

### **Abstract**

Improving the postharvest nutritional content of vegetables is important to maximise the dietary benefits of the numerous antioxidants and disease preventing compounds found in plant-derived food. Selenium is an essential micronutrient for human health. However, it is becoming increasingly clear that enhanced dietary intake of selenium has health benefits, particularly in cancer prevention. Clinical trials have shown an up to 70% reduction in certain cancers on supplementation of selenium in the diet (Clarke et al., 1996, *J Amer Med Assoc* 276:1957). The precise mode of action by selenium in human health is still to be elucidated. However, preparations of certain plants, such as broccoli, have greater bio-efficacy against cancer than inorganic selenium in rat cancer models. It appears that this is due to the production of particular organic selenium-containing compounds in these plants. We are interested in understanding the uptake and metabolism of selenium in these plants, and using transgenic expression of recombinant enzymes to facilitate the production of these compounds with putative anti-cancer effects.