MONTMORENCY CHERRIES CONTAIN 6X MORE MELATONIN

J Agric Food Chem. 2001 Oct;49(10):4898-902.

Detection and quantification of the antioxidant melatonin in Montmorency and Balaton tart cherries (Prunus cerasus).

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The antioxidant melatonin was recently identified in a variety of edible plants and seeds in high concentrations. In plants, as in animals, melatonin is believed to function as a free radical scavenger and possibly in photoperiodism. In this study, melatonin was detected and quantified in fresh-frozen Balaton and Montmorency tart cherries (Prunus cerasus) using high-performance liquid chromatography. Both cherry species contain high levels of melatonin compared to the melatonin concentrations in the blood of mammals**. Montmorency cherries (13.46 +/- 1.10 ng/g) contain approximately 6 times more melatonin than do Balaton cherries (2.06 +/- 0.17 ng/g).** Neither the orchard of origin nor the time of harvest influenced the amount of melatonin in fresh cherries. The implication of the current findings is that consuming cherries could be an important source of dietary melatonin inasmuch as melatonin is readily absorbed when taken orally. Also, previously published data and the results presented here show that melatonin is not only endogenously produced but also present in the diet.

PMID: 11600041 [PubMed - indexed for MEDLINE]

J Agric Food Chem. 1999 Mar;47(3):840-4.

Antioxidant polyphenols from tart cherries (Prunus cerasus).

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Montmorency and Balaton tart cherries were lyophilized and sequentially extracted with hexane, ethyl acetate, and methanol. Methanolic extracts of dried Balaton and Montmorency tart cherries (Prunus cerasus) inhibited lipid peroxidation induced by Fe(2+) at 25 ppm concentrations. Further partitioning of this methanol extract with EtOAc yielded a fraction that inhibited lipid peroxidation by 76% at 25 ppm. Purification of this EtOAc fraction afforded eight polyphenolic compounds, 5,7,4'-trihydroxyflavanone (1), 5,7, 4'-trihydroxyisoflavone (2), chlorogenic acid (3), 5,7,3', 4'-tetrahydroxyflavonol-3-rhamnoside (4), 5,7,4'-trihydroxyflavonol 3-rutinoside (5), 5,7,4'-trihydroxy-3'methoxyflavonol-3-rutinoside (6), 5,7,4'-trihydroxyisoflavone-7-glucoside (7), and 6, 7-dimethoxy-5,8,4'-trihydroxyflavone (8), as characterized by (1)H and (13)C NMR experiments. The antioxidant assays revealed that 7-dimethoxy-5,8,4'-trihydroxyflavone (8) is the most active, followed by quercetin 3-rhamnoside, genistein, chlorogenic acid, naringenin, and genistin, at 10 microM concentrations.

PMID: 10552377 [PubMed - indexed for MEDLINE]