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Autores	Akamatsu FE, Teodoro WR, Itezerote AM, da Silveira LKR, Saleh S, Martinez CAR, Ribeiro ML, Pereira JA, Hojaij F, Andrade M, Jacomo AL
Autor (es) USF	José Aires Pereira, Carlos Augusto Real Martinez, Ribeiro, Marcelo Lima
Autores Internacionais	
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Resumo	A tendon is a mechanosensitive tissue that transmits muscle-derived forces to bones. Photobiomodulation (PBM), also known as low-level laser therapy (LLLT), has been used in therapeutic approaches in tendon lesions, but uncertainties regarding its mechanisms of action have prevented its widespread use. We investigated the response of PBM therapy in experimental lesions of the Achilles tendon in rats. Thirty adult male *Wistar* rats weighing 250 to 300 g were surgically submitted to bilateral partial transverse section of the Achilles tendon. The right tendon was treated with PBM, whereas the left tendon served as a control. On the third postoperative day, the rats were divided into three experimental groups consisting of ten rats each, which were treated with PBM (Konf, Aculas - HB 750), 780 nm and 80 mW for 20 seconds, three times/week for 7, 14 and 28 days. The rats were sacrificed at the end of the therapeutic time period. The Sca-1 was examined by immunohistochemistry and histomorphometry, and COLA1, COLA2 and COLA3 gene expression was examined by qRT-PCR. COLA2 gene expression was higher in PBM treated tendons than in the control group. The histomorphometric analysis coincided with increased number of mesenchymal cells, characterized by Sca-1 expression in the lesion region ($p<0.001$). PBM effectively interferes in tendon tissue repair after injury by stimulating mesenchymal cell proliferation and the synthesis of collagen type II, which is suggested to provide structural support to the interstitial tissues during the healing process of the Achilles tendon. Further studies are needed to confirm the role of PBM in tendon healing
Fomento	