Anthocyanin-rich foods and preparations have been reported to reduce the risk of life-style related diseases, including cancer. SL222 sweet potato, 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 sweet potato in the C57BL/6JAPCMIN /+Apc (APCMIN) mouse, a genetic model of colorectal cancer. APCMIN and C57BL/6J wild type mice (n=160) were divided into four feeding groups consuming diets incorporating 10% SL222 sweet potato flesh, 10% SL222 sweet potato skin or 0.12% ARE (Anthocyanin rich extract, prepared from SL222 sweet potato, 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 sweet potato supplemented-diets reduced the adenoma number in APCMIN mice. These data have significant implications for the use of this sweet potato variant in protection against colorectal cancer.