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Title: Modeling In Vitro what went wrong: Stem Cell-derived Islets to Understand Diabetes

Abstract: Recent progress in generating stem cell-derived beta cells opens new avenues for the modelling and treatment of diabetes. We have recently developed optimized protocols to generate functionally mature stem cell (SC)-islets that display glucose stimulated insulin secretion, electrophysiology, exocytosis and gene expression comparable to adult islets. In combination with genome editing approaches, these functional SC-islets can now be exploited to unravel the molecular mechanisms leading to diabetes. In this seminar, we will provide an overview on the disease modeling possibilities that stem cells offer to study the impact of coding and non-coding genetic variants on pancreatic islet cell development and physiology