

Study finds omega-3 greater anti-inflammatory potential

7/30/2007 - An increased intake of fish oil over vegetable oil can help reduce the inflammation of various tissue and organs, a study has found.

Writing in the *Journal of Biological Chemistry*, researchers from America report that [omega-3](#) fish oil has a greater effect of decreasing the formulation of chemicals called prostanoids than the equivalent from vegetable oil.

This study adds to an ever-growing body of science linking a multitude of health benefits to omega-3, as well as rubber stamping the benefits of omega-3 over [omega-6](#).

In August last year, researchers from the David Geffen School of Medicine at UCLA reported that changing the ratio of omega-3 to omega-6 in the typical Western diet might reduce prostate cancer tumour growth rates and PSA levels (*Clinical Cancer Research*, Vol. 12, Issue 15).

Moreover, researchers from the Paterson Institute, a cancer research institute funded by British charity Cancer Research UK and affiliated with the University of Manchester reported that omega 6 fats increased the spread of prostate tumour cells into bone marrow, while omega-3 fatty acids were seen to block this invasion (*British Journal of Cancer*, doi: 10.1038/sj.bjc.6603030).

The results of this new study, *Enzymes and Receptors of Prostaglandin Pathways with Arachidonic Acid-derived Versus Eicosapentaenoic Acid-derived Substrates and Products* are due to be published on August 3. NutraIngredients.com has not yet seen the full report.

Researchers hope the findings could also help in designing new anti-inflammatory drugs with fewer side effects than the ones currently available

The new study has been ranked "Paper of the Week" by the journal's editors, which means it has been judged by journal authors to be of significant importance.

Researchers looked at the mutual effects of both oils by changing their respective amounts in cultured cells.

They found a relative increase in fish oil lowered the amount of prostanoids from vegetable oil.

Both fish and vegetable oils are converted into prostanoids through chemical reactions that are aided by enzymes called cyclo-oxygenases (COX), two types of which - COX-1 and COX-2 - are involved in the reactions.

Prostanoids, when produced in excess, increase inflammation in various tissues and organs.

Researchers wrote: "*Dietary fish oil containing omega-3 highly unsaturated fatty acids has cardioprotective and [anti-inflammatory](#) effects.*"

"Prostaglandins (PGs) and thromboxanes are produced in vivo both from the omega-6 fatty acid arachidonic acid (AA) and the omega-3 fatty acid eicosapentaenoic acid (EPA).

"Certain beneficial effects of fish oil may result from altered PG metabolism resulting from increases in the EPA/AA ratios of precursor phospholipids."

The in vitro study found that an increase fatty acid high in EPA had a greater effect on inhibiting the creation of prostanoids from omega-6 in the COX-1 enzyme.

This study adds further weight for other potential uses for omega-3. Studies have also shown the fatty acid has the ability to protect against the development of retinopathy, and ease symptoms associated with Alzheimer's disease.

According to the latest Frost and Sullivan figures the European omega-3 market was worth around €160m (£108m) in 2004 - and is expected to grow at around 8 per cent a year until 2010.