VITAMIN D AND BREAST CANCER
I. Kostoglou-Athanassiou, E. Papageorgiou, A. Armakolas, M. Koutsilieris
Department of Endocrinology, Red Cross Hospital, Athens, Greece
Department of Experimental Physiology, Medical School, University of Athens, Greece

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 MCF-7 human breast cancer cells in vitro.

METHODS
The effect of 1,25(OH)2D3 (Sigma-Aldrich) at an initial concentration of 200 nM on MCF-7 human breast cancer cells was studied in vitro. MCF-7 human breast cancer cells were incubated for 48h at a temperature of 37°C with progressively decreasing concentrations of 1,25(OH)2D3. MCF-7 cells were also incubated with progressively decreasing concentrations of 1,25(OH)2D3 (the initial concentration of 1,25(OH)2D3 being 200 nM) in the presence of the antimitotic agent docetaxel 50 nM.

RESULTS
A mild inhibition of the proliferation of human breast cancer cells MCF-7 was observed after 48h incubation with 1,25(OH)2D3. After simultaneous incubation with 1,25(OH)2D3 and docetaxel intense inhibition of the proliferation of MCF-7 breast cancer cells was observed.

CONCLUSIONS
In conclusion, a mild inhibitory effect of 1,25(OH)2D3 on the proliferation of MCF-7 human breast cancer cells was observed, while the antimitotic agent docetaxel had intense inhibitory effect on their proliferation. These findings are in agreement with the expression of VDR (Alimirah et al, Mol Cell Biochem 2010), the vitamin D receptor, in breast cancer cells.

References