

## ABSTRACT

Diabetes Mellitus (DM) is a metabolic disease characterized by chronic hyperglycemia with continuous deterioration in the metabolism of proteins, carbohydrates and lipids. T2D is considered as a multifactorial disorder, causative modified factors (obesity, sedentary lifestyle, dietary fibers metabolic) and non-modified factors (family history, age gender and history of gestational diabetes) are responsible for the onset of disease. Current study is based to analyze the polymorphic association of *TCF7L2* gene with diabetes in family clustering. In current research the genotype analysis of variant of rs7903146 shows (C/T) polymorphism in Pakistani population. It was evaluated that both paternal and maternal history, involved for the transfer of T2D. There was no association found for rs290487 (C/T) and rs12255372 (G/T) polymorphism with Diabetes in our population. It also observed that different population had different culture and custom, both genetic and environment factors are involve for the onset of disease. In conclusion, these variant (rs290487 and rs12255372) role in our multicultural, heterogeneous population is not associated with Diabetes. Further study is require to check the association of *TCF7L2* gene with other genetic markers.