

Pomegranate extracts may inhibit prostate cancer growth - study

By Stephen Daniells

31/08/2007 - **Ellagitannins from pomegranate accumulate in the prostate and may be behind the reported benefits of the fruit, suggests a new animal study from the US.**

The study, published in the *Journal of Agricultural and Food Chemistry*, also reports that the growth of prostate cancer cells was significantly inhibited by the pomegranate ellagitannins and their metabolites, highlighting the potential of the extracts against the disease.

"We have shown that pomegranate ellagitannins metabolites are concentrated to a *high* degree in mouse prostate tissues," wrote the authors, led by Navindra Seeram.

"The current study contributes to the increasing body of evidence demonstrating the prostate cancer chemopreventive potential of pomegranate ellagitannins."

The fruit, a rich source of antioxidants, has been linked to improved heart health, but other varied claims have been made including protecting against prostate cancer and slowing cartilage loss in arthritis.

It is these antioxidants, and particularly compounds like punicalagin, which accounts for about half of the fruit's antioxidant ability, that are behind the proposed anti-cancer effects observed in this new study.

The new study, by researchers from the University of California at Los Angeles, suggests that the ellagitannins may also play a role in prostate cancer protection.

Seeram and co-workers looked at the effect of ellagitannins and its metabolites to accumulate in the tissues in C57BL/6 wild-type male mice. According to the researchers, ellagitannins are hydrolysed to release ellagic acid, which is then converted by gut microflora to urolithin A (UA) derivatives.

"It is unclear why pomegranate ellagitannin metabolites localise at higher levels in prostate, colon, and intestinal tissues relative to the other organs studied," wrote the authors.

"Importantly, the predilection of bioactive pomegranate ellagitannin metabolites to localise in prostate tissue, combined with clinical data demonstrating the anticancer effects of pomegranate juice, suggest the potential for pomegranate products to play a role in prostate cancer chemoprevention," they added.

The researchers also investigated the potential of the pomegranate extract to inhibit the growth of prostate cancer cells (LAPC-4) grafted onto mice with impaired immune function. Compared to the control, the pomegranate extract was found to significantly inhibit the growth of the grafted tumours.

"Future animal studies using preclinical chemoprevention models and human studies evaluating metabolite uptake into human prostate tissue, together with studies of the effects of these metabolites on relevant tissue biomarkers, are warranted," concluded the researchers.

Over half a million men worldwide are diagnosed with prostate cancer every year, with over 200,000 deaths from the disease. The lowest incidence of the cancer is in Asia and the Far East, in particular India and China.