P28. Effects of phenethyl isothiocyanate on prostate cancer in vitro

Silvia Novio\textsuperscript{1}, María Jesús Núñez\textsuperscript{1}, Elena Cartea\textsuperscript{2}, Pablo Velasco\textsuperscript{2}, Manuel Freire-Garabal\textsuperscript{1}

\textsuperscript{1} Lennart Levi Stress and Neuroimmunology Lab, School of Medicine and Dentistry, University of Santiago de Compostela, A Coruña, Spain
\textsuperscript{2} Misión Biológica de Galicia CSIC, PO Box 28, 36080 Pontevedra, Spain

E-mail: silvianovio@hotmail.com

Keywords: prostate cancer cells, isothiocyanates, docetaxel, growth, apoptosis, migration

Isothiocyanates (ITCs) have gained growing attention since they have been attributed the merits for the beneficial potential of cruciferous vegetable dietary consumption on cancer. The aim of the present study is to determine the cytotoxic effects of phenethyl isothiocyanate (PEITC) on prostate cancer cells under in vitro conditions. Two human prostate cancer cell lines, PC3 and DU-145 were assayed. Cells were cultured under the presence of growing concentrations of PEITC (1, 2 y 4 \textmu M) in absence or presence of the chemotherapeutic drug docetaxel (1, 2 nM). The cytotoxic effects of this compound were analyzed using the MTT (reduction of 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide) colorimetric method at times 24, 48 and 72 h. Apoptosis and migration assays were also performed. Our results show that PEITC induced a dose-dependent cytotoxic effec. on both PC3 and DU-145 cells at 24, 48 and 72 h. These effects were significantly higher than those found with docetaxel at the same time periods. Moreover, PEITC also potentiated the effects of docetaxel in a dose-dependent manner. Apoptosis were significantly higher in PEITC-docetaxel treated cells in comparison to docetaxel, PEITC or control groups at 72 h. Additionally, PEITC showed inhibition of migration of PC3 and D145 cells. Although the results of further studies (some of them are already being performed by our group) should be added, our results at present show a promising role of this compound as prostate cancer chemotherapeutic drug and/or co-adjuvant agent in docetaxel-based therapy.