

## **PO126-Led-Based Irradiator to Treatment of Severe Burns**

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Low Level Light Therapy (LLLT) has been used for treatment of different conditions, such as modulation of the inflammatory process, nervous regeneration, accelerating the repair process of tissues [1]. Burns represent severe tissue damage conditions and are mainly caused by electricity, chemicals and scalding or freezing materials. Burns can be life-threatening emergencies, and need special management due to serious physical, psychological and immunologic impairments. LLLT is an effective alternative of treatment since photons between 630-800 nm can stimulate the regeneration of muscle, skin, bones and subcutaneous tissue [2]. The objective of the present study is to develop a total body irradiator to treat cutaneous burn injuries with LLLT. Adult male Swiss mice were submitted to a frostbite protocol using a solid metal object cooled in liquid Nitrogen (-196 °C). Under anesthesia, burns were made on each animal's epilated dorsal area. The animals were subjected to two sessions of 10 s, interval of 5 min between sessions during three consecutive days to standardize a third degree burn. Twenty-four h later, animals were placed inside a homemade LEDBOX (dimensions: 9.95x10.0x10.0 cm) with five red diodes, during 12 min (box irradiance: 1.2 mW/cm<sup>2</sup>). Wound closure was monitored daily by a caliper rule. Our results suggest that LLLT group decreased the inflammatory process, but it was similar to control at the end of treatment. We conclude that it is possible to develop a LED-based total body irradiator to promote benefits on burned.

[1] H. Chung, *et.al*, The Nuts and Bolts of Low- Level Laser (Light) Therapy, *Ann Biomed Eng.* 2012, vol. **40**, 516-533.

[2] da Silva. J.P, *et.al*, Laser Therapy in the Tissue Repair Process: A Literature Review, *Photomed. Laser Surg.* 2010, vol. **28**, 17-21.