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TITLE

Prolongation of Survival of Pancreatic Islet Allografts Encapsulated in a BAP after co- transplantation with myeloid derived suppressor cells

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We have been developing a bioartificial pancreas which utilizes semipermeable amphiphilic membranes to immunoisolate pancreatic islet cells and have retrieved viable encapsulated porcine islets from dogs after three weeks. Rejection, however, is not the only problem which can impact islet survival. Encapsulated islets have been shown to have improved survival in the presence of VEGF and fibrin sealant, but VEGF has a short half-life. Therefore, we decided to co-transplant cells which produce large amounts of growth factors. Myeloid derived suppressor cells (MDSCs) have two advantages: 1) they are rich in VEGF, and 2) they have immunosuppressive properties. Our lab has recently shown that MDSCs markedly augment the survival of mouse islet allografts when placed under the renal capsule from 14 days to > 350 days. We are currently conducting experiments to see if co-transplantation of MDSCs will similarly improve results for encapsulated syngeneic and allogeneic islets.

Biography

Sharon Grundfest-Broniatowski has an SBEE degree from MIT (1969) and an MD from Columbia University College of Physicians and Surgeons (1973). She is Associate Professor of Surgery at The Cleveland Clinic Lerner College of Medicine (CWRU). She has a long standing interest in pancreatic whole organ and islet transplantation for diabetes.