose of 0.25 to 2.5 million HALPC cells per kg body weight; wherein said second amount is to be administered 5 to 21 days after the first amount; and wherein said composition in said medicament is substantially free of an effective amount of an anti-coagulant, and wherein the patient does not receive any co-treatment with an anti-coagulant.

15. The use according to claim 14, wherein said second amount is to be administered 6 to 8 days after said first amount.

16. The use according to claim 15, wherein said second amount comprises a second dose of 0.5 to 1 million HLAPC cells per kg body weight.

17. The use according to claim 15 or 16, wherein said second amount is to be administered 7 days after said first amount.

18. The use according to any of the preceding claims, wherein the treatment results in a decrease in MELD score of the patient by at least 20%, preferably within 28 days after the composition has been first administered to the patient.

19. A composition comprising adult human liver-derived progenitor cells for use in the treatment of a patient who has developed or is at risk of developing acute-on-chronic liver failure (ACLF), said cells are heterologous human adult liver-derived progenitor cells (HALPC) that express at least one mesenchymal marker selected from CD90, CD44, CD73, CD13, CD140b, CD29, vimentin and a-smooth muscle actin (ASMA), wherein an amount of said composition which comprises a dose of 0.25 to 2.5 million of said progenitor cells per kg body weight is to be administered to said patient; and wherein the composition is substantially free of an effective amount of an anticoagulant, and wherein the patient does not receive any co-treatment with an anticoagulant.