ABSTRACT

Effect of resveratrol on depressive-like behavior in animal induced with physical and psychological Stress

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Stress is a body's reaction that occurs due to pressure or environmental demands that cause psychological and biological changes. Prolonged stress cause several disorders such as anxiety and depression. Resveratrol is a compound from red wine that is known to have an ability to regulate the Hypothalamic Pituitary Adrenal (HPA) axis function. This study aims to determine the effect of resveratrol on depressive-like behavior and corticotrophin releasing factor (CRF) mRNA expression in the amygdala on mice using 10 days induction of physical and psychological stress. Mice were divided into eleven groups: control, physical stress, psychological stress and stress with treatment 20 mg/KgBB of fluvoxamine, 20, 40, 80 mg/KgBB of resveratrol. Resveratrol and fluvoxamine were administered intraperitoneally once daily for 7 days. Depressive-like state was evaluated using an open field test, tail suspension test and forced swim test one day after the last induction. Whereas CRF mRNA expression was measured using a reverse transcription-polymerase chain reaction after the behavior test. The results showed that stress induction increased depression-like behavior and CRF mRNA expression in the amygdala. Compared with the stress group, administration of resveratrol and fluvoxamine reduced depression-like behavior, but did not affect CRF mRNA expression in the amygdala. This result suggests that resveratrol has the ability as a protective agent against depressive-like behavior due to induced physical stress and psychological stress.

Keywords: resveratrol, depressive-like behavior