WHAT IS CLAIMED IS:

1. A liver stem cell comprising the following characteristics:

(i) expresses at least 1, 2, 3 or 4 of the protein markers selected from SOX9, HNF4α, HNF3β, and EPCAM;

(ii) expresses low levels of KRT19 protein,

(iii) does not express detectable protein levels of KRT7 or AFP; and

(iv) does not have a polarized cell phenotype.

2. The liver stem cell of claim 1, that further expresses 1, 2, 3, 4, or 5 protein markers selected from CD24, PROM1, FOXA3, FOXQ1 and ECAD.

3. The liver stem cell of claim 1, wherein the characteristics of the stem cell are maintained in long-term culture, and comprise a normal karyotype after 19 passages in culture.

4. The liver stem cell of claims 1 to 3, wherein the liver stem cell is a mammalian liver stem cell.

5. The liver stem cell of claim 4, wherein the liver stem cell is a human liver stem cell.

6. The liver stem cell of claim 4, wherein the liver stem cell is a mouse liver stem cell.

7. The liver stem cell of claim 4, wherein the liver stem cell is a fetal liver stem cell.

8. The liver stem cell of claims 1 to 3, wherein the liver stem cell is isolated from a healthy subject.

9. The liver stem cell of claims 1 to 3, wherein the liver stem cell is isolated from a subject with liver disease, wherein the liver disease is selected from the group of metabolic disease, autoimmune disease, infectious disease, drug induced acute and chronic liver failure, and liver cancer.

10. A differentiated hepatocyte comprising at least one of the following characteristics:

(i) expresses the markers HNF4α and ALB;

(ii) expresses at least 1, 2, 3,4,5,6,7 or 8 of the CYP enzymes selected from CYP3A4, CYP2C9, CYP2B6, CYP1A2, CYP1A1, CYP2D6, CYP3A7, and CYP2E1;

(iii) have at least 1, 2 or 3 of the following functions:

a)functional glucose metabolism;

b) functional lipid metabolism;

c) functional albumin secretion;

(vi) indocyanine green (ICG) uptake; and

(vii) forms tight junctions when cultured with other differentiated hepatocytes under conditions sufficient to form an epithelium.

11. The differentiated hepatocyte of claim 10, wherein the differentiated hepatocyte expresses at least one of the terminal differentiation markers PEPCK1 or TAT.

12. The differentiated hepatocyte of claim 10, wherein the differentiated hepatocyte has inducible CYP function for at least 2, 3, or 4 of the CYPs selected from CYP3A4, CYP2C9, CYP2B6, CYP1A2, CYP1A1, CYP2D6, CYP3A7, and CYP2E1.

13. The differentiated hepatocyte of claim 10 that is able to store glycogen.

14. The differentiated hepatocyte of claim 10 that is able to uptake low density lipoprotein.

15. The differentiated hepatocyte of claims 10 to 14, wherein the differentiated hepatocyte is differentiated from a liver stem cell isolated from a healthy subject or from a subject with liver disease selected from the group of metabolic disease, autoimmune disease, infectious disease, drug induced acute and chronic liver failure, and liver cancer.

16. A differentiated cholangiocyte comprising at least one of the following characteristics:

(i) expresses the markers KRT19 (Accession no: P08727.4) and KRT7 (Accession no: P08729.5) and ECAD;

(ii) has columnar epithelial cell polarity comprising an apical region and a basolateral region when cultured with other differentiated cholangiocytes under conditions sufficient to form an epithelium;

(iii) comprises microvilli on the apical region;

(iii) forms biliary duct-like 3 dimensional (3D) structure when cultured with other differentiated cholangiocytes under conditions sufficient to form 3D structures.

17. The differentiated choloangiocyte of claim 16, wherein the differentiated choloangiocyte is differentiated from a liver stem cell isolated from a healthy subject or from a subject with liver disease selected from the group of metabolic disease, autoimmune disease, infectious disease, drug induced acute and chronic liver failure, and liver cancer.

18. Use of a liver stem cell of any one of claims 1 to 9 or a differentiated hepatocyte of any one of claims 10 to 15 for treating a subject having liver disease, comprising transplanting the liver stem cell or the differentiated hepatocyte into the liver of the subject, wherein the transplanted cell repopulates the liver of the subject, thereby treating the liver disease.

19. The method of claim 18, wherein the liver disease is selected from the group of metabolic disease, autoimmune disease, infectious disease, drug induced acute and chronic liver failure, and liver cancer.

20. Use of a liver stem cell of any one of claims 1 to 9 or a differentiated hepatocyte of any one of claims 10 to 15 in the manufacture of a medicament for treating a liver disease, wherein the liver stem cell or the differentiated hepatocyte is to be transplanted into the liver of the subject, and wherein the transplanted cell is to repopulate the liver of the subject to treat the liver disease.