CLAIMS

1. A method of enhancing or initiating regeneration of an organ in a subject in need thereof comprising the administration of endothelial cells specific to said organ, or inductive endothelial cells specific to said organ, into the area of the body in which organ regeneration is desired in said subject.

2. The method of claim 1, wherein said organ is the liver and said method comprises the intrahepatic transplantation of liver sinusoidal endothelial cells (LSECs), or inductive LSECs.

3. The method of claim 2, further comprising administration of VEGF-A.

4. The method of claim 2, wherein the LSECs or inductive LSECs are $VEGFR2^{+}VE\text{-}cadherin^{+}VEGFR3^{+}CD34^{-}$ factor $VIII^{+}$LSECs.

5. The method of claim 2, further comprising administration of hepatocytes.

6. The method of claim 1, wherein said organ is the lung and said method comprises intravenous or intratracheal transplantation of pulmonary capillary endothelial cells (PCECs), or inductive PCECs.

7. The method of claim 6, further comprising administration of one or more of MMP14, VEGF-A, or FGF.

8. The method of claim 6, wherein said PCECs or inductive PCECs express MMP14.

9. The method of claim 6, further comprising administration of epithelial progenitor cells.

10. A method of expanding hepatocytes in culture by co-culturing said hepatocytes with liver sinusoidal endothelial cells.

11. A method of expanding lung epithelial progenitor cells in culture by co-culturing said lung epithelial progenitor cells with pulmonary capillary endothelial cells.

12. A method to enhance or induce organ regeneration in a subject in need thereof comprising administering one or more of VEGF-A, VEGF-E, FGF-2, MMP14, EGF, or other EGF-receptor ligands to said subject in an amount sufficient to enhance or induce organ regeneration in said subject.

13. The method of claim 12, wherein the organ is the liver.

14. The method of claim 12, wherein the organ is the lung.

15. A pharmaceutical composition for administration to a subject in need of organ regeneration, comprising isolated endothelial cells specific to said organ, or isolated inductive endothelial cells specific to said organ, in combination with a pharmaceutically-acceptable carrier.

16. The pharmaceutical composition of claim 15, wherein said endothelial cells or inductive endothelial cells are autologous cells.

17. The pharmaceutical composition of claim 15, wherein the organ is the liver and the cells are $VEGFR2^{+}VE\text{-}cadherin^{+}VEGFR3^{+}CD34^{-}$ factor $VIII^{+}$ LSECs.

18. The pharmaceutical composition of claim 15, further comprising one or more of VEGF-A, VEGF-E, FGF-2, EGF, or MMP14.

19. The pharmaceutical composition of claim 15, wherein the organ is the lung and the cells are $VEGFR2^{+}VE\text{-}cadherin^{+}CD34^{+}CD31^{+}FGFR1^{+}$ PCECs.

20. A method of isolating liver-specific endothelial cells comprising isolating cells that are $VEGFR2^{+}VE\text{-}cadherin^{+}VEGFR3^{+}CD34^{-}$ factor $VIII^{+}$ cells.

21. A method of isolating lung-specific endothelial cells comprising isolating cells that are $VEGFR2^{+}VE\text{-}cadherin^{+}CD34^{+}CD31^{+}FGFR1^{+}$ cells.

CLAIMS

1. An invention not claimed in any divisional application.