Scientists discover natural compound in palm oil kills breast cancer cells

First tocotrienol study to identify upstream regulators that mediate breast cancer progression and invasion

1 December 2009, Singapore – Scientists from Davos Life Science Singapore have partnered with the Li Ka Shing Faculty of Medicine at the University of Hong Kong and the Australian Prostate Cancer Research Centre, to show that a compound found naturally in palm oil kills breast cancer cells. The compound, called gamma-tocotrienol is found at low levels in food sources such as palm oil, barley and rice bran. In this cancer cell line study, gamma-tocotrienol, which was extracted in its natural form from palm oil, demonstrated powerful cancer killing properties. During *in-vitro* experiments, the natural compound demonstrated synergistic potency with Docetaxel, a commonly-used chemotherapy drug used to treat breast cancer. This is the first tocotrienol study to identify the key upstream regulators that mediate breast cancer progression and invasion.

The research discovered that gamma-tocotrienol targets cancer cells by inhibiting Id1, which is a key cancer-promoting protein. This triggers cell apoptosis, causing the cancer cells to self-destruct. More importantly, the ability of gamma-tocotrienol to inhibit Id1 was also observed in prostate cancer [1] and melanoma [2] in separate research studies conducted by Davos Life Science Singapore, in collaboration with the University of Hong Kong. This suggests a common mechanism for gamma-tocotrienol in reversing cancer growth. The compound was also found to suppress the invasive ability of breast cancer cells to spread to other organs via metastasis. While the doses of gamma-tocotrienol showed positive anticancer effects, they did not affect the normal cell functions of healthy cells. Furthermore, the same study showed that gamma-tocotrienol enhanced the cancer killing effect of Docetaxel.

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[1] British Journal of Cancer (2008:99(11))
[2] Nutrition and Cancer (2009:61(3))

This study, which was published in Cancer Letters, is the latest scientific finding on the therapeutic properties of tocotrienol towards cancer.

"Natural tocotrienol is of growing interest amongst the scientific and medical community. Various scientific studies have demonstrated that in addition to its anti-cancer properties, tocotrienol also has other health benefits such as reducing inflammation as well as cholesterol-lowering properties," said Dr Lee Smith, CEO of Davos Life Science Singapore, a company that focuses on the production and R&D of tocotrienol. "The fact that natural tocotrienol has been found to be effective in killing melanoma, breast, prostate and pancreatic cancer cells makes it highly promising for future development and research in cancer therapy and prevention. Towards this end, we are supporting independent research, by contributing funding and our natural tocotrienol to a Phase I trial in the U.S. on pancreatic cancer [3]. With this approach, we expect to accelerate the research into natural tocotrienol's potential for the treatment and prevention of cancer."

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About Davos Life Science
Davos Life Science Pte Ltd was set up in 2004, as a manufacturer that isolates and purifies natural tocotrienol, for use in supplements, functional food, personal care and pharmaceutical formulations. Davos Life Science markets its gamma-tocotrienol under the name 'Natural e[3]'. The company has established the world's largest R&D centre dedicated to tocotrienol and the world's largest manufacturing facility for the production of natural tocotrienol. For more information visit www.davoslife.com

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[3] This is a three-year clinical study, which is being conducted at the Moffitt Cancer Centre (US) and will enroll some 45 patients with pancreatic cancer