Claims

1. Use of a suspension of stem/progenitor cells in the manufacture of a medicament for treating a pancreatic dysfunction or condition in which the suspension is to be introduced into or onto the walls of the biliary tree in a subject having a pancreatic dysfunction or condition, such that a substantial portion of the cells will take up residence in these walls, whereupon the cells will then mature into functional pancreatic cells and migrate to the pancreas, to treat the pancreatic dysfunction or condition.

2. The use according to claim 1, in which the pancreatic progenitor cells are biliary tree stem cells or pancreatic stem cells or committed progenitors derived from the stem cells.

3. The use according to claim 1, in which the suspension is combined with one or more biomaterials to form a matrix complex.

4. The use according to claim 3, in which the one or more biomaterials comprise collagens, adhesion molecules, proteoglycans, hyaluronans, glycosaminoglycan chains, chitosan, alginate, and synthetic, biodegradable and biocompatible polymers, or combinations thereof.

5. The use according to claim 1, in which the suspension is combined with hormones, growth factors, cytokines, additional cells, or combinations thereof.

6. The use according to claim 5, in which the growth factors can include one or more of the fibroblast growth factors (FGFs), R-spondin, hepatocyte growth factor (HGF), epidermal growth factor (EGF), vascular endothelial cell growth factor (VEGF), insulin like growth factor I (IGFI), insulin-like growth factor II (IGF-2), oncostatin-M, leukemia inhibitory factor (LIF), transferrin, insulin, glucocorticoids, growth hormones, estrogens, androgens, thyroid hormones, pituitary hormones, and combinations thereof.

7. The use according to claim 5, in which the additional cells comprise biliary tree stem

cells, angioblasts, and precursors to endothelia and stellate cells or combinations thereof.

8. The use according to claim 1, in which the cells are obtained from a portion of the biliary tree of the subject that is not diseased or dysfunctional.

9. The use according to claim 1, in which the cells are obtained from the biliary tree of a non-autologous donor.

10. The use according to claim 1, in which the suspension is introduced by laparoscopic surgery or by endoscopy.

11. The use according to claim 1, in which the suspension of cells is introduced via injection, a graft complex with a biodegradable covering, or sponge.

12. Use of a suspension of stem/progenitor cells in the manufacture of a medicament for repairing the function of a pancreas in a subject having a pancreas in a diseased or dysfunctional condition, in which the suspension is to be introduced into or onto the walls of the hepato-pancreatic common duct of the subject, such that a substantial portion of the introduced cells will take up residence in or on at least a portion of the pancreas as mature pancreatic cells *in vivo.*

13. The use according to claim 12, in which the cells are biliary tree stem cells or pancreatic stem cells or committed progenitors derived from the stem cells.

14. The use according to claim 12, in which the suspension is combined with one or more biomaterials to form a matrix complex.

15. The use according to claim 14, in which the one or more biomaterials comprise collagens, adhesion molecules, proteoglycans, hyaluronans, glycosaminoglycan chains, chitosan, alginate, and synthetic, biodegradable and biocompatible polymers, or combinations thereof.

16. The use according to claim 12, in which the suspension is combined with hormones, growth factors, cytokines, additional cells, or combinations thereof.

17. The use according to claim 16, in which the growth factors can include one or more of the fibroblast growth factors (FGFs), R-spondin, hepatocyte growth factor (HGF), epidermal growth factor (EGF), vascular endothelial cell growth factor (VEGF), insulin-like growth factor I (IGF-l), insulin-like growth factor II (IGF-2), oncostatin-M, leukemia inhibitory factor (LIF), transferrin, insulin, glucocorticoids, growth hormones, estrogens, androgens, thyroid hormones, pituitary hormones, and combinations thereof.

18. The use according to claim 16, in which the additional cells comprise biliary tree stem cells, angioblasts, and precursors to endothelia and stellate cells or combinations thereof.

19. The use according to claim 12, in which the cells are obtained from a portion of the biliary tree of the subject that is not diseased or dysfunctional.

