Fatty acids fight cancer spread

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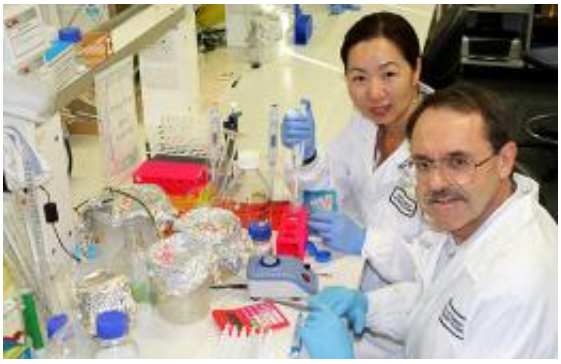

Professor Michael Murray and Dr Sarah Cui were part of the team who made the discovery.

Tiny agents found in omega-3 could potentially be used to block the path of primary cancer tumours, preventing the advance to secondary stage cancers according to pharmacy researchers at the University of Sydney.

Investigators in the Pharmacogenomics and Drug Development Group of the Faculty of Pharmacy are using breast cancer tissue cells to gauge the blocking capacity of the omega-3 agents called epoxides on cancer cell movement.

Dr. Michael Murray, Professor of Pharmogenetics at the University, says a major life-threatening consequence of malignant breast tumours is metastasis where the disease has spread to distant sites (or tissues) and at present there are no treatments.

He led his team to the discovery of the anti-metastatic actions of epoxides which are produced within the body from omega-3 polyunsaturated fatty acids. The groundbreaking work has led Murray and his Drug Development Group deeper into the molecular structure of the omega-3 agents.

Professor Murray says: "These agents are a bit like frontline soldiers blocking the assault of an invading army and now we want to advance our research which was published late last year and apply it to breast cancer cells.

"We know that epidemiological studies have reported that dietary intake of omega-3 polyunsaturated fatty acids including eicosapentaenoic and docosahexaenoic acids, decrease the risk of certain cancers. And many of us are including sources of omega-3 such as tuna and salmon in our diet as a precaution.

"The major objective of our new project is to speed the development of anti-metastatic agents based on omega-3 epoxides and trial their effectiveness in vivo on breast cancer tissue.

"Longer term we are aiming to develop a completely new class of anti-metastatic drugs designed to inhibit the spread of primary cancers," Murray says.

Although not all experts agree, women who eat foods rich in omega-3 fatty acids over many years may be less likely to develop breast cancer. More research is needed to understand the effect that omega-3 fatty acids may have on the prevention of breast cancer says Murray.

Research has also shown that omega-3 fatty acids reduce inflammation and may help lower risk of chronic diseases such as heart disease and arthritis.

Provided by University of Sydney