

Beans mean new weapon in battle against cancer

Sam Lister

A NATURAL compound found in everyday foods such as beans, nuts and cereals has been identified by scientists as a potent agent for fighting cancer.

Research suggests diets high in substances containing the compound, which has been shown to inhibit the growth of tumours, could help prevent cancer, while the chemical offers a new weapon for treating the disease.

Foods particularly rich in the compound inositol penta-

kisphosphate, known as InsP5, include cashews and peanuts and beans such as kidney, pinto and navy beans, the pulse commonly used in baked beans. Beans and nuts that have been cooked are a better source because the heating process generates more InsP5 as it breaks down other compounds.

Scientists from University College London who have carried out tests on InsP5 say it inhibits a key enzyme called phosphoinositide 3-kinase, which is involved in the growth of tumours in humans.

Marco Falasca, of the UCL Sackler Institute, said the discovery was particularly exciting because InsP5 was a natural compound that, unlike most anti-cancer agents, was not toxic even if used in large quantities.

"Our study suggests the importance of a diet enriched in food such as beans, nuts and cereals which could help prevent cancer," Dr Falasco said.

In the study, published in the latest issue of *Cancer Research*, the compound was tested on mice and on cancer cells. Not only was

it found to inhibit the growth of tumours in mice, but the phosphate also enhanced the effect of cytotoxic (anti-cancer) drugs in ovarian and lung cancer cells.

The findings suggest that InsP5 could be used to sensitise cancer cells to the action of commonly used cancer drugs.

The enzyme phosphoinositide 3-kinase plays a key role in the development and progression of human tumours. Scientists have been exploring the possibility of using it as a target for cancer treatment, but until now inhibi-

tory agents have been difficult to develop because of problems with the chemical stability and toxicity of the substances they contain.

InsP5 is a non-toxic, water-soluble compound found in most legumes — such as lentils, peas and beans — and in wheat bran and nuts. This makes it a promising therapeutic agent because conventional chemotherapy agents can be toxic to different degrees, whereas in the study, the inositol phosphate agent was found to be non-toxic even at higher concentrations.

Nutritionists and scientists have long hailed the health-giving qualities of beans as a high-fibre foodstuff thought to offer protection against the damage caused to cells by free radicals, which can lead to cancer.

The US Department of Agriculture recommends that people eat the equivalent of three cups of beans a week. Four types of bean are among the 20 most antioxidant-rich foods, according to research by USDA scientists.

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