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PaperTitle **Modulating Effect of Rooibos and Honeybush Herbal Teas in the Development of Oesophageal Cancer in Male Fischer F344 Rats**

Main Author **Sissing Linda**

Presentor **Sissing Linda**

PROMEC Unit Medical Research Council Tygerberg SOUTH AFRICA linda.sissing@mrc.ac.za

Co-Authors

ABSTRACT

Cancer is the largest single cause of death in most countries, of which oesophageal cancer is one of the fastest-growing and ranks as the ninth most common malignancy in the world. It is particularly common in Southern Africa, specifically among the population of the former Transkei region in the Eastern Cape. Several plant extracts, of which tea is one, have been evaluated for their chemopreventive properties. Two unique South African herbal teas, rooibos and honeybush, were assessed for their cancer modulating properties, utilising a methylbenzyl nitrosamine (MBN)-induced rat oesophageal cancer model. Green and black teas (*Camellia sinensis*) were used as study references. MBN treated male Fischer rats were orally exposed to the different teas and infusions as their sole source of drinking fluid for twenty-five weeks following carcinogen administration. Detailed tea intake profiles and body weight gain parameters were monitored. The total polyphenol, flavanol and flavonol content of the different teas and infusions determined as well as the major flavonoids of the herbal teas were also quantified by HPLC. At termination the number and size ($[(\text{length} \times \text{width} \times \text{height} \times \pi)/6]$) of oesophageal papillomas were quantified. The MBN-treated rats receiving the unfermented rooibos, fermented and unfermented honeybush failed to develop larger papillomas (>10 and >20 mm³) when compared to the MBN control group. Reduction in the proliferative capacity of the papillomas could be important in developing chemopreventive strategies against oesophageal cancer utilising the herbal teas.