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EVALUATION OF ATTENUATING EFFECT OF *COCOS NUCIFERA* ON COLD RESTRAINT STRESS MODEL IN RATS

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Objective: Traditional practitioners commonly use herbal extracts and polyherbal formulation for the management of stress. Ranahamsa Rasayanaya, a polyherbal formulation which contains *Cocos nucifera* is one of the ingredients used in management of stress disorders. Hence, this research was undertaken to scientifically validate antistress effect of *Cocos nucifera* L. endocarp.

Material and Methods: The test extract was subjected for preliminary phytochemical investigation to detect the presence of type of phytoconstituents. The anti-stress effect of graded doses (125, 250 and 500 mg/kg, b/w) of ethanolic extract of *Cocos nucifera* endocarp was evaluated using cold restraint stress model in rats. Its antistress potential was investigated by estimating various parameters such as hematology, serum biochemical markers such as glucose, cholesterol, triglycerides and blood urea nitrogen (BUN). The weight of organs (Liver, spleen and adrenal glands) of experimental animals and nor-adrenaline and serotonin contents of brain tissue of stressed rats also recorded. *Withania somnifera* (100 mg/kg) used as reference standard.

Results and Discussion: Screening doses of test extract chosen based on the LD50 cut-off value. The results of preliminary phytochemical investigation of test extract reveal the presence of flavonoids and tannins. Ethanolic extract of *Cocos nucifera* endocarp at 250 mg and 500 mg/kg exhibited significant anti-stress property against cold restraint stress model, which was evident by significant attenuation of altered haematological, serum biochemical markers, organs weight and neurotransmitter levels of brain tissue. The result of 125 mg/kg of the test extract was found to statistically not-significant. *Withania somnifera*, reference standard drug demonstrated significant anti-stress effect. The observed significant antistress effect of plant extract could be attributed to the presence of flavonoids and tannins.

Conclusion: The findings of the present study justify the incorporation of *Cocos nucifera* in Ranahamsa Rasayanaya, a well known classical Sri Lankan Rasayana drug used in the management of stress disorders.

BIOGRAPHY

Shivakumar Hugar working as Professor and Head, Post Graduate Dept. of Pharmacology, BLDEA's SSM College of Pharmacy & Research Centre, Vijayapur - 586103, Karnataka, India. He obtained PhD degree from Kuvempu University, Shankaragatta, Shivamogga in the year 2007. He is having 21 years of experience in teaching and research. He guided 45 M Pharm and 3 PhD students and 01 student of Pharmacology specialization is pursuing PhD under his supervision. Published 56 research papers in national and international journals. Presented 09 oral and 55 posters in national and international conferences and got best research paper award for 3 oral presentations. Attended International conference organized by Master Skill University, Malaysia in the year 2011. Shivakumar Hugar was Board of Studies (BOS) member in Pharmacy (UG) 2009 - 2011, Rajiv Gandhi University of Health Sciences (RGUHS), Bangalore. Currently he is member of BOS in Pharmacy (PG) and also faculty member of Pharmacy, RGUHS, Bangalore. He has received research grant from RGUHS, Bangalore. He is also an editorial board member and reviewer for the few reputed journals. Shivakumar Hugar has been received Shikshak Shri Award from chief justice & first vice president of Nepal. This event was organized by Indo-Nepal Antarrashtriya Samrasta Manch on account of teacher's day on 5th September at Krishna Menon Bhavan, New Delhi. He was member of International Organizing Committee of 12th International congress of Ethnopharmacology, Jadavpur University, Kolkata, India, held on February 17-19, 2012. He was the poster evaluator for P4 conference jointly organized by KLE University & Manipal, held at Belagavi, Karnataka, India. He is life member of APTI, KSPC, American Botanical Council and ACP. He is an examiner for various universities and evaluated PhD thesis of different universities.

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