Effect of Nutraceutical Supplements on Beta Amyloid (Aß) Nucleation and Growth

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Alzheimer’s disease (AD) is an epidemic that affects more than 5.4 million Americans and is the sixth leading cause of death. Previous research has suggested that the dysfunction and degeneration of nerve cells (neurons) associated with this disease can be caused by the accumulation of densely populated fibrous structures, or plaques. Scientists have verified that the Beta Amyloid (Aß) protein is responsible for the generation of these insoluble aggregates; however, the process by which they form remains unidentified. While a potential disease modifying treatment for AD has been discovered, there is no conclusive clinical data that supports its effects. Consequently, it can be deduced that conventional medicine has done little to slow or stop the disease’s progression. It is, therefore, imperative to find an alternative able to prevent and reverse the aggregation of the Aß protein. Nutraceutical supplements have shown promise at slowing the disease and reversing the biochemical abnormalities that underlie it. The supplements utilized in this study (ginkgo biloba, ginseng coffee, magnesium, grape seed, and green tea) have strong evidence from human, epidemiological, and laboratory studies of demonstrating such qualities and were thus tested for their ability to inhibit amyloid peptide nucleation and growth using a modeled cell membrane. It was hypothesized that aggregation would be hindered when treated with these substances. Results indicated that ginkgo biloba extract was most effective against Aß aggregation.

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