

## VITAMIN D AND PROSTATE CANCER

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## OBJECTIVES

The anticancer action of vitamin D is currently considered one of its main properties. The main actions of vitamin D are related to the regulation of calcium levels and the normal function of the musculoskeletal system. However, its anticancer action is currently in the focus of research interests.

The aim was to study the effect of vitamin D on PC3 human prostate cancer cells *in vitro*.

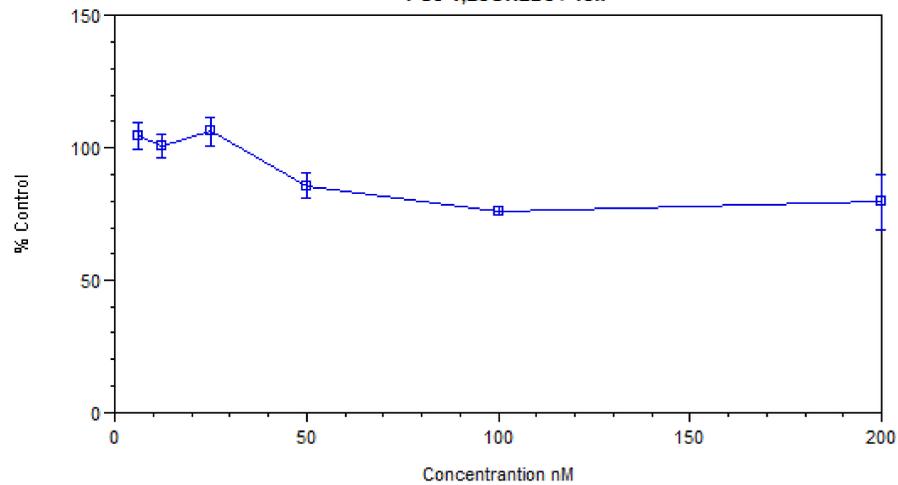
## METHODS

The effect of  $1,25(\text{OH})_2\text{D}_3$  (Sigma-Aldrich) at concentrations of 1  $\mu\text{M}$  and 200 nM on PC3 human breast cancer cells was studied *in vitro*. PC3 human prostate cancer cells were incubated for 48h at a temperature of 37°C with progressively decreasing concentrations of  $1,25(\text{OH})_2\text{D}_3$ . PC3 cells were also incubated with progressively decreasing concentrations of  $1,25(\text{OH})_2\text{D}_3$  (the initial concentration of  $1,25(\text{OH})_2\text{D}_3$  being 200 nM) in the presence of the antimetabolic agent docetaxel 50 nM.

## RESULTS

A mild inhibition of the proliferation of human prostate cancer cells was observed after 48h incubation with  $1,25(\text{OH})_2\text{D}_3$  only at high concentrations. After simultaneous incubation with  $1,25(\text{OH})_2\text{D}_3$  and docetaxel intense inhibition of the proliferation of PC3 prostate cancer cells was observed.

PC3 1,25OH2D3 / 48h



## CONCLUSIONS

In conclusion, a mild inhibitory effect of  $1,25(\text{OH})_2\text{D}_3$  on the proliferation of PC3 human prostate cancer cells was observed, while the antimetabolic agent docetaxel had intense inhibitory effect on their proliferation.

