

Anthocyanin Content, Lipid Peroxidation and Cyclooxygenase Enzyme Inhibitory Activities of Sweet and Sour Cherries.

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Cherries contain bioactive anthocyanins that are reported to possess antioxidant, anti-inflammatory, anticancer, antidiabetic and antiobese properties. The present study revealed that red sweet cherries contained cyanidin-3-O-rutinoside as major anthocyanin (>95%). The sweet cherry cultivar "Kordia" (aka "Attika") showed the highest cyanidin-3-O-rutinoside content, 185 mg/100 g fresh weight. The red sweet cherries "Regina" and "Skeena" were similar to "Kordia", yielding cyanidin-3-O-rutinoside at 159 and 134 mg/100 g fresh weight, respectively. The yields of cyanidin-3-O-glucosylrutinoside and cyanidin-3-O-rutinoside were 57 and 19 mg/100 g fresh weight in "Balaton" and 21 and 6.2 mg/100 g fresh weight in "Montmorency", respectively, in addition to minor quantities of cyanidin-3-O-glucoside. The water extracts of "Kordia", "Regina", "Glacier" and "Skeena" sweet cherries gave 89, 80, 80 and 70% of lipid peroxidation (LPO) inhibition, whereas extracts of "Balaton" and "Montmorency" were in the range of 38 to 58% at 250 mug/mL. Methanol and ethyl acetate extracts of the yellow sweet cherry "Rainier" containing beta-carotene, ursolic, coumaric, ferulic and caffeic acids inhibited LPO by 78 and 79%, respectively, at 250 mug/mL. In the cyclooxygenase (COX) enzyme inhibitory assay, the red sweet cherry water extracts inhibited the enzymes by 80 to 95% at 250 mug/mL. However, the methanol and ethyl acetate extracts of "Rainier" and "Gold" were the most active against COX-1 and -2 enzymes. Water extracts of "Balaton" and "Montmorency" inhibited COX-1 and -2 enzymes by 84, and 91 and 77, and 87%, respectively, at 250 mug/mL.

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