

**Breast cancer chemopreventive properties of pomegranate (*Punica granatum*) fruit extracts in a mouse mammary organ culture.**

**Short communication**

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**Abstract:**

We previously reported anticancer effects of pomegranate extracts in human breast cancer cells in vitro and also chemopreventive activity of pomegranate fermented juice polyphenols (W) in a mouse mammary organ culture (MMOC). In the present study we decided to expand the MMOC investigations to also include an evaluation of the potential chemopreventive efficacy of a purified chromatographic peak of W (Peak B), and also of whole pomegranate seed oil. In brief, an MMOC was established according to a known method. For the first 10 days of culture, the glands were treated with pomegranate fermented juice polyphenols (W), a high-performance liquid chromatographic (HPLC) peak separated from W (peak B), or pomegranate seed oil (Oil, and on day 3, exposed to the carcinogen 7,12-dimethylbenz[a]anthracene (DMBA), and for 10 days treated with the putative pomegranate chemopreventive. The glands were subsequently harvested and tumours counted by visual inspection. While W effected a 42% reduction in the number of lesions compared with control, peak B and pomegranate seed oil each effected an 87% reduction. The results highlight enhanced breast cancer preventive potential both for the purified compound peak B and for pomegranate seed oil, both greater than that previously reported for pomegranate fermented juice polyphenols.