**Evaluation of the blue LED on the L929 fibroblast cell viability**

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Fibroblasts are stromal cells responsible for the production and remodeling of the extracellular matrix and play a central role in the wound healing process. Compound diverse tissues, these cells are responsible for contractions that contribute to wound closure, with such function occurring depending on their phenotypic differentiation. Recently published studies using photobiomodulation (PBM) with low-level laser or LED showed an improvement in proliferation, differentiation and an influence at mitochondrial and reticular activity. However, a comprehensive understanding of the ideal dosimetric parameters of PBM to stimulate wound regeneration has not yet been achieved. Therefore, this study aims to assess different dosimetric parameters of blue LED light on the L929 fibroblast cell viability. The fibroblast L929 cells line (mouse cells) was cultured in a proliferation medium composed of Dulbecco’s modified Eagle medium (DMEM, Vitrocell, Campinas, SP, Brazil) supplemented with 10% fetal bovine serum (FBS, Vitrocell, Campinas, SP, Brazil) and 1% antibiotic–antimycotic solution incubated (HEPA class 3110, Thermo Electron Corporation, OH, USA) at 37 °C in a humidified atmosphere with 5% CO2. The cells were removed from the culture flask and centrifugated. The L929 cells were divided into the following experimental groups: (1) Control, (2) PBM 4 J, (3) PBM 6 J and (4) PBM 8J. The PBM treatment was performed using blue LED (Quantum, Ecco ®, 470 nm, 400 mW, 10 s, 15 s and 20 s and total energy of 4, 6 and 8 J, respectively) at the bottom of conic (Falcon) tubes. The cells were plated (2 x 104) in 96-well culture plates and submitted to MTT (3-[4,5-dimethylthiazol-2-yl]-2,5 diphenyl tetrazolium bromide) assay for evaluation of cell viability after 24 and 48h of incubation. The results showed that after 48 h there was an increase in cell viability in the 8 J group in comparison to the 6 J group. However, after 24 hours, there was no statistically significant difference observed among the experimental groups. In conclusion, the application of blue LED light with a total energy of 8J demonstrated the capability to stimulate time-dependent L929 cell viability.

**Mulher com cabelos longos

Descrição gerada automaticamente**

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