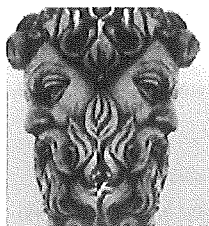


The Janus Corner

Looking Back



Looking Forward

This occasional section within the journal surveys visions and achievements, often not on the main track of the developing biomedical sciences, but all relating to discoveries and developments of medicinals – both ancient and modern.

What they have in common, in one way or another, is providing further background and glances around the edges of the core discipline of pharmacognosy, as it has been and continues to evolve within our times.

Ginger May Assist in the Prevention of Colon Cancer

I.E.Cock^{ab*}

^aBiomolecular and Physical Sciences, Nathan Campus, Griffith University, 170 Kessels Rd, Nathan, Brisbane, Queensland 4111, Australia.

^bEnvironmental Futures Centre, Nathan Campus, Griffith University, 170 Kessels Rd, Nathan, Brisbane, Queensland 4111, Australia.

A recent study published in Cancer Prevention Research has highlighted the potential of ginger (*Zingiber officinale*) in the prevention of colorectal cancer.^[1] It was reported that ginger root extract inhibited the enzyme cyclooxygenase (COX) which is involved in the production of inflammatory eicosanoids, and particularly of prostaglandin E₂ (PGE₂). This is a significant finding as previous studies have linked the up-regulation of PGE₂ with the events associated with the early development of colorectal cancer.^[2] It has previously been shown that ginger extracts can down-regulate COX in cultured cell lines^[3] and has also been linked to lowering the incidence of colon cancer in rats.^[4] The recent Cancer Prevention Research study tested the effects of a daily dose of ginger extract on the levels of PGE₂ and other important eicosanoid biomarkers in healthy human volunteers as an indicator of cancer prevention. A significant decrease in the levels of PGE₂ and 5-HETE, as well as a trend towards significant decreases in 12-HETE and 15-HETE were observed when normalised to free arachidonic acid. The authors

conclude that ginger extract may decrease eicosanoid levels in colorectal cells by inhibiting their synthesis from arachidonic acid and may therefore be beneficial for individuals with a high risk of colorectal cancer. Further research is warranted.

REFERENCES

1. Zicki SM, Turgeon DK, Vareed SK, Ruffin MT, Litzinger AJ, Wright BD, Alrawi S, Normolle DP, Djuriz Z, Brenner DE. Phase II study of the effects of ginger root extract on eicosanoids in colon mucosa in people at normal risk for colorectal cancer. *Cancer Prevention Research* 2011; 4(11) (epub ahead of print):1-9.
2. Castellone MD, Teramoto H, Williams BO, Druey KM, Gutkind JS. Prostaglandin E2 promotes colon cancer cell growth through a Gs-axin-beta-catenin signalling axis. *Science* 2005; 310 (5753):1504-1510.
3. Tjendraputra E, Tran VH, Liu-Brennan D, Roufogalis BD, Duke CC. Effects of ginger constituents and synthetic analogues on cyclooxygenase-2 enzyme in intact cells. *Bioorganic Chemistry* 2001; 29:156-163.
4. Manju V, Nalini N. Chemopreventative efficacy of ginger