

Figure S1: The SD-OCT images provide detailed cross-sectional views of the retina, allowing visualization of retinal layers and structural changes from untreated and treated mice (4 different mice) from both eyes.

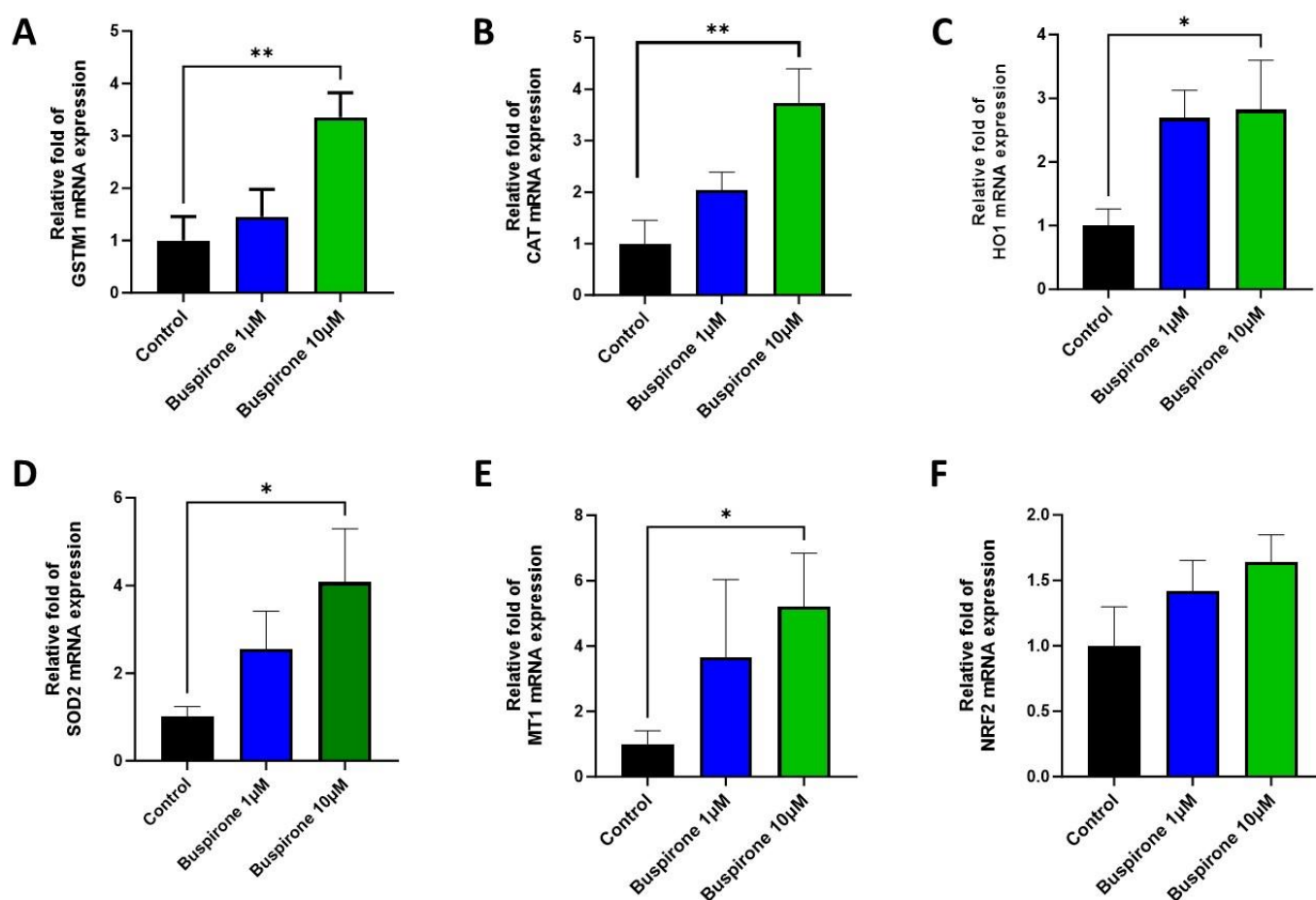


Figure S2: Effect of Buspirone on Antioxidant mRNA Expression in normal ARPE-19 Cells without and oxidative damage. The figure depicts the relative fold change in mRNA expression levels of antioxidant genes in ARPE-19 cells

following 24 hours of treatment with Buspirone. Cells were treated with three different concentrations: Control (untreated), 1  $\mu$ M (micromolar), and 10  $\mu$ M (micromolar). Quantitative real-time polymerase chain reaction (qPCR) was employed to assess the mRNA expression of key antioxidant genes in each treatment group. This result highlighted the dose-dependent effects and observed elevated trends in the mRNA expression levels. Notable antioxidants gene examined include; (A) GSTM1: Glutathione S-Transferase Mu 1, (B) CAT: Catalase, (C) HO1: Heme Oxygenase 1, (D) SOD2: Superoxide Dismutase 2, (E) MT1: Metallothionein 1, (F) NRF2: Nuclear Factor (Erythroid-Derived 2)-Like 2. The expression levels were normalized to Glyceraldehyde 3-Phosphate Dehydrogenase (GAPDH) for internal control. Statistical significance was determined using unpaired student t-test (n=4-6), with  $p < 0.05$  considered as statistically significant. Significant differences indicated by asterisks.