

TITLE

**Role of macrophage
Ox-LDL receptor,
CD36 and its genetic
variants in type 2
diabetes**

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Background: Type 2 diabetes mellitus (T2DM) is a common and serious metabolic disorder worldwide. Diabetes mellitus can lead to different complications like cardiovascular disease (CVD) and atherosclerosis. High levels of plasma low density lipoprotein (LDL) become atherogenic when oxidized to modified LDL (Ox-LDL) by inducing foam cell formation via enhanced expression of cell surface receptors on macrophages viz. CD36. Several SNPs in CD36 gene have been found to be associated with metabolic syndrome and HDL metabolism, both predictors of heart disease and T2DM. In addition to Ox-LDL, raised levels of glucose, insulin resistance, low HDL cholesterol and increased levels of free fatty acid (FFA) result in increased CD36 expression.

Aim: To study the association of CD36 gene polymorphisms with T2DM in the North Indian population and assign its role in disease susceptibility.

Methodology: A panel of ten known SNPs both from coding and noncoding regions of the CD36 gene was genotyped by using PCR-RFLP and SSCP techniques. The products were observed on 10-12% polyacrylamide gels followed by ethidium bromide or silver staining and results were analyzed by using SPSS software (v15.0).

Results: A highly significant genotypic association of rs1761667 (G>A) and rs3211938 (T>G) was observed in T2DM patients ($P < 0.0001$). The presence of 'GA' and 'TG' genotypes seem to confer predisposition to development of diabetes in the North Indian population.

Conclusion: Our study suggests that the haplotypic analysis of CD36 gene variants will enable early identification of T2DM and lead to targeting people at risk and taking timely action.

Biography

Dr. Monisha Banerjee received Ph.D from Banaras Hindu University, India (1997), postdoc at Medical Genetics Department of SGPG Institute of Medical Sciences, Lucknow. She joined as Assistant Professor at BHU (2004) and moved to Lucknow University in 2005. She is Co-ordinator, Genetics and Genomics, Faculty-Incharge Molecular and Human Genetics Laboratory, Assistant Dean, Students' Welfare of university, Treasurer, Indian Society of Cell Biology (ISCB 2011-2013). She has four national projects and supervises six Ph.D students. She has published more than 30 papers and reviewed articles on diabetes. Her research areas are molecular genetics of Type 2 diabetes, cancer and prenatal diagnosis.