Abstract
Several methods, ultrasound and laser, are used to tissue repair and healing processes. The objective was to compare the effect of laser (LLLT) and ultrasound (LIPUS) on fibroblast cell culture. Cultures irradiated with laser energy were divided into three groups: I- control; II- 6 J/cm²; and group III: 50 mJ/cm². Cultures irradiated with ultrasound were divided into five groups: 1- control; 2- 0.2 W/cm² in pulsed mode at 10% (1:9 duty cycle); 3- 0.6 W/cm² in pulsed mode at 10% (1:9 duty cycle); 4- 0.2 W/cm² in pulsed mode at 20% (2:8 duty cycle); and 5- 0.6 W/ cm² in pulsed mode at 20% (2:8 duty cycle). Each group was irradiated at 24 h intervals, with the following post-irradiation incubation periods: 24, 48, and 72 h; after each irradiation cycle the cultures were analyzed using MTT cytotoxicity test. Analysis of results demonstrated that the effect of laser therapy on fibroblast cell culture was greater than that of LIPUS (p < 0.05). Results showed that LLLT significantly increased fibroblastic activity more than LIPUS. Therefore, in the first and second phases of tissue repair, laser treatment may be more effective than ultrasound.

Keywords
Cell culture, Fibroblast, Low-level laser therapy, Repair, Ultrasound.