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Studies on comparative nootropic activity of green tea and a marketed polyherbal formulation

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Green tea (*Camellia sinesis*) has a lot of claims as well as documented evidence of it being used traditionally for a number of health benefits. Free radicals contribute to the aging process as well as to the development of a number of health problems, including cancer, heart disease and cognitive decline as in neurological diseases, (Alzheimer's, Dementia) and in learning disorders such as dyslexia. Green tea is made from unfermented leaves and reportedly contains the highest concentration of powerful antioxidants called polyphenols. Polyphenols in green tea can neutralize free radicals and may prevent some of the damage they cause and may help maintain the parts of the brain that regulate learning and memory. The present study was undertaken to establish the memory boosting potential of green tea by preclinical testing in mice. The aqueous extract (AQGT) 5 mg/ kg body wt and 10 mg / kg body wt of green tea was compared with the marketed formulation (Medharasayana) 10 ml/ kg body wt for its nootropic activity. The exteroceptive models like Elevated plus Maze, Morris Water Maze, Passive Avoidance Step down models and interoceptive model of scopolamine induced memory deficit were used to evaluate nootropic activity; green tea decreased the transfer latencies significantly ($p < 0.001$) when compared with the marketed formulation. It also significantly increased brain acetyl cholinesterase enzyme inhibitiory activity when compared with the marketed formulation. Green tea's anti-oxidant content as well as its ability to increase the brain Ach content may be the neurochemical basis for its improved learning and memory.