

ABSTRACT

THE ANTI-ANGIOGENIC EFFECTS OF NATURALLY OCCURRING TANNINS IN CANCER

Since current therapies are not keeping cancer at bay, other novel therapies may give new hope for cancer patients. In 1971, Judah Folkman suggested that tumor growth is angiogenesis-dependent. This theory sparked the search for a compound that has the ability to inhibit the growth of new blood vessels on pre-existing ones, an anti-angiogenic compound. In this study, we will show the anti-angiogenic properties of naturally occurring tannins. Fractions isolated from pomegranate containing naturally occurring tannins were screened for anti-angiogenic effects. The results show the extracted white pith is the most potent fraction for inhibiting endothelial cells. The Boyden-Chamber assay findings suggest inhibition of endothelial cell migration. Furthermore we have shown the fraction inhibits matrix metalloproteinase-2 and -9 using gelatin zymography. These results suggest the anti-angiogenic activities of extracted white pith may be through multiple steps of the angiogenesis pathway.

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