

P027 Characterization of Human Pancreatic Islet Niche.
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Background and Aims: Earlier studies showed that mouse islets lack their own basement membrane (BM), instead interact with endothelial BM. The aims of this study were to characterize the BM structure of human pancreatic islets and study adhesion mechanism of islet cells to specific BM components.

Materials and Methods: Antibodies against laminin (LM) chains, collagen IV, nidogen and specific LM receptors (integrins and lutheran/BCAM) were employed to study their expression in surgically obtained human pancreatic samples. Single cells of isolated human islets were used for short term in-vitro adhesion studies.

Results and Conclusions: Our results showed that unlike mouse islets, human islets possess a duplex BM organization of endocrine and endothelial cell LMs, where LM-511 in particular marks the peri-islet milieu. Lutheran/BCAM, a non-integrin LM receptor is highly expressed on the peripheral islet cells facing the BM. Human beta cells adhere effectively to LM-511 and the adhesion is completely blocked by soluble recombinant lutheran. These findings disclose a hitherto unrecognized islet BM organization in the human pancreas, revealing major species differences between human and mouse.