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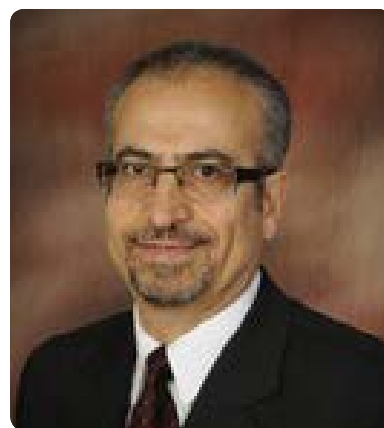
PLG scaffolds engineered with an immunomodulatory molecule as an effective means of establishing localized tolerance to pancreatic islet grafts

Transplantation of allogeneic pancreatic islets is an effective means of treating type1 diabetes (T1D). However, widespread application of this approach is hampered by the need for chronic immunosuppression to control rejection. Immunosuppressive agents used in the clinic have various adverse effects that compromise the life quality of graft recipients. The development of immunomodulatory approaches that induce tolerance without the need for chronic immunosuppression is an immediate medical need. In this study, we engineered PLG

scaffolds with SA-FasL as an immunomodulatory molecule and demonstrated that allogeneic islets loaded on the engineered scaffolds when transplanted into epididymal fat pad of allogeneic recipients under a short course of rapamycin (15 daily doses only) achieved indefinite survival. Importantly, the grafted islets normalized blood glucose levels, demonstrating function. Thus, PLG scaffolds engineered with SA-FasL represent a novel immunomodulatory concept for the induction of tolerance to islet allografts with significant translational potential.

Biography

Haval Shirwan is Dr. Michael and Joan Hamilton Endowed Chair in Autoimmune Disease, Professor of Microbiology and Immunology, Director of Molecular Immunomodulation Program at the Institute for Cellular Therapeutics. He conducted his Graduate studies at the University of California in Santa Barbara, CA and Postdoctoral studies at California Institute of Technology in Pasadena, CA. He joined the University of Louisville in 1998 after holding academic appointments at various academic institutions in the United States. His research



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focuses on the modulation of the immune system for the treatment of immune-based diseases with a particular focus on type 1 diabetes, transplantation and cancer immunoprevention and immunotherapy. He is an inventor on over a dozen of worldwide patents, founder and CEO/CSO of FasCure Therapeutics, LLC, widely published, organized and lectured at numerous national/international conferences, served on study sections for various federal and non-profit funding agencies and is on the Editorial Board of a number of scientific journals. He is a member of several national and international societies and recipient of various awards.

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