A Randomized Controlled Trial Evaluating the Differential Efficacy of Ginkgo biloba, Ginseng, Curcuma longa Linn. and Vinpocetine on Spatial Learning and Memory in Mice

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There is some evidence indicating that Ginseng, Ginkgo biloba (G.biloba), Curcuma longa linn. (C.longa linn.) and Vinpocetine have a role in ameliorating memory impairment. These findings have been generalized to widespread marketing suggesting they may be used for normal memory enhancement. According to the 2019 Zion Market Research report, the global nootropics market was valued at around USD 1,324 million in 2017 and is expected to reach approximately USD 5,959 million by 2024. To date, there is little evidence to support nootropic effects in the absence of a cognitive deficit or disease process. The aim of this research was to explore the differential efficacy of Ginseng, G.biloba, C.longa linn. and Vinpocetine for enhancing normal memory processes in mice. Fifty male and female mice were randomly allocated into five groups: G.biloba (100mg/kg); Ginseng (200mg/kg); C.longa linn (200 mg/kg); Vinpocetine (10mg/kg) and age-matched adult control. A sixth group of young mice were randomly selected as a juvenile control to establish the level, if any, impairment. Mice were administered the drugs orally for 21 days prior to being assessed on the Morris Water Maze (MWM) for spatial learning and memory. In this study, no benefits were found in spatial learning and memory for mice who ingested G.biloba, Ginseng, Curcuma longa linn. or Vinpocetine compared to a same-age control. These findings are discussed in terms of age-related memory changes and memory impairment processes.

Awards Won:

First Award of $5,000