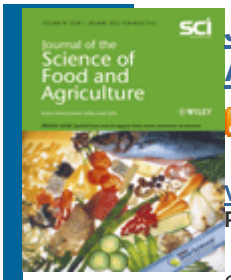

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Research Article

MALDI-TOF MS characterization of proanthocyanidins from cranberry fruit (*Vaccinium macrocarpon*) that inhibit tumor cell growth and matrix metalloproteinase expression *in vitro*

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Abstract

Proanthocyanidin-rich extracts were prepared by fractionation of the fruit of the North American cranberry (*Vaccinium macrocarpon*). *In vitro* growth inhibition assays in eight tumor cell lines showed that selected fractions inhibited the growth of H460 lung tumors, HT-29 colon and K562 leukemia cells at GI_{50} values ranging from 20 to 80 μg ml^{-1}. Matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF MS) of one of these fractions found it to be composed of polyflavan-3-ols, which are primarily tetramers through heptamers of epicatechin containing one or two A-type linkages. Whole cranberry extract and the proanthocyanidin fractions were screened for effect on the expression of matrix metalloproteinases in DU 145 prostate carcinoma cells. The expression of MMP-2 and MMP-9 was inhibited in response to whole cranberry extract and to a lesser degree by the proanthocyanidin fractions. Copyright © 2005 Society of Chemical Industry

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