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FILE: ▪Roibos (*Aspalathus linearis*)
▪Antioxidant
▪Antimutagenic

HC 100331-251

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RE: Comprehensive Review of Rooibos

Erickson L. Rooibos tea: research into antioxidant and antimutagenic properties. *HerbalGram* 2003;59:33–45.

A mild-tasting herbal tea made from the South African rooibos shrub (*Aspalathus linearis*) is gaining popularity as a "healthy beverage." Rooibos tea has a high content of polyphenol antioxidants, a low tannin content, and no caffeine. Although this tea is new to most Americans, it has been popular for generations in the Cedarberg mountain region of South Africa. Recent studies have shown that some of the antioxidants in rooibos tea may protect against stroke, heart disease, and cancer. The specific antioxidant constituents of this tea and evidence to support its purported health benefits are the subjects of this article.

The polyphenolic antioxidant constituents of rooibos tea include phenolic acids and flavonoids. A 150–200-mL serving of tea contains approximately 60-80 mg total polyphenols, and a 150-mL serving contains approximately 14 mg flavonoids. Use of the 1,1-diphenyl-2-picrylhydrazyl radical scavenging assay identified the following phenolic acids in rooibos tea, in decreasing order of antioxidant activity: caffeic acid, protocatechuic acid, syringic acid, ferulic acid, vanillic acid, *p*-hydroxybenzoic acid, and *p*-coumaric acid. The following flavonoids were identified: aspalathin, nothofagin, quercetin, rutin, isoquercitrin, orientin, isorientin, luteolin, vitexin, isovitexin, and chrysoeriol. "Currently, rooibos is the only known natural source of aspalathin." Nothofagin has been identified from only one other natural source: the heartwood of the red beech tree (*Nothofagus fusca*).

Laboratory studies have shown "potential health benefits" of rooibos in vitro and in live animals; however, studies in humans have not yet been conducted. Investigators showed that fermented rooibos tea reduced cancer-associated changes in animal cells exposed to the mutagens benzo[a]pyrene and mitomycin C. In a radiation study, fermented rooibos tea reduced the cancerous transformation of mouse cells exposed to x-rays. Rats that ingested

fermented rooibos tea daily, ad libitum, from the age of 3 to 24 months showed much lower age-related lipid peroxidation in the brain compared with rats that ingested water. The health benefits of the tea likely are attributable to a combination of the antioxidants rather than from any one single substance.

Distributors of rooibos tea suggest that it can help with allergies, sleep disorders, digestive problems, and headaches; however, these claims are not supported by scientific research. Other studies have shown that this tea may enhance immune function, and South African physicians currently recommend rooibos for infant colic. The low tannin content of the tea is appealing because tannins are known to reduce iron absorption. Because rooibos tea is naturally caffeine-free, it does not need to undergo a decaffeination process, which results in a reduction in polyphenol content.

In conclusion, rooibos tea has gained popularity because of its fruity, sweet taste and because it is rich in antioxidants, low in tannins, and caffeine-free. On the basis of current research, rooibos appears to be safe and free of adverse side effects and "may help protect against free radical damage," which can lead to cancer, heart attack, and stroke. Future studies are needed to determine "whether the antioxidant benefits of rooibos observed in vitro and in animals translates into health benefits for humans."

—Brenda Milot, ELS