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EVALUATION OF ADAPTOGENIC ACTIVITY OF *LUFFA CYLINDRICA* LEAVES EXTRACT

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Objective: To investigate adaptogenic activity of ethanolic extract of *Luffa cylindrica* leaves (EELCL).

Methods: In the present study adaptogenic activity was screened against anoxia tolerance, swimming endurance and cold restraint stress models. In anoxia tolerance test, the mean time of appearing first convulsion in mice was taken as end point to determine the time of anoxia. In swimming endurance test, the mean time of swimming performance was recorded. The end point taken was when the animals started drowning and remain at the bottom of swimming tank for 10 sec. Estimation of biochemical parameters such as serum glucose, cholesterol, triglycerides and BUN and also weight of organs (Liver, adrenal glands, spleen and testes) were measured in cold restraint stress model.

Results:

Effect of EELCL on anoxia stress tolerance time in mice:

In the anoxic stress tolerance test, the time taken for the mice to exhibit clonic convulsions was considered as the end point. The graded doses (50, 100, 200 mg/kg) of the test extract demonstrated dose and duration dependent significant delay in clonic convulsions on 7th, 14th and 21st day compared to control group received vehicle only. The lower dose of the test extract (50 mg/kg) did prolong the clonic convulsions at the end of 1st and 2nd week, but the results found statistically not significant. Antistress effect of the higher dose (200 mg/kg) of the test extract was found closer to that of the standard drug, Withania somnifera.

Effect of EELCL on swimming endurance test in mice:

There was dose dependent significant increase in swimming performance time monitored in mice pretreated with EELCL at graded doses (50, 100 and 200 mg/kg) for seven days. The percentage increase in swimming performance time was found to be 55 to 89. However, the effect of test extract on swimming performance time was found to be less potent than the reference standard drug, Withania somnifera.

Effect of EELCL on biochemical parameters in cold restraint stress:

Cold restraint stress adversely affected the serum concentration of various biochemical parameters. The induction of cold restraint stress significantly elevated the serum cholesterol, triglycerides, BUN and glucose levels in stress control rats compared to normal control group. Animals pretreated for ten days with test extract at different dose levels (50, 100, 200 mg/kg) showed significant and dose dependent fall in all the biochemical parameters, as compared to the stress control animals.

Effect of EELCL on organs weight in cold restraint stress:

Cold stress significantly increased the weight of liver, adrenal glands and decreased the testes and spleen weight. Ten days pretreatment with graded doses of EELCL significantly and dose dependently ameliorated the cold stress induced altered organs weight.

Conclusion: In conclusion, the findings from the present study suggest that 70% hydro alcoholic leaf extract of Luffa cylindrica demonstrated increased resistance against different aversive stimuli in a nonspecific manner thus the test extract could possesses adaptogenic – anti-stress property.

BIOGRAPHY

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