

P012 Beta-cells from embryonic extrahepatic biliary ducts
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Beta-cells usually reside in the islets of the pancreas, but we have discovered that they can also occur in low numbers in the extra-hepatic biliary system in the hilar region.

We have now studied the potential of the embryonic extrahepatic biliary system of mouse liver to generate pancreatic endocrine cells using an explant culture system. Beta-cells and other endocrine cells (producing glucagon, somatostatin, pancreatic polypeptide and ghrelin) were found within and adjacent to the duct epithelium and their number increased during culture.

Cells expressing Pdx1 and Ngn3 were mainly restricted to the ducts of the hilar region and were not found in the gall bladder.

Lineage tracing using Rosa26 pancreatic explants and Alb-Cre x Stopfloxed LacZ mice, suggest that these beta-cells are of biliary duct origin rather than migrating from the ventral pancreas.

The presence of bile duct beta-cells has important implications for regenerative medicine and indicates that it may be possible to create beta-cells from biliary epithelium.