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Green leafy vegetables from two *Solanum sp.*, (*Solanum nigrum L* and *Solanum macrocarpon L*) Ameliorate Scopolamine-induced cognitive and neurochemical impairments in rats

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This study examined the modulatory effect Black nightshade (*Solanum. nigrum L*) and African eggplant (*Solanum. macrocarpon L*) leaves via a feeding trail on cognitive function, antioxidant status and activities of critical enzymes of monoaminergic and cholinergic systems of neurotransmission in scopolamine-administered rats. Cognitive impairment was induced in albino rats pretreated with dietary inclusions of Black nightshade (BN) and African eggplant (AE) leaves by single administration (i.p) of scopolamine (2 mg/kg body weight). Prior to termination of the trail, the rats were subjected to spontaneous alternation (Y-maze) test to assess their spatial working memory. Thereafter, activities of acetylcholinesterase (AChE), butyrylcholinesterase (BChE), monoamine oxidase (MAO), arginase and antioxidant enzymes (catalase, SOD and GST) of rat brain homogenate were determined. Also, the malondialdehyde (MDA), nitrite and GSH contents of the homogenate were determined. The results showed that pretreatment with dietary inclusions of AE and BN (5% and 10%) significantly reversed the impairment in the rats' spatial working memory induced by scopolamine. Similarly, elevations in activities of AChE, BChE and MAO induced by scopolamine were significantly reversed in rats pretreated with dietary inclusions of AE and BN. In addition, impaired antioxidant status induced by scopolamine was reversed by pretreatment with dietary inclusions of AE and BN. This study has shown that dietary inclusions of AE and BN could protect against cognitive and neurochemical impairments induced by scopolamine and hence, these vegetables could be used as source of functional foods and nutraceuticals for the prevention and management of cognitive impairments associated with Alzheimer's disease.

Biography

Opeyemi Babatunde Ogunsuyi currently works at the Department of Biomedical Technology, Federal University of Technology, Akure. Opeyemi does research in Biochemistry with special focus on Neurophytotherapy, Functional foods and Nutraceuticals. Their current project is natural therapy for neurodegenerative diseases using *Drosophila melanogaster* as model organism.

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