# TITLE: Genomic Approach to Identify Reference Basic Genes In Glucose Homeostasis Along With The Immunohistochemical Profile Of Diabetic And Non-Diabetic Human Pancreases

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## ABSTRACT (upto 300 words)

The pathogenesis of hyperglycemia observed in most forms of diabetes is intimately tied to the islet β cell. Impairments in pro-peptide processing and secretory function, along with the loss of these vital cells, is demonstrable not only in those in whom the diagnosis is established but typically also in individuals who are at increased risk of developing the disease. Due to ethical and practical difficulties, genomic or pathological data in Indian population are remarkably missing. Here we report genome transcript analysis validated by quantitative reverse transcription–polymerase chain reaction (qRT–PCR) and correlated with immunohistological observations for 21 pancreases. We analyzed clinical-pathological features of 21 pancreas with the expression pattern of various genes which were involved in the glucose homeostasis in order to understand their prognostic value. We also investigated the pathological differences between diabetic and non-diabetic samples and the expression of insulin in each case along with pathological changes associated with beta cell density, expression, size, diameter etc. This study provides an insight into the complex pattern of the gene expression disturbances that occur in the diabetic and non-diabetic pancreas. Further on, we have observed the immunopathological and histochemical mechanisms that highlight a number of–inflammatory, immunoregulatory and regenerative pathways, some of which have received relatively little attention so far.

## BIOGRAPHY (upto 200 words)

Dr.Nithyakalyani has completed her PhD at the age of 27 years from Madras University, India. She is the Chief Scientist of Apollo group of Hospitals, Chennai, India. Dr.Nithya is also the Founder and Director of iGN biotech and Cell2Cure therapies private limited. She has been instrumental in bringing up few of the human stem cell related and genomic based products in India. Currently she is responsible for setting up the Islet transplant center in India along with the Indian Council for Medical Research [Govt of India]. She has 4 patents and many publications in the National and International Journals to her credit. She has been serving as an editorial board member of several reputed journals.

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