

Plant extracts offer hope against diabetes and cancer

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Diabetes is the fastest growing metabolic disease in the world. A new study has shown that traditional Aboriginal and Indian plant extracts could be used to manage the disease and may also have potential use in

cancer treatment.

Researchers from Swinburne University of Technology identified plant species that could potentially be applied in the management of type 2 diabetes and related complications of weight gain, hypertension and immune suppression.

As part of her PhD research, Dr Vandana Gulati studied seven Australian Aboriginal medicinal plants and five Indian Ayurvedic plants to determine their anti-diabetic potential.

She investigated the 12 medicinal [plant extracts](#) for their effect on [glucose uptake](#) and adipogenesis – the formation of fatty tissue. She also investigated the potential anti-cancer activity of the extracts in two cancerous cell lines.

"We found that some of the plant extracts stimulated glucose uptake in fat cells while others reduced fat accumulation in fat cells," Dr Gulati said.

Of the traditional Aboriginal plant extracts tested, Witchetty Bush (*Acacia kempeana*) and Australian sandalwood (*Santalum spicatum*) both stimulated glucose uptake and Dead finish (*Acacia tetragonophylla*), Turpentine bush (*Beyeria Ieshnaultii*) and Caustic weed (*Euphorbia drumondii*) significantly reduced fat accumulation in [fat cells](#).

Among the Indian Ayurvedic plant extracts, Kali musli (*Curculigo orchioides*) stimulated glucose uptake as well as reduced [fat accumulation](#). Vijayasar (*Pterocarpus marsupium*), and Kalmeigh (*Andrographis paniculata*) reduced accumulation in [fat cells](#).

Furthermore, extracts of Witchetty bush and Dead finish also showed

strong activity against cervical cancer cells.

A 2012 Swinburne study looked at how some of these extracts slow down two key enzymes in carbohydrate metabolism which affect blood sugar and diabetes and also found they had an antioxidant effect.

"Australian medicinal plants are an untapped source and should be further explored as potential treatments for disease," Chair of Swinburne's Department of Chemistry and Biotechnology, Professor Enzo Palombo, said.

Professor Palombo said studies in animals and, eventually, humans are required to take this research further.

More information: "Exploring the anti-diabetic potential of Australian Aboriginal and Indian Ayurvedic plant extracts using cell-based assays" *BMC Complementary and Alternative Medicine* 2015, 15:8 [DOI: 10.1186/s12906-015-0524-8](https://doi.org/10.1186/s12906-015-0524-8)

Provided by Swinburne University of Technology

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