**ID: 6577**

**Congress:** 1st Tabriz International Life Science Conference and 12th Iran Biophysical Chemistry Conference

**Title:** A Study on the Effects of Some Polyphenolic Molecules on Aβ (25-35)

**Authors:** M. Ghobeh1, Sh. Ahmadian1, A.A. Meratan2, A. Ebrahim-Habibi3, A. Ghasemi1, M. Shafiezadeh1, M. Nemat-Gorgani4

**Abstract:** Alzheimer's disease (AD) is a progressive neurodegenerative disorder which has been a major public health problem with no cure or effective treatment. Although the cause of AD is not fully understood, studies indicate that aggregation of misfolded amyloid β peptide (Aβ) is the central event in the disease pathogenesis. The pathophysiological properties of Aβ can be studied through Aβ <sub>25-35</sub> which is a special Aβ species retaining both physical and biological properties of intact Aβ. In order to prevent or reverse Aβ aggregation, diverse therapeutic strategies have been employed such as the application of small molecules. In the present work, the ability of some small, natural, and nontoxic polyphenolic molecules including resveratrol was investigated on preventing amyloid formation or disruption of preformed Aβ <sub>25-35</sub> fibrils. Various techniques including fluorescence (ThT), Circular Dichroism (CD) spectroscopy, and Transmission Electron Microscopy (TEM) were applied to characterize the inhibitory effect of these small molecules. The inhibition of fibril formation and clearance of fibrillar structures of Aβ <sub>25-35</sub> at 37°C in deionized water were confirmed by the applied techniques in presence of polyphenolic molecules. Obtained data clearly demonstrated the inhibitory effect of these small polyphenolic molecules in the amyloidogenesis pathway of Aβ <sub>25-35</sub>. Development and application of such natural and nontoxic molecules with the ability to interfere with Aβ aggregation could offer great promises for efficient therapies of Alzheimer's disease.

**Alzheimer's disease, Amyloid beta peptide, Aggregation, Polyphenolic molecules, Aggregation inhibitors**

**Presentation:** Poster