20. The use according to claim 12, in which the cells are obtained from the biliary tree of a non-autologous donor.

21. The use according to claim 12, in which the suspension is introduced by laparoscopic surgery or by endoscopy.

22. The use according to claim 12, in which the suspension of cells is introduced via injection, a graft complex with a biodegradable covering, or sponge.

23. A suspension of stern/progenitor cells for use in treating a pancreatic dysfunction or condition in which the suspension is to be introduced into or onto the walls of the biliary tree in a subject having the pancreatic dysfunction or condition, such that a substantial portion of the cells will take up residence in these walls, whereupon the cells will then

mature into functional pancreatic cells and migrate to the pancreas, to treat the pancreatic dysfunction or condition.

24. A suspension of stem/progenitor cells for use in repairing the function of a pancreas in a subject having a pancreas in a diseased or dysfunctional condition, in which the suspension is to be introduced into or onto the walls of the hepato-pancreatic common duct of the subject, such that a substantial portion of the introduced cells will take up residence in or on at least a portion of the pancreas as mature pancreatic cells *in vivo.*

25. Use of a suspension of liver stem/progenitor cells in the manufacture of a medicament for treating a liver dysfunction or condition, in which the suspension is to be introduced into or onto the walls of the biliary tree in a subject having a liver dysfunction or condition, such that a substantial portion of the cells will take up residence in these walls, wherein the cells will then mature into functional liver cells and migrate to the liver, to treat the liver dysfunction or condition.

26. The use according to claim 25, in which the cells are biliary tree stem cells or hepatic stem cells or committed progenitors derived from the stem cells.

27. The use according to claim 25, in which the suspension is combined with one or more biomaterials to form a matrix complex.

28. The use according to claim 27, in which the one or more biomaterials comprise collagens, adhesion molecules, proteoglycans, hyaluronans, glycosaminoglycan chains, chitosan, alginate, and synthetic, biodegradable and biocompatible polymers, or combinations thereof.

29. The use according to claim 28, in which the growth factors can include one or more of the fibroblast growth factors (FGFs), R-spondin, hepatocyte growth factor (HGF), epidermal growth factor (EGF), vascular endothelial cell growth factor (VEGF), insulin like growth factor I (IGFI), insulin-like growth factor II (IGF-2), oncostatin-M, leukemia

inhibitory factor (LIF), transferrin, insulin, glucocorticoids, growth hormones, estrogens, androgens, thyroid hormones, pituitary hormones, and combinations thereof.

30. The use according to claim 25, in which the suspension is combined with growth factors, additional cells, or combinations thereof.

31. The use according to claim 25, in which the cells are obtained from a portion of the biliary tree of the subject that is not diseased or dysfunctional.

32. The use according to claim 25, in which the cells are obtained from the biliary tree of a non-autologous donor.

33. The use according to claim 25, in which the suspension is introduced by laparoscopic surgery or by endoscopy.

34. The use according to claim 25, in which the suspension of cells is introduced via injection, as a patch with a biodegradable covering, or sponge.

35. Use of a suspension of liver stem/progenitor cells in the manufacture of a medicament for repairing the function of a liver in a subject having a liver in a diseased or dysfunctional condition, in which the suspension is to be introduced into or onto the walls of the bile duct near to the liver of the subject, such that a substantial portion of the introduced cells will take up residence in or on at least a portion of the liver as mature liver cells *in vivo*.

36. A suspension of liver stem/progenitor cells for use in treating a liver dysfunction or condition, in which the suspension is to be introduced into or onto the walls of the biliary tree in a subject having the liver dysfunction or condition, such that a substantial portion of the cells will take up residence in these walls, wherein the cells will then mature into functional liver cells and migrate to the liver, to treat the liver dysfunction or condition.

37. A suspension of liver stem/progenitor cells for use in repairing the function of a liver in a subject having a liver in a diseased or dysfunctional condition, in which the suspension is to be introduced into or onto the walls of the bile duct near to the liver of the subject, such that a substantial portion of the introduced cells will take up residence in or on at least a portion of the liver as mature liver cells *in vivo*.