We claim:

1. A method of treating a pancreatic dysfunction or condition, comprising:

(a) obtaining a suspension of stem/progenitor cells; and

(b) introducing the suspension into or onto the walls of the biliary tree in a subject having a pancreatic dysfunction or condition, wherein a substantial portion of the cells takes residence in the bile duct wall, wherein the cells mature into functional pancreatic cells and migrate to pancreas, thereby treating the pancreatic dysfunction or condition.

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

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

6. The method 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 (IGF-1), 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 method 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 method 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 method according to claim 1, in which the cells are obtained from the biliary tree of a non-autologous donor.

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

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

12. A method of repairing the function of a pancreas in a subject having a pancreas in a diseased or dysfunctional condition, comprising:

(a) obtaining a suspension of the stem/progenitor cells; and

(b) introducing the suspension into or onto the walls of the hepato-pancreatic common duct of the subject, and wherein a substantial portion of the cells introduced take up residence in or on at least a portion of the pancreas as mature pancreatic cells *in vivo*.

13. A method of treating a liver dysfunction or conditions, comprising:

(a) obtaining a suspension of liver stem/progenitor cells; and

(b) introducing the suspension to the walls of the biliary tree in a subject having a liver dysfunction or condition, wherein a substantial portion of the cells takes residence in the bile duct wall, wherein the cells mature into functional liver cells and migrate to the liver, thereby treating the liver dysfunction or condition.

14. The method according to claim 13, in which the cells are biliary tree stem cells or hepatic stem cells or committed progenitors derived from those stem cells.

15. The method according to claim 13, in which the cells are biliary tree stem cells or hepatic stem cells or committed progenitors derived from those stem cells.

16. The method according to claim 13, in which the suspension is combined with one or more biomaterials to form a matrix complex.

17. The method according to claim 16, 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.

18. The method according to claim 13, in which the suspension is combined with growth factors, additional cells, or combinations thereof.

19. The method according to claim 17, 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-1), 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.

20. The method according to claim 17, in which the cells comprise one or more stem cell populations selected from the group consisting of biliary tree stem cells, hepatic or pancreatic stem cells, committed stem cells, angioblasts, and precursors to endothelia and stellate cells or combinations thereof.

21. The method according to claim 13, in which the cells are obtained from a portion of the biliary tree of the subject that is not diseased or dysfunctional.

22. The method according to claim 13, in which the cells are obtained from the biliary tree of a non-autologous donor.

23. The method according to claim 13, in which the suspension is introduced by laparoscopic surgery or by endoscopy.

24. The method according to claim 13, in which the suspension of cells is introduced via injection, as a patch with a biodegradable covering, or sponge.

25. A method of repairing the function of the liver in a subject having a liver in a diseased or dysfunctional condition, comprising:

(a) obtaining a suspension of the stem/progenitor cells; and

(b) introducing the suspension to the walls of the walls of bile ducts near to the liver of the subject, and wherein a substantial portion of the cells introduced take up residence in or on at least a portion of the liver as mature liver cells *in vivo*.

We claim:

1. Use of a suspension of stem/progenitor cells for the manufacture of a medicament for treating a pancreatic dysfunction or conditionin which the suspension is introduced into or onto the walls of the biliary tree in a subject having a pancreatic dysfunction or condition, wherein a substantial portion of the cells takes residence in the bile duct wall, wherein the cells mature into functional pancreatic cells and migrate to pancreas, thereby treating 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 (IGF-1), 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 for 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 introduced into or onto the walls of the hepato-pancreatic common duct of the subject, and wherein a substantial portion of the cells introduced take up residence in or on at least a portion of the pancreas as mature pancreatic cells *in vivo*.

13. Use of a suspension of stem/progenitor cells for the manufacture of a medicament for treating a liver dysfunction or conditions,

in which the suspension is introduced to the walls of the biliary tree in a subject having a liver dysfunction or condition, wherein a substantial portion of the cells takes residence in the bile duct wall, wherein the cells mature into functional liver cells and migrate to the liver, thereby treating the liver dysfunction or condition.

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

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

16. The use according to claim 13, in which the suspension is combined with one or more biomaterials to form a matrix complex.

17. The use according to claim 16, 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.

18. The use according to claim 13, in which the suspension is combined with growth factors, additional cells, or combinations thereof.

19. The use according to claim 17, 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-1), 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.

20. The use according to claim 17, in which the cells comprise one or more stem cell populations selected from the group consisting of biliary tree stem cells, hepatic or pancreatic stem cells, committed stem cells, angioblasts, and precursors to endothelia and stellate cells or combinations thereof.

21. The use according to claim 13, in which the cells are obtained from a portion of the biliary tree of the subject that is not diseased or dysfunctional.

22. The use according to claim 13, in which the cells are obtained from the biliary tree of a non-autologous donor.

23. The use according to claim 13, in which the suspension is introduced by laparoscopic surgery or by endoscopy.

24. The use according to claim 13, in which the suspension of cells is introduced via injection, as a patch with a biodegradable covering, or sponge.

25. Use of a suspension of stem/progenitor cells for the manufacture of a medicament for repairing the function of the liver in a subject having a liver in a diseased or dysfunctional condition, in which the suspension is introduced to the walls of the walls of bile ducts near to the liver of the subject, and wherein a substantial portion of the cells introduced take up residence in or on at least a portion of the liver as mature liver cells *in vivo*.