

Antidepressant-like effect of lipid extract of *Channa striatus* in chronic unpredictable mild stress model of depression in rats

ABSTRACT

This study evaluated the antidepressant-like effect of lipid extract of *C. striatus* in chronic unpredictable mild stress (CUMS) model of depression in male rats and its mechanism of action. The animals were subjected to CUMS for six weeks by using variety of stressors. At the end of CUMS protocol, animals were subjected to forced swimming test (FST) and open field test followed by biochemical assay. The CUMS protocol produced depressive-like behavior in rats by decreasing the body weight, decreasing the sucrose preference, and increasing the duration of immobility in FST. The CUMS protocol increased plasma corticosterone and decreased hippocampal and prefrontal cortex levels of monoamines (serotonin, noradrenaline, and dopamine) and brain-derived neurotrophic factor. Further, the CUMS protocol increased interleukin-6 (in hippocampus and prefrontal cortex) and nuclear factor-kappa B (in prefrontal cortex but not in hippocampus). The lipid extract of *C. striatus* (125, 250, and 500mg/kg) significantly ($p < 0.05$) reversed all the above parameters in rats subjected to CUMS, thus exhibiting antidepressant-like effect. The mechanism was found to be mediated through decrease in plasma corticosterone, increase in serotonin levels in prefrontal cortex, increase in dopamine and noradrenaline levels in hippocampus and prefrontal cortex, increase in BDNF in hippocampus and prefrontal cortex, and decrease in IL-6 and NF- κ B in prefrontal cortex.