

THE EFFECT OF MELATONIN ON PC3 PROSTATE CANCER CELLS IN VITRO

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OBJECTIVES

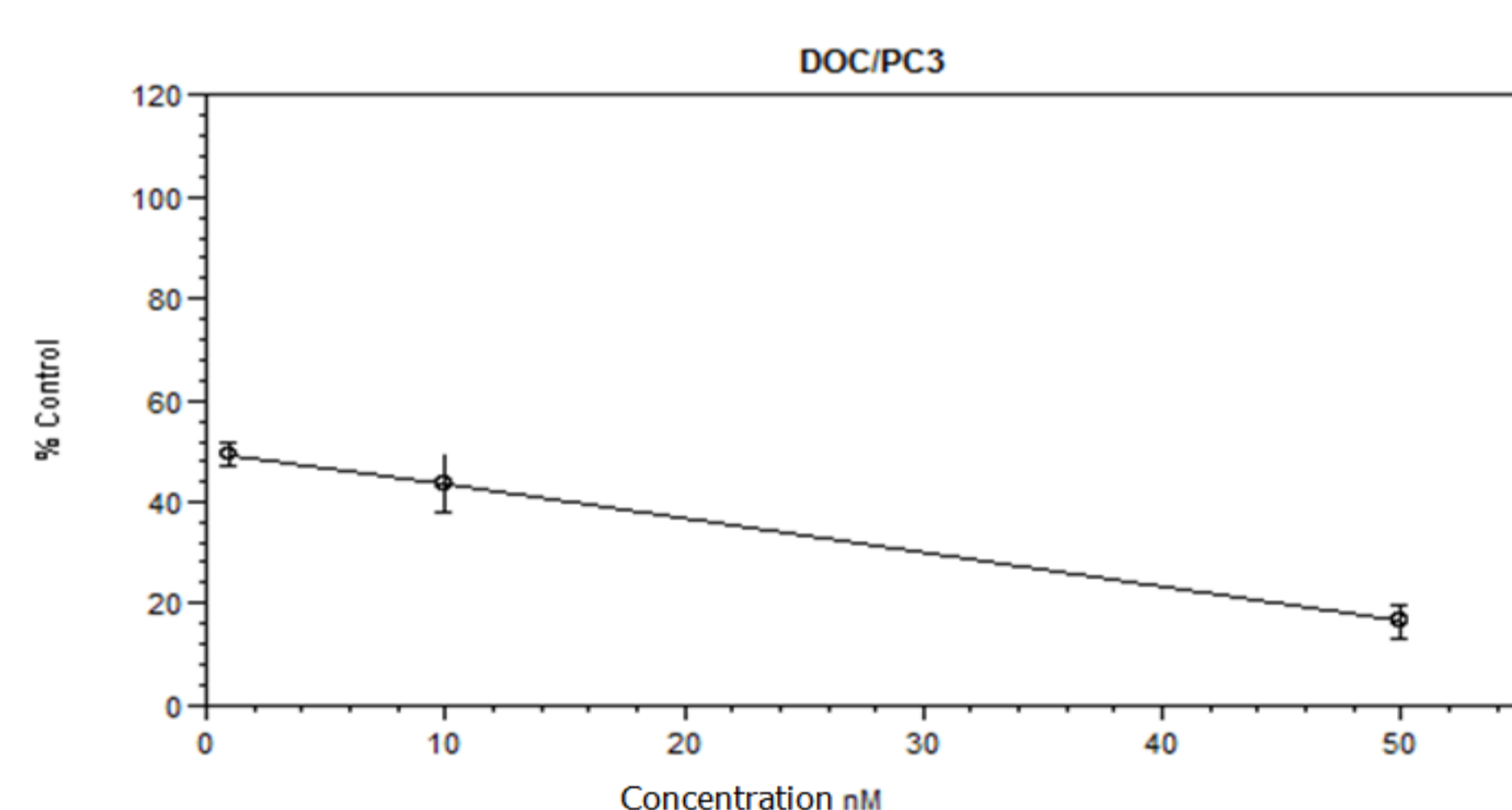
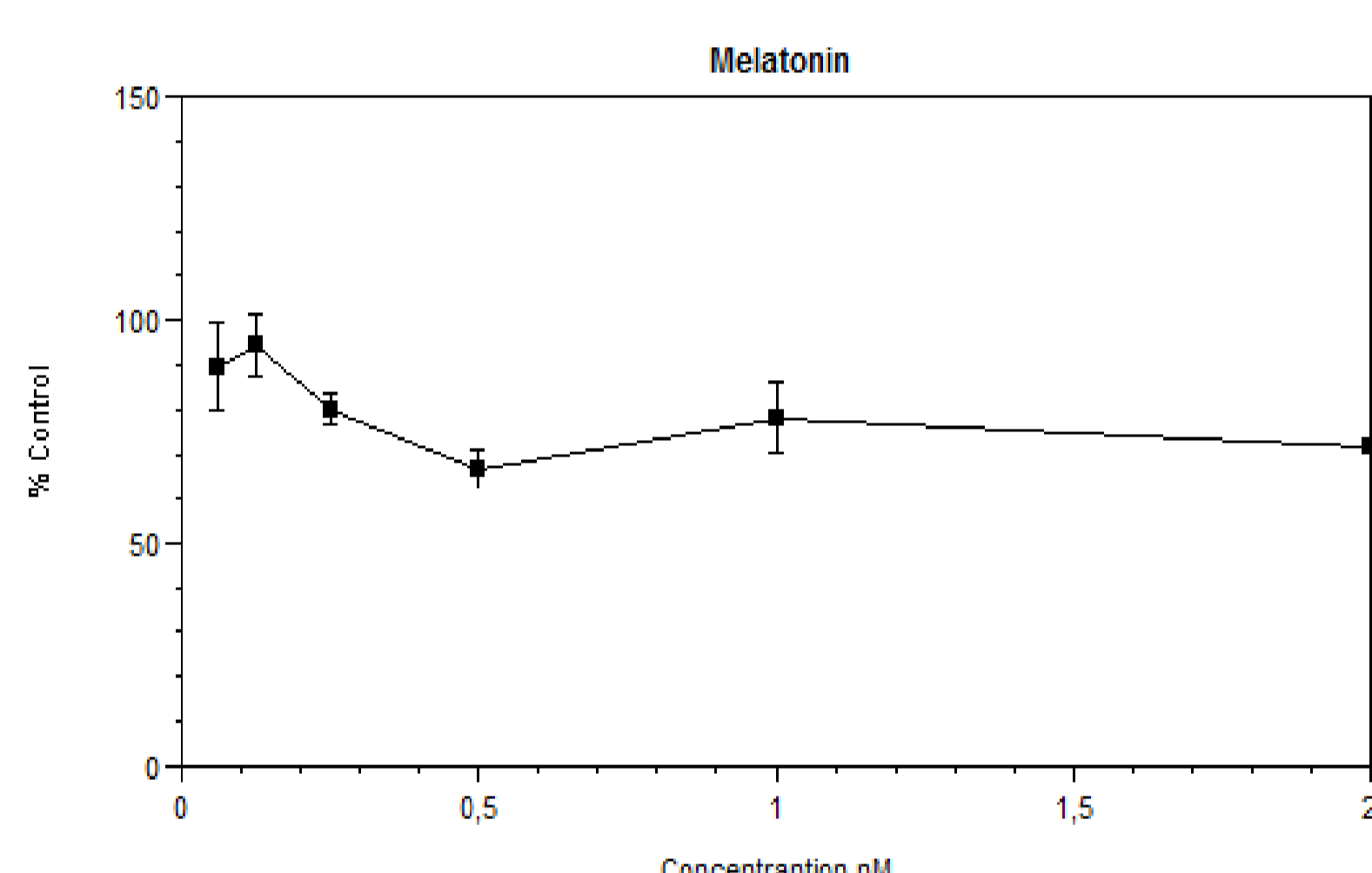
Melatonin is an indole being produced by the pineal gland and secreted mainly during the night. Melatonin is involved in the regulation of biological rhythms. The hormone possesses antioxidant action and is thought to be involved in the protection of the organism from the development of malignant tumors. Melatonin has been found to have anticancer action *in vitro* as is has been observed to inhibit the proliferation of cancer cells *in vitro*. The aim was to study the effect of melatonin on PC3 prostate cancer cells in vitro.

METHODS

The effect of melatonin (Sigma-Aldrich) at an initial concentration of 1nM on PC3 prostate cancer cells *in vitro* was studied. PC3 cells were incubated *in vitro* for 48h at a temperature of 37°C with progressively decreasing melatonin concentrations. PC3 cells were also incubated for 48h with progressively decreasing melatonin concentrations in the presence of the antimetabolic agent docetaxel 50 nM.

RESULTS

The proliferation of PC3 prostate cancer cells was significantly inhibited by melatonin. In the simultaneous presence of melatonin and docetaxel the inhibitory effect on the proliferation of PC3 cells was very significant.



CONCLUSIONS

In conclusion, it appears that melatonin has an inhibitory effect on the proliferation of prostate cancer cells *in vitro*. These findings need to be confirmed in various other cancer cell lines and are in agreement with other research findings having shown the anticancer effect of melatonin. It appears that the modern way of life which disturbs the biological rhythms controlled by the cycle of light and inadvertently exposes the human organism to light during the night may contribute to carcinogenesis.

