

Title Antioxidants in fruits and their possible anticancer property
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Abstract

Fruits are good sources of natural antioxidants such as carotenoids, vitamins, phenols, flavonoids, dietary glutathione, and endogenous metabolites. These antioxidants are capable of performing a number of functions including acting as free radical scavengers, peroxide decomposers, singlet and triplet oxygen quenchers, enzyme inhibitors, and synergists. Active oxygen species are generated as by-products of normal metabolism. Increased levels of these active oxygen species or free radicals create oxidative stress, which leads to a variety of biochemical and physiological injuries often resulting in impairment of metabolism, and eventually, cell death. The different antioxidant components found in fruits provide protection against harmful free radicals and have been associated with lower incidence and mortality rates of cancer and heart disease, in addition to a number of other health benefits. This paper summarizes the antioxidant capacities of various fruits, and the factors which affect their antioxidant activities such as crop genotype variation and maturity, pre-harvest conditions, post-harvest handling and processing. Many attractive opportunities exist for enhancing the quantity and quality of essential nutrients present in fruits. Strategies for establishing a new research and production paradigm will be reviewed, such as improving selection criteria among different horticultural cultivars and improving pre-harvest conditions and post-harvest handling to enhance nutrient quality. Evidence will also be presented on the prevention and inhibition of tumor growth by fruit extracts and bioactive compounds isolated from fruits.