

Australian Native Fruits and Their Potential Implications in Cancer Research

Dr. Deep Jyoti Bhuyan and Dissanayake Mudiyansele
Indeewarie Hemamali

NICM Health Research Institute, Western Sydney University, Australia

Australia is home to many native fruits that contain unique and high levels of secondary metabolites due to their adaption to the harsh climatic conditions of the island. In addition to their unique secondary metabolites, Australian native fruits (also known as Bush tucker) are rich in dietary fibre, essential amino acids, vitamins, and minerals with a gross production value of \$80 million. Due to their rich nutritional and phytochemical content, Australian native fruits have been an integral part of the Indigenous Australian diet and traditional medicine for millennia. Native fruits including the Kakadu plum (*Terminalia ferdinandiana*), Davidson's plum (*Davidsonia pruriens*), and Illawarra plum (*Podocarpus elatus*) are commercially grown in Australia and contain significantly higher polyphenol (up to 3.9X) and antioxidant (up to 5.2X) contents compared to blueberries. However, only a limited number of studies are available on their plausible bioactive properties, molecular mechanisms of action, and bioavailability. Our recent studies have unveiled the potential molecular mechanisms of two Australian native fruits underpinning their activity against breast adenocarcinoma cells as well as explored their broad-spectrum pharmacological properties. This presentation will cover our recent research on Australian native fruits as potential functional food ingredients in breast cancer research. It will also discuss current trends, gaps, and the future directions of Australian bush tucker research.

Keywords : Australian native fruits, cancer, breast cancer, bioavailability, pharmacological effects, bioactivity.