Docking Studies of Rauwolfia Serpentina Alkaloids as Insulin Receptor Activators

Abstract

Rauwolfia serpentina also known as Sarpagandha is an integral part of Ayurvedic medical system for over centuries for the treatment of various ailments. The leaves and roots of Rauwolfia serpentina contain alkaloids which are secondary metabolites. Major alkaloids identified are Reserpine, Rauwolfine, Serpentine, Sarpagine, Ajmaline, Yohimbine and Ajmalicine. Insulin binds to insulin receptors that are present on different cells of the body. Insulin mediates the absorption of glucose into the cell. Insulin receptor belongs to the class of tyrosine kinase receptor. The three dimensional structure of Insulin Receptor was obtained from PDB database and that of the Alkaloids present in Rauwolfia serpentina were downloaded from CHEMSPIDER database. Docking studies of Insulin Receptor with Alkaloids of Rauwolfia serpentina were performed using Arguslab 4.0.1, Autodock 4.0 and Autodock Vina. The analysis of the results of all three docking softwares suggested that few of the alkaloids present in Rauwolfia serpentina may be potential activators of Insulin Receptor.

References
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