A fibrin gel carrier system for islet transplantation into kidney subcapsule.

Authors: Lim JY, Min BH, Kim BG, Han HJ, Kim SJ, Kim CW, Han SS, Shin JS

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Abstract:

Islet transplantation is a promising therapeutic option for type 1 diabetes, and actively performed in the clinic as well as in the animal experiments. For the rodent experiments, islet transplantation into kidney subcapsule is widely used to assess islet quality, however, it is often difficult to do using a polyethylene tubing and fine needle because of inherent dead volume of needle and stickiness of the tubing to islets. This problem makes it difficult to interpret the physiological response to different islet doses. Here, we developed a simple fibrin gel carrier system for islet transplantation into kidney subcapsule and utilized it to determine the marginal islet mass sufficient for correction of hyperglycemia in diabetic nude mice.