Can plant estrogens prevent prostate cancer?

Prostate cancer is an excellent candidate disease for chemoprevention. It is typically diagnosed in elderly males therefore even a delay of a few years in the development of cancer cells could result in a substantial increase in the quality of life and decrease in the number of deaths. Using pharmacological or nutritional supplements could be a very easy and cost effective method of delaying prostate cancer cell development. Phytoestrogens found in many plants may be both agonists and antagonists of estrogen receptors in humans that play an important role in cancer cell growth. Environmental stress on cells can greatly impact the development of many diseases including cancer, thus it is important to understand enzymes that protect against cellular stress. Phase II detoxification enzymes are know to protect cells from cellular stress. Our hypothesis is phytoestrogens like baicalein may increase Phase II enzymes, which are responsible for combating the cellular stress. To study the effect of the phytoestrogens baicalein, we used human prostate cancer cells grown in a controlled laboratory environment. PC-3 cells were treated with six concentrations of baicalein (0, 5, 10, 15, 25, and 50 µM) over three days. Enzyme levels were measured in the treated cells and compared to the control (untreated) cells. This study will provide evidence to test if phytoestrogens may be a usable compound to prevent prostate cancer.