

Press release

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Thai curry ingredient has anti-cancer properties

The ginger-like root, galangal, which is used to flavour Thai curries, has potential anti-cancer properties according to researchers working at King's College London.

Peter Houghton, Professor of Pharmacognosy at King's, and Dr CC Lee found that extracts of both lesser galangal (*Alpinia officinarum*) and greater galangal (*Alpinia galanga*) could kill cancer cells as well as increasing the ability of normal cells to protect themselves from carcinogens.

'This dual action is quite rare among traditional anti-cancer medicines,' said Professor Houghton. *'Normally extracts are able to kill cancer cells or boost healthy cells' natural defences against cancer, but galangal seems to do both.'*

The researchers made and tested extracts from seven South-East Asian plants that were reputed to be good for treating cancer, to discover whether these claims had any scientific basis.

Several of the extracts, when added to liver cells in culture, activated a detoxifying enzyme in the cells, called GST. GST is one of several important enzymes involved in excreting carcinogens from cells. Other research groups have already demonstrated that substances which increase the activity of GST prevent cells becoming cancerous.

Lesser galangal was the most effective extract in this test.

Dr Lee went on to isolate and purify several compounds from the lesser galangal extract, two of which could activate the GST enzyme when added on their own to the liver cells.

These two compounds, which are also present in greater galangal, were more effective than the others at killing breast and lung cancer cells grown in culture.

Further tests indicated that a healthy cell type was more resilient to the chemicals than the cancerous cell types tested. One of the isolated chemicals was about three times more effective at killing the cancer cells than the healthy cells. Furthermore, the effect of this chemical on the healthy cells seemed to be reversible, unlike its effect on the cancerous cells.

'These laboratory experiments show that there is some basis to the claim that galangal could be used to treat cancer,' said Professor Houghton. *'However, we are a long way from recommending that people eat galangal regularly to protect themselves against the disease. We would need to carry out further tests, such as looking to see whether people who eat galangal on a daily basis are less likely to suffer from cancer than those who do not.'*

Professor Houghton's work to test the medicinal properties of natural remedies, and identify active ingredients, continues a long tradition. Almost a quarter of the medicines that are currently on the market are based on molecules found in plants, including the cancer drug, Paclitaxel (Taxol®), which comes from Yew tree bark and Galantamine (Reminyl®), for Alzheimer's disease, which comes from daffodils and snowdrops. His previous work includes studying the anti-diabetic properties of curry leaves and the beneficial properties of sage on memory.

Greater galangal has been used traditionally in Indo-China and the Malay Peninsula, against cancer of the stomach. It is also reputedly effective against indigestion, colic and dysentery, as well as some skin conditions. In powdered form or as an alcoholic extract, galangal reportedly acts as a stimulant and an aphrodisiac.

Notes for Editors

Professor Peter Houghton

Peter Houghton is Professor of Pharmacognosy, in the Department of Pharmacy at King's College London. He has been researching the chemical and pharmacological bases for the biological activities of natural substances for over thirty years. Most of the research of his group is focussed on flowering plants used in traditional medicine, but investigations into bioactive secondary metabolites of fungi, invertebrates and marine organisms are also carried out.

King's College London

King's is one of the oldest and largest colleges of the University of London with 13,800 undergraduate students and some 5,400 postgraduates in ten schools of study. The College had 24 of its subject-areas awarded the highest rating of 5* and 5 for research quality, demonstrating excellence at an international level. The recent Institutional Audit, carried out by the Quality Assurance Agency, received an excellent result.

King's is in the top group of universities for research earnings with income from grants and contracts of £100 million and has an annual turnover of £348 million. In 2004 the College was once again awarded a AA- credit rating from Standard & Poors. King's is a member of the Russell Group, a coalition of the UK's major research-based universities.

Press contacts

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