



LABORATORIES INC

Scharp Consulting
David W. Scharp, MD

“First to Develop” Milestones

- 1. 1973 – First to Develop the use of Ficoll density gradients to purify islets –**
Scharp, D.W., Kemp, C.B., Knight, M.J., Ballinger, W.F., Lacy, P.E. - The use of Ficoll in the preparation of viable islets of Langerhans from the rat pancreas, *Transplantation* 16:686-689, 1973
- 2. 1973 – First to Develop the portal vein of the liver as a site for injection of islets for treating diabetes -**
Kemp, C.B., Knight, M.J., Scharp, D.W., Lacy, P.E., Ballinger, W.F. - Transplantation of isolated pancreatic islets into the portal vein of diabetic rats, *Nature* 244:447, 1973
- 3. 1975 – First to Develop the portal vein site in non-human primates for treating diabetes -**
Scharp, D.W., Murphy, J.J., Newton, W.T., Ballinger, W.F., Lacy, P.E. - Transplantation of islets of Langerhans in diabetic Rhesus monkeys, *Surgery* 77:100-105, 1975
- 4. 1975 – First to Develop a major new approach to process islets from pancreas**
Scharp, D.W., Murphy, J.J., Newton, W.T., Ballinger, W.F., Lacy, P.E. - Application of an improved isolation technique for islet transplantation in primates and rats, *Transplant. Proc.* 6(1):739-741, 1975
- 5. 1979 – First to Develop a single injection of ALS to prevent allograft rejection in islets held in low temperature culture –**
Lacy, P.E., Davie, J.M., Finke, E.H., Scharp, D.W. - Prolongation of islet allograft survival, *Transplantation* 27:171-174, 1979
- 6. 1980 – First to Develop the Digestion/Filtration Method to process islets from the pancreas -**
Downing, R., Scharp, D.W., Ballinger, W.F. - An improved technique for the isolation and identification of mammalian islets of Langerhans, *Transplantation* 29:79-83, 1980
Scharp, D.W., Downing, R., Merrell, R.C., Grieder, M. - Isolating the elusive islet, *Diabetes* 29(1):19-30, 1980
- 7. 1980 – First to Coin Term “Pseudo-Islets” for reaggregation by gyrotational culture of purified islet single cells and First to Develop Pseudo-Islets -**
Britt, L.D., Scharp, D.W. - Formation of pseudo-islets from neonatal pig pancreas, *Surgical Forum* 31:354-356, 1980
Britt, L.D., Stojeba, P.C., Scharp, C.R., Grieder, M.H., Scharp, D.W. - Neonatal pig pseudo-islets: A product of selective aggregation, *Diabetes* 30:580-583, 1981
- 8. 1983 – First to Coin Term “Immuno-Isolation” to describe islet encapsulation –**
Scharp, D.W., Mason, N.S., Sparks, R.E. - Islet immunoisolation: the use of hybrid artificial organs to prevent islet tissue rejection, *World J. of Surgery* 8:221-229, 1984

- 9. 1986 – First to Develop free flow electrophoresis separation of islet cells with ground and zero gravity studies on STS-8 Challenger Space Shuttle Flight –**
Hymer, W.C., Scharp, D.W., et al. - Continuous flow electrophoretic separation of proteins and cells from mammalian tissues, *Cell Biophysics* 10:61-85, 1987
- 10. 1987 – First to Develop automated islet processing for human pancreas based on earlier development of pancreas digestion/filtration method –**
Ricordi, C., Lacy, P.E., Finke, E.H., Olack, B.J., Scharp, D.W. - Automated method for isolation of human pancreatic islets, *Diabetes* 37:413-420, 1988
- 11. 1988 – First to Describe microbial contamination risks in human islets –**
Corlett, M.P., Scharp, D.W., Lacy, P.E. - Microbial contamination risks in human islet isolation, *Transplant Proc* 20 (Suppl. 1):894-895, 1988
Scharp, D.W., Lacy, P.E., McLearn, M., Longwith, J.E., Olack, B.J. - The bioburden of 590 consecutive human pancreata for islet transplant research, *Transplant Proc* 24(3):974-975, 1992
- 12. 1989 – First to Document insulin independence following portal vein islet transplantation in a human Type 1 Diabetic recipient -**
Scharp, D.W., Lacy, P.E., Santiago, J.V., McCullough, C.S., Weide, L.G., Falqui, L., Marchetti, P., Gingerich, R.L., Jaffe, A.S., Cryer, P.E., Anderson, C.B., Flye, M.W. - Insulin independence after islet transplantation into Type 1 diabetic patient, *Diabetes* 39:515-518, 1990
- 13. 1991 – First to Describe human series of Intra-portal vein islet transplants –**
Scharp, D.W., Lacy, P.E., Santiago, J.V., McCullough, C.S., Weide, L.G., Boyle, P.J., Falqui, L., Marchetti, P., Ricordi, C., Gingerich, R.L., Jaffe, A.S., Cryer, P.E., Hanto, D.W., Anderson, C.B., Flye, M.W., - Results of our first nine intraportal islet allografts in Type 1, insulin-dependent diabetic patients, *Transplantation* 51:76-85, 1991
- 14. 1994 – First to Develop human islet allografts encapsulated in hollow fibers implanted subcutaneously without immunosuppression –**
Scharp, D.W., Swanson, C.J., Olack, B.J., Latta, P.P., Hegre, O.D., Doherty, E.J., Gentile, F.T., Flavin, K.S., Ansara, M.F., Lacy, P.E. - Protection of encapsulated human islets implanted without immunosuppression in patients with Type I and Type II diabetes and in non-diabetic controls, *Diabetes* 43:1167, 1994
- 15. 1995 – First to Develop PEG conformal coatings for treating diabetes –**
Hill, R.S., Cruise, G.M., Hager, S.R., Lamberti, F.V., Yu, X., Garufis, C.L., Yu, Y., Mundwiler, K.E., Cole, J.F., Hubbell, J.A., Hegre, O.D., Scharp, D.W. - Immunoisolation of adult porcine islets for the treatment of diabetes mellitus, *Annals of the NY Academy of Sciences* 831:332-343, 1997
- 16. 2005 – First to Describe PEG conformal coated islet allograft prolonged function in diabetic non-human primates without immunosuppression –**
Scharp, D, Yu, X, Sheckler, V, Hubbell, J, Latta, P. – Clinically relevant results from encapsulated islet allografts implanted subcutaneously in diabetic baboons without long term immunosuppression. *Diabetes* 54: Sup 194-OR, 2005.
- 17. 2006 – First to Describe PEG conformal coated human islet allografts –**
Scharp, D, Schwartz, S, Mulgrew, P, Albrecht, G, Oberholzer, J, Kuhlreiber, W, Yu, X. – Encapsulated human islet allografts: Phase I / II Clinical Trial. *Diabetes* 55: Sup , 2006.

18. 2008 – First to Develop GMP level islet specific tissue culture media to improve islet recovery from processing, 2-3 week culture, and islet transport –

W.M. Kühnreiter, L.T. Ho, A. Kamireddy, J.A.W. Yacoub, D.W. Scharp - Islet Isolation From Human Pancreas With Extended Cold Ischemia Time *Transplantation Proceedings* 42: 2027-2031, 2010