Homology modeling and molecular docking studies on Type II diabetes complications reduced PPARγ receptor with various ligand molecules

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ABSTRACT

Peroxisome proliferator-activated receptor gamma (PPARγ), a type II nuclear receptor present in adipose tissue, colon and macrophages. It reduces the hyperglycemia associated metabolic syndromes. Particularly, type II diabetes-related cardiovascular system risk in human beings. The fatty acid storage and glucose metabolism are regulated by PPARγ activation in human body. According to recent reports commercially available PPARγ activating drugs have been causing severe side effects. At the same time, natural products have been proved to be a promising area of drug discovery. Recently, many studies have been attempted to screen and identify a potential drug candidate to activate PPARγ. Hence, in this study we have selected some of the bio-active molecules from traditional medicinal plants. Molecular docking studies have been carried out against the target, PPARγ. We Results suggested that Punigluconin has a efficient docking score and it is found to have good binding affinities than other ligands. Hence, we concluded that Punigluconin is a better drug candidate for activation of PPARγ gene expression. Further studies are necessary to confirm their efficacy and possibly it can develop as a potential drug in future.