Antiproliferative Effects of Red and White Wine Extracts in PC-3 Prostate Cancer Cells.

Tenta R¹, Fragopoulou E¹, Tsoukala M¹, Xanthopoulou M¹, Skyrianou M¹, Pratsinis H², Kletsas D².

Abstract

Experimental and epidemiological studies have shown that antioxidant polyphenols can act as chemopreventive agents against prostate cancer. Cabernet Sauvignon and Rombola wine were extracted in order to obtain fractions containing different classes of compounds. All extracts inhibited the androgen-insensitive human prostate cancer cells (PC-3) proliferation in a dose-dependent manner. The most potent compounds were selected to be further tested. Treatment of PC-3 cells with the selected wine extracts marginally increased the cell distribution in S phase, while producing a remarkable induction of autophagy. Finally, the levels of glutathione along with the concentration of hydrogen peroxide and nitrogen oxide were modulated in the treated cells. Herein, we show that red and wine extracts have direct effects on the proliferation, survival, oxidative status, and the induction of autophagy of PC-3 cells. Our data may have important implications for the design of a more effective adjuvant treatment for prostate cancer patients.

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