

4th International Conference on **Translational Medicine**

October 26-28, 2015 Baltimore, USA

Mechanisms involved in memory promoting effect of Jobelyn® in mice exposed to unpredictable chronic mild stress

Solomon Umukoro^{1,2}, Omorogbe O¹, Eduviere A T³, Owoeye O¹, Okeowo K M O¹ and Oluwole O G¹ ¹University of Ibadan, Nigeria ²Osun State University, Nigeria ³Afe Babalola University, Nigeria

This study was designed to evaluate the possible mechanism (s) involved in memory promoting effect of Jobelyn^{*} in mice exposed to unpredictable chronic mild stress (UCMS). Male Swiss mice were given JB (5-25 mg/kg, p.o) 30 min before exposure to UCMS for 14 days before testing for memory function. Serum corticosterone level was estimated using ELISA kits while the levels of malondialdehyde and glutathione as well as acetylcholine esterase activity in the brain homogenate were determined spectrophotometrically. Histology of the brain tissues and estimation of the populations of viable neurons in the hippocampal regions were done after staining with hematoxyline and eosin. JB reversed memory impairment and also decreased serum corticosterone level produced by UCMS (p<0.05). Moreover, JB reduced malondialdehyde levels and elevated the concentrations of glutathione in the brain of mice exposed to UCMS. Also, JB decreased brain acetylcholine esterase activity when compared with chronic stress group (p<0.05). JB offered a significant protection against UCMS-induced degeneration and death of neuronal cells of the Cornu Ammonis (CA3) of the hippocampus region of the brain suggesting neuro-protection. These findings suggest that Jobelyn^{*} attenuated memory deficits induced by UCMS in mice and may be useful therapeutically for the treatment of stress-related cognitive dysfunctions. The antioxidant, anti-cholinesterase and neuroprotective activities demonstrated by Jobelyn^{*} may be playing a significant role in its memory promoting effect in mice exposed to unpredictable chronic mild stress. The reduction in serum corticosterone, a major indicator of stress response further supports its usefulness in stress-related disorders. The adaptogenic-like activity of MJ may be related to the modulation of serum corticosterone levels, inhibition of anti-choline esterasoxidative stress and neuro-protective effect.

Biography

Solomon Umukoro has completed his PhD from University of Lagos, Nigeria. He is the Chairman of Central Animal House, University of Ibadan, Ibadan. He has published more than 35 papers in reputed journals and has been serving as a resource person for both local and international journals.

umusolo@yahoo.com

Notes: