

LASER PHYSICS LETTERS

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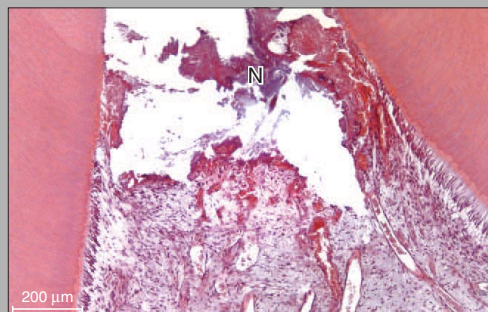
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Abstract: The aim of this study was to evaluate the hypothesis that low-level laser therapy (LLLT) 688 nm and 785 nm accelerate dentin barrier formation and repair process after traumatic pulp exposure. The sample consisted of 45 premolars of capuchin monkeys (*Cebus apella*) with pulp exposure Class V cavities. All premolars were treated with calcium hydroxide (Ca(OH)_2), divided in groups of 15 teeth each, and analyzed on 7th, 25th, and 60th day. Group GI – only Ca(OH)_2 , GII – laser 688 nm, and GIII – laser 785 nm. Laser beam was used in single and punctual dose with the parameters: continuous, 688 nm and 785 nm wavelength, tip's area of 0.00785 cm², power 50 mW, application time 20 s, dose 255 J/cm², energy 2 J. Teeth were capped with Ca(OH)_2 , Ca(OH)_2 cement and restored with amalgam. All groups presented pulp repair. On 25th day the thickness of the formed dentin barrier was different between the groups GI and GII ($p < 0.05$) and between groups GI and GIII ($p < 0.01$). On 60th day there was difference between GI and GIII ($p < 0.01$). It may be concluded that, LLLT 688 nm and 785 nm accelerated dentin barrier formation and consequently pulp repair process, with best results using infrared laser 785 nm.



7 days – Ca(OH)_2 – Irregular layer of superficial coagulation necrosis in the pulp exposure region (N) – H&E – 100×