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A preliminary study on behavioral effects of laboratory rats (AlbinoWistar) after the sub-chronic noise stress

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Humans and animals can hear a wide range of sound frequencies. If the sense of hearing is impaired, both man and animal cannot fare well in their respective environments. Present study is aimed to investigate the behavioral effects following the sub-chronic noise stress of a rat species, Albino Wistar. The sound source consists of a set of speakers, GWINSTEK AFG-2000 series function generator and an amplifier. Sound levels and frequencies were monitored by B&K type 2250 sound level meter. Six adult Albino Wistars were exposed to sound frequencies of 1- 20 kHz, at intervals of 1 kHz at L_{Aeq} of 70-80 dB for 5 minute periods and their behavior was recorded. A different behavior in rats was observed in frequency range of 7 – 10 kHz. In the second test four adult rats were randomly divided into control and test groups. The test animals were exposed to noise of 7, 8, 9 & 10 kHz for 4 hours daily while keeping the control group in same room for same period of time without exposing to the sound. Locomotive activity, increase of defection and decrease of social activities, of rats was assessed by open field test (OFT). Anxiety and depressive behavior were monitored by elevated plus maze test (EPM) and tail suspension test (TST). At the beginning of exposure, all rats were huddled in a group and then some were frozen into motionless stance. A less time spent and less number of entries in open arm was noticed in test sample compared to the controls in the EPM test. A tendency to move to open field compared to controls was identified in OFT. The TST revealed that a significant increase in immobility time, which indicates a depression like behavior of noise stressed rats compared to controls. According to the study the most effective noise frequency range for rats is 7 - 10 kHz and which is agreed with the findings of Fizza, N. et al.

Keywords: *Albino Wistar, Noise Stress, Behavioral Effects*

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