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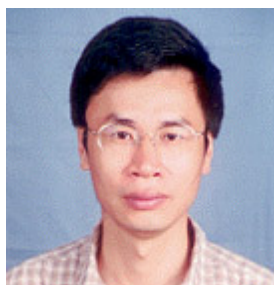
2009 : December 2009 - Fast Breaking Papers : Xinhui Zhao on Anticancer Activities of Flavones and Flavonols

FAST BREAKING PAPERS - 2009

December 2009



Xinhui Zhao talks with *ScienceWatch.com* and answers a few questions about this month's Fast Breaking Paper in the field of Agricultural Sciences.



Article Title: Flavones and flavonols exert cytotoxic effects on a human oesophageal adenocarcinoma cell line (OE33) by causing G2/M arrest and inducing apoptosis

Authors: Zhang, Q.;Zhao, XH;Wang, ZJ

Journal: FOOD CHEM TOXICOL, Volume: 46, Issue: 6, Page: 2042-2053, Year: JUN 2008

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SW: Why do you think your paper is highly cited?

Phytochemicals are a hot topic in both food and medical sciences, and many scientists are interested in this field, which may be the reason why our paper was highly cited. Our paper reports on a study describing the effects of a number of dietary flavones and flavonols on a human esophageal carcinoma cell line (OE33) *in vitro*, which had not previously been well-studied. We identified the anticancer activities of these compounds in this cancer cell and revealed the molecular pathways and important genes (esp. 14-3-3s) that mediate the anticancer activities of flavones and flavonols.

SW: Does it describe a new discovery, methodology, or synthesis of knowledge?

The paper describes some new target genes regulated by flavones and flavonols in human esophageal carcinoma cells (OE33), for example, 14-3-3s, and provides new proof of the anticancer activities of plant-derived foods.

SW: Would you summarize the significance of your paper in layman's terms?

Dietary flavonoids, which include flavones, flavonols, isoflavones, flavanols, flavanones, flavanonols, isoflavones, and chalcones, are ubiquitously found in plant-derived foods and medical plants. This study has made significant contributions to the improved understanding of the anticancer effect of phytochemicals. It also makes us aware of the importance of plant-derived food-intake.

SW: How did you become involved in this research, and were there any problems along the way?

Evidence has been accumulated indicating that dietary intake of plant-based diets can reduce the risk of many cancers, especially the cancers in the digestive

"Our research will explore the molecular mechanisms underlying the anticancer activities of flavonoids and find the relationship between the structures of phytochemicals and their

system. As a digestive system cancer, esophageal cancer has a high incidence and high mortality rate in China.

anticancer activities..."

Considerable epidemiological investigations indicate that flavonoids have an important role in the anticancer activities of plant-derived foods. However, the molecular mechanism of the effect of flavonoids on cancer remains unclear. Therefore, we are attempting to understand this mechanism by studying the effects of flavones and flavonols on a human esophageal carcinoma cell line. It is fortunate that I and my coauthors have found some promising results.

SW: Where do you see your research leading in the future?

Our research will explore the molecular mechanisms underlying the anticancer activities of flavonoids and find the relationship between the structures of phytochemicals and their anticancer activities, which may provide more evidence to reveal the anticancer effects of flavonoids.

SW: Do you foresee any social or political implications for your research?

Understanding the molecular mechanism of the inhibitory effects of flavones and flavonols on some cancer cells will provide a guideline for people to help prevent cancer by regulating their dietary patterns, or to treat cancer by finding or reformulating new anticancer drugs.

Professor Xinhui Zhao
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KEYWORDS: PROSTATE-CANCER CELLS; CYCLE ARREST; CARCINOMA-CELLS; HUMAN BREAST; TRANSCRIPTIONAL ACTIVITY; P53-INDEPENDENT PATHWAY; ANTICANCER AGENTS; APIGENIN; INDUCTION; RISK.



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