Study finds anti-cancer properties in local plants

Findings could lead to development of new pharmaceutical drugs in future; Researcher

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Some plants commonly found in nature reserves and community gardens in Singapore could one day be made into pharmaceutical drugs for treating cancer.

A study by researchers from the National University of Singapore (NUS) found that leaf extracts taken from medicinal herbs used in South-east Asian folk medicine were effective in stopping the growth of seven types of cancer. Associate Professor Koh Hwee Ling of the NUS Faculty of Science’s Department of Pharmacy, who led the study, said: “Although Western medicine is the primary form of healthcare in Singapore, there are still people using fresh medicinal plants for their healthcare needs, sometimes together with Western medicine,” she said.

For a previous study published in 2016, led by Prof Koh, the team conducted face-to-face interviews with 200 local users of folk medicinal plants between 2010 and 2013. A total of 104 plant species were documented, along with the participants’ usage patterns, dosages, reasons for and methods of use.

For the new study, the team focused on seven plants commonly believed to be effective in treating or preventing cancer. Leaf extracts from the plants were obtained using different solvents and extraction methods. The samples were tested for 48 hours on 12 cell lines — colonies of cells with the same genetic make-up — from seven types of cancer: breast, cervical, colon, liver, ovarian and uterine cancer, and leukemia.

The most promising results came from a plant called Conocarpus erectus, also known as sabah snake grass or mesmai. It was found to have strong or moderately strong effects on all the cell lines except the leukemia cell line.

Medicines in the garden

Researchers want to document and investigate how plants were used in folk medicine before the knowledge is lost.

Clausena lancea

* Nanpu, fruitt’s curry leaf
- An evergreen tree with broad leaves found in southern China and grown in parts of South-east Asia.
- Its sweet-sour fruit is edible and used in soups and curries.
- Pale green leaves with reddish edges. Users also fold the leaves and drink with the leaves and fruit.

Clerodendrum viscosum

* Simple to heartfelt, legume
- Its stem and the underside of its leaves are covered with soft hairs.
- Also found in Malaysia, the Philippines and Indonesia.
- In traditional Chinese medicine, the fruits are used to treat fever, headache and conjunctivitis.

Medinilla magnifica

* Rose cactus, seven-star needle
- A cactus; the root is native to Panama and Colombia with large foliar flowers and blooms in 5-bunches meaning seven stars.
- It is used in traditional medicine as an anti-cancer agent.
- It is also used in traditional medicine to treat diabetes, malaria, cancer, arthritis, stomach, heart and diabetes.

Vernonia amygdalina

* South African leaf, bitter leaf
- The leaves have a characteristic colour and a bitter taste. The plant is native to Nigeria and common in Singapore and Malaysia.
- It is used in traditional medicine for its anti-inflammatory properties and is eaten as a vegetable in Africa.

Leucas indica

* Bandicoot berry, remani
- A shrub or small tree with ribbed branches and spiny arranged leaves.
- Commonly found in Singapore.
- The dried leaves are often dried and consumed as a tea.

Vitex trifolia

* Black-furred, pokok puchai bering
- Native to Madagascar and Indonesia.
- Its dark green leaves have a rough texture and are used to help their poison.
- It is used in traditional medicine for its anti-inflammatory properties.

Strobilanthes crispus

* Black-furred, pokok puchai bering
- Native to Madagascar and Indonesia.
- Its dark green leaves have a rough texture and are used to help their poison.
- It is used in traditional medicine for its anti-inflammatory properties.

Cinia canescens

* Sabah snake grass, behaidi guah
- A plant native to Indonesia and other parts of South-east Asia that was originally used to treat snake bites. It is used to treat anti-cancer, anti-inflammatory, anti-diabetic, anti-malaria, anti-influenza, anti-bacterial, anti-viral, anti-tumor and anti-cancer.
- It is used in traditional medicine for its anti-inflammatory properties.