Type 1 diabetes is characterized by autoimmune insulitis and islet cell apoptosis. Recent study indicate miRNA may have role in the development of type 1 diabetes. This study analysed the miRNA expression profile in the pancreas of type 1 diabetes model NOD mouse, and investigated the influence of miR-125b in pancreatic β-cell dysfunction.

20 NOD mice are raised, pancreas sample are collect for pathological analysis, microarray were used to analyze miRNA expression profile, which found miR-125b have significant alteration. In PA (palmitic acid) induced apoptosis model with islet cell line. MiR-125b expression were measured. Transient transfection with mimics and inhibitor of miR-125b in islet cells, Bak1, Cytochrome C and caspase-3 expression were measured. Dual luciferase reporter assay was to validate if Bak1 is target gene of miR-125b. The effect of miR-125b on proliferation, apoptosis and insulin secretion in β-cells were analyzed through flow cytometry, CCK8 assay and ELISA.

Our findings suggest that miR-125b may participate in pancreatic β-cell dysfunction, and involve in the molecular mechanism of type 1 diabetes, by maybe as a novel target for the treatment of this disease.

References:

Acknowledgement:
Thanks for my family