
Abstract No. 45

PaperTitle **Therapeutic Properties of Rooibos and Honeybush Herbal Teas Against Skin Carcinogenesis**

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ABSTRACT

Skin cancer is the most common of all cancers of which nonmelanoma skin cancers (NMSC), namely basal cell carcinoma (BCC) and squamous cell carcinoma (SCC) are the most prevalent tumours worldwide. South Africa has the highest incidence of skin cancer worldwide, comparable only to that of Australia. Despite early diagnosis, at least 850 people die each year of malignant melanomas in South Africa. Rooibos tea (*Aspalathus linearis*) and Honeybush teas (*Cyclopia intermedia* and *Cyclopia genestoides*) are herbal teas endemic to South Africa and their beneficial health properties are partly ascribed to their phenolic constituents. The potent anti-tumour promoting properties of the herbal teas were recently demonstrated using the tumour initiation and promotion model in mouse skin. Soluble fractions protected against TPA-induced tumour promotion by significantly decreasing the volume and incidence of skin tumours while it also delayed the onset of tumour development. In this study the pro-apoptotic properties of the unfermented herbal teas, rooibos and honeybush were analysed and compared in vitro, using normal skin (CRL 7761) and skin carcinoma (CRL 7762) cell lines. The total polyphenols and flavonoid subgroups of the extracts were determined spectrophotometrically. Cytotoxicity was determined using flow cytometry and the IC₅₀ of the teas were calculated. Cell viability, monitoring mitochondrial activity, and cell proliferation were determined at the IC₅₀ levels were conducted. Mitochondrial activity was significantly inhibited by the herbal teas. The results demonstrated the pro-apoptotic potential and therefore the anti-cancer properties of two unique South African herbal infusions.