# Cancer preventive properties of an anthocyanin-enriched sweetpotato in the APC$^{MIN}$ mouse model


## Abstract

Anthocyanin-rich foods and preparations have been reported to reduce the risk of life-style related diseases, including cancer. SL222 sweetpotato, a purple-fleshed cultivar developed in New Zealand, accumulates high levels of anthocyanins in the storage-root. We have examined the chemopreventative properties of the SL222 sweetpotato in the C57BL/6J-APC$^{MIN\ /+Apc}$ (APC$^{MIN}$) mouse, a genetic model of colorectal cancer. APC$^{MIN}$ and C57BL/6J wild-type mice (n=160) were divided into 4 feeding groups consuming diets incorporating 10% SL222 sweetpotato flesh, 10% SL222 sweetpotato skin or 0.12% ARE (Anthocyanin rich-extract, prepared from SL222 sweetpotato, at a concentration equivalent to the flesh-supplemented diet) or a control diet (AIN-76A) for 18 weeks. At 120 days of age, mice were anaesthetised and blood samples were collected, before mice were sacrificed and the intestines used for adenoma enumeration. The SL222 sweetpotato supplemented-diets reduced the adenoma number in APC$^{MIN}$ mice, and exhibited significant protection against DNA-damage in peripheral blood lymphocytes. These data have significant implications for the use of this sweet potato variant in protection against colorectal cancer.



Keywords: anthocyanin; sweet potato; colorectal cancer; APCMIN mice; cancer protection