

# Screening of Natural Antimutagenic Chemotherapeutic Compounds for the Treatment of Diabetes Mellitus- An *Insilico* Pharmaco-Chemical Approach

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The past two decades have seen an explosive increase in the number of people diagnosed with diabetes mellitus worldwide, which is found associated with modern lifestyle, abundant nutrient supply, reduced physical activity, and obesity. Numerous studies have shown that insulin resistance precedes the development of hyperglycemia in subjects that eventually develop DM (Diabetes Mellitus). 120 natural molecules were taken as lead molecules which are responsible for inhibiting the biological processes by pharmaco-chemical approach are important in treatment of diabetes mellitus. The investigational drugs which are under clinical trials were used as the reference drug in this study. It was found that PPAR pathway is an important factor regarding

diabetes mellitus. PPAR gamma (PDB ID: 1I7I) was taken as target protein and structure for the same was retrieved from PDB. Hesperidin which is the principal chemical compound present in citrus fruits showed better ligand binding affinity towards the PPAR (Peroxisome Proliferator- Activated Receptor) Gamma and can play a role of potent anti diabetic agent for the treatment of Diabetes mellitu. It also showed less toxicity effect than the reference drugs in terms of LD 50. It is found that Hesperidin shows reliable pharmacokinetics and pharamacodynamics features than the reference drug. Further *invivo* and *invitro* studies have to be conducted to concrete evidence against anti diabetic activity of these compounds and target specificity for PPAR gamma.