

PROJECT SUMMARY

Ref No.: MRIC/IBG3/HI/015	Title: Beyond Chronological Age: Unravelling the Molecular Drivers of Aging in Type 2 Diabetes Patients
Local Institution: University of Technology, Mauritius	
Project Leader	
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TECHNICAL ABSTRACT This project aims to explore the relationship between biological age, diabetes mellitus, and aging-related genetic mechanisms. Type 2 diabetes (T2D), a rapidly growing global health concern, is associated with accelerated biological aging and a higher risk of mortality. This is particularly important in regions like Mauritius, where a significant portion of the adult population suffers from T2D, leading to reduced life expectancy and poor quality of life. The project will focus on the role of sirtuins, a family of proteins involved in key cellular processes, in regulating aging and diabetes. Sirtuin genes, particularly SIRT1, have been linked to insulin regulation and glucose metabolism in T2D, potentially affecting the disease's progression. Additionally, epigenetic changes, including DNA methylation, are emerging as reliable biomarkers for biological aging. Previous research has shown that accelerated epigenetic aging may precede the clinical onset of T2D by up to a decade. By investigating the epigenetic modifications associated with diabetes and aging, this project seeks to deepen our understanding of the molecular interplay between diabetes and aging, with the potential to identify early biomarkers for intervention and improve health outcomes.	
Key Words: Diabetes, aging, epigenetic, biomarkers	