# BIOMODULATION EFFECTS ON CELL MITOSIS AFTER LASER IRRADIATION USING DIFFERENT WAVELENGTHS.

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The biostimulative effects on cell mitosis induced by laser light at different wavelengths in cell cultures had been investigated, Murine skeletal fibroblasts (C2), normal urothelial cells (HCV29), human squamous carcinoma cell line of the mouth (ZMK) and urothelial carcinoma cells (J82) were irradiated with laser light at ^=488, 630, 640 and 805+25pm using a computer controlled irradiation chamber. The irradiance was set to 10mW/cm(2) and 100mW/cm(2), while the irradiation varied between 2 and 201/cm(2). The mitotic was determined by single cell counting after Orecein staining 24h post irradiation.

The mitotic rate showed a wavelength dependency with maxima at ^=635 and 805+nm for HCV29 and J82 cells. While the mitotic rate of C2 and J82 cells has the maximum value at about 41/cm(2), the maximum was at about 81/cm(2). ZMK cells showed no increase. At ^=805+25pm C2 and ZMK cells showed slight decrease in the mitotic rate after irradiation with 201/cm(2). An irradiation of 10mW/cm(2) was more effective than with 100m/Wcm(2). The biostimulation of the mitotic rate of both normal and tumor cells depends on the wavelength, irradiation and irradiance and on the cell line. The wave length dependency in the ^=630 to 640nm range could indicate a participation of endogenous porphyrins. Because the results show stimulative as well as inhibiting effects it should be considered to change the term biostimulation "into biomodulation".