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Oxidative Stress Does Not Predispose Neuronal Cells to Changes in G Protein Coupled (Opioid) Receptor Gene Expression in Cortical B50 Neurons in Culture

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ABSTRACT Oxidative stress adversely affects neuronal cells in which they may die when oxygen supply is reduced or eliminated and opioid receptor agonists elicit several central nervous system effects. The aim of this study was to evaluate the effect of oxidative stress on opioid receptor gene expression in cortical B50 cells. The cells were cultured in normoxia, hypoxia and treated with opioid agonists; DAMGO (μ), DSLET (δ) and ICI—199,441 (κ) for 48 hours after 48 hours of initial culture at dose of 10 μ M, 50 μ M and 100 μ M. The level of mu opioid receptor mRNA was assessed using RT-PCR. The results show that oxidative stress induced changes in B50 cells in hypoxia while mu opioid mRNA levels showed no change. The results show that B50 cells are susceptible to damage by oxidative stress and opioid agonist treatments showed no change in the level of mu opioid receptor gene expression in B50 cells.