



ISLET CELL TRANSPLANTATION

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There is an urgent need for better treatment of diabetes. The islet cells, which normally produce insulin, are destroyed in people with diabetes. A more favourable option to long-term treatment with insulin is islet cell transplantation into the patient. We are investigating the possibility of transplanting pig islet cells into humans for two reasons. Firstly, the disease process that destroys human islets does not appear to attack pig islets. Secondly, with the large numbers of

diabetic patients in the world, it would be impossible to obtain enough islets from human donors. We are working on developing experimental methods to allow the pig islets to survive and produce insulin in humans. This project is designed to investigate new methods of modifying pig islet tissues so that grafts will survive longer.

Techniques:

- Molecular Biology
- Islet cell isolation and culture
- Cell culture
- Proliferation assays
- Animal models
- Immunostaining
- Western-blot
- Lentiviral expression
- FACS analysis

Projects

1. Modification of pig islets to promote graft survival

Publications:

McKenzie IF, Li YQ, Xing PX, Dinatale I, Koulmanda M, Loveland BE, Sandrin MS. CD46 protects pig islets from antibody but not cell-mediated destruction in the mouse. *Xenotransplantation*;10:615-21, 2003.