
***In-silico* evaluation of α -bisabolol β -D-fucopyranoside as BACE1, Amyloid- β , and Tau protein inhibitor in the treatment of Alzheimer's disease**

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Abstract

Alzheimer's disease (AD) is a multifactorial neurodegenerative disease characterized by accumulation of Amyloid- β and tau protein found in brain region that resulting loss of memory and cognitive decline. Currently approved drugs offer only symptomatic treatments for this disease or target only a single pathway of the disease manifestation. Therefore, identification of potent multitarget drug remains major treatment of AD. The present study is to evaluate the α -bisabolol β -D-fucopyranoside (ABFP) against BACE1, Amyloid- β and Tau protein inhibitory activity by using molecular docking studies. *In silico* docking studies were carried out using Autodock software based on GLIDE (Grid-based Ligand Docking with Energetics). The results of *in silico* molecular studies revealed that strong binding affinities of the ABFP towards all three targets suggesting its ability to modulate the AD pathology. These finding suggested ABFP can be proposed as an effective drug to combat the multiple targets of AD. Further investigations on ABFP is necessary to establish its potential as a novel chemical entity for Alzheimer's disease therapy.

Keywords: Alzheimer's disease; α -bisabolol β -D-fucopyranoside (ABFP), Molecular docking, Multi-Targeted Lead.