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Identification of Bio-Markers for Gestational Diabetes Mellitus Using Sequencing Mining Techniques

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Gestational diabetes mellitus (GDM) is a transient asymptomatic disorder in which glucose intolerance occurs during pregnancy. GDM is a risk factor for the development of type 2 diabetes. GDM is also associated with adverse perinatal pediatric complications. In the present study, we evaluated the role of several genes/proteins that are believed to be involved in the evolution of GDM by employing multiple sequence alignment using ClustalW tool and constructed a phylogram tree using functional protein sequences extracted from NCBI. Phylogram was constructed using Neighbor-Joining Algorithm in bioinformatics approach. Bioinformatics analysis revealed that glucokinase (MODY 2) gene as a key factor associated with the development of GDM. This lends further support for the proximate association between Glucokinase (MODY 2) gene and GDM. Based on this finding, it is suggested that early identification of glucokinase (MODY2) gene mutations or polymorphism may aid in the detection, prevention and early treatment of GDM.