



PRESS RELEASE

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PolyU study sheds new light on anti-inflammatory mechanism of unique marine oil

A pioneering research by The Hong Kong Polytechnic University (PolyU) has uncovered the previously unknown anti-inflammatory mechanism for soothing the pain arising from arthritis, and thus unlocked the key to conducting further researches on the relationship between functional foods and this common crippling disease.

This research was undertaken by a team led by Professor Samuel Lo of the Department of Applied Biology and Chemical Technology in the University's Proteomics Laboratory. The team was intrigued by whether consumption of a food supplement would alleviate the symptom of arthritis, and they started with testing the oil of *Perna canaliculus*, the green-lipped mussel of New Zealand, on rats with adjuvant-induced arthritis.

In a series of studies conducted by Professor Lo and his team, the oil extract was shown to be able to relieve pain in the animals; modulate cytokines with a decrease in cytokines associated with inflammation, and lead to an increase in IL-10 (a cytokine that controls inflammation).

More importantly, the oil extract decreased the synthesis of some proteins associated with inflammation, while increasing the synthesis of the anti-inflammatory enzyme MDH. Decreased expression of proteins related to inflammation was uncovered by proteomic technologies. This discovery has therefore cast new light on the anti-inflammatory function of this oil and the underlying mechanism of soothing arthritis.

The result of this ground-breaking study was published under the title of "Differential protein expression induced by a lipid extract of *Perna canaliculus* in splenocytes of rats with adjuvant-induced arthritis" in the *Inflammopharmacology* journal in 2008.

Encouraged by the findings, PolyU researchers are planning to test the anti-inflammatory functions of other common foods as well as Chinese herbs. They will also involve athletes and sportsmen besieged by arthritis in the next stage of research. Prof. Lo will be working alongside with Associate Professor Dr Mason Leung of the University's Department of Rehabilitation Sciences in the next stage.

The oil of *Perna canaliculus*, the green-lipped mussel of New Zealand, when extracted by super-critical extraction is free of protein and carbohydrate. A large number of studies have been published on its composition, complex mode of action, activity in animal models, and efficacy in controlling osteoarthritis and moderate asthma in patients.

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