

# **In Vitro Effect of Phototherapy with Low Intensity Laser (660 and 780 nm) on Monkey Epithelial Cells (Vero) and HSV-1 in Culture**

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**Purpose:** The effects of phototherapy on herpes lesions have been clinically demonstrated by either preventing the lesion formation or speeding their repair or increasing the timing between lesions manifestations. The mechanisms underlying these findings have not been established yet. The aim of this in vitro study was analyze the effect of phototherapy on epithelial cells and HSV in culture. **Material and Methods:** Cultures of HSV and epithelial cells (Vero cell line) were used. The irradiations were done using a GaAlAs laser (660 and 780 nm, focal spot of 4.0 mm<sup>2</sup>). One, two and three irradiations with 6 h-intervals were done. The experimental groups were: Control: non-irradiated; L1: 660 nm and 3 J/cm<sup>2</sup> (28.84 sec); L2: 660 nm and 5 J/cm<sup>2</sup> (38.46 sec); L3: 780 nm and 3 J/cm<sup>2</sup> (19.23 sec), and L4: 780 nm and 5 J/cm<sup>2</sup> (25.64 sec). The HSV cytopatic effect and the cell viability of irradiated cultures and controls were analyzed in four different conditions: irradiation of non-infected epithelial cells; epithelial cells irradiated prior infection; virus irradiated prior infection; irradiation of HSV infected cells. The cell viability was assessed by the MTT test and the cytopatic effect by the light microscopy. **Results:** Any changes in cytopatic effect or cell viability were observed amongst the experimental groups, independently of the irradiations number. **Conclusion:** The laser radiation does not change either the susceptibility of the Vero cell to the HSV infection or the HSV virulence; however, prolongs the cell viability of HSV infected cells.