

CLAIMS

1. A method of preparing a liver bud, comprising culturing vascular endothelial cells, mesenchymal cells and a hepatic endoderm cell *in vitro* in the presence of blood cells of the monocyte fraction of cord blood.
2. The method of claim 1, wherein the liver bud is a structure capable of differentiating into an organ through maturing.
3. The method of claim 1 or 2, wherein a liver bud with an improved albumin secretory capacity and/or increased expression of hepatocyte differentiation marker genes prepared compared with a liver bud prepared by culturing vascular endothelial cells, mesenchymal cells and a cell capable of differentiating into a liver cell *in vitro* in the absence of blood cells.
4. The method of any one of claims 1 to 3, wherein cells are cultured without using scaffold materials.
5. The method of any one of claims 1 to 4, wherein the blood cell comprises an undifferentiated hematopoietic cell.
6. The method of claim 5, wherein the undifferentiated hematopoietic cell is a hematopoietic progenitor cell and/or a hematopoietic stem cell.
7. The method of any one of claims 1 to 6, wherein the cell capable of differentiating into a liver cell is an undifferentiated cell induced from a pluripotent stem cell.
8. The method of claim 7, wherein the pluripotent stem cell is an induced pluripotent stem cell.
9. The method of claim 7 or 8, wherein the pluripotent stem cell is derived from human.

10. The method of any one of claims 1 to 9, wherein a liver bud with an improved albumin secretory capacity is prepared compared with a liver bud prepared by culturing vascular endothelial cells, mesenchymal cells and a tissue or organ cell *in vitro* in the absence of blood cells.
11. The method of claim 10, wherein a liver bud with increased expression of hepatocyte differentiation marker genes is prepared compared with a liver bud prepared by culturing vascular endothelial cells, mesenchymal cells and a tissue or organ cell *in vitro* in the absence of blood cells.
12. The method of claim 11, wherein the hepatocyte differentiation marker gene is at least one marker selected from the group consisting of α fetoprotein, albumin, CYP3A7, tryptophan metabolic enzyme TDO2 and sodium-taurocholate cotransporter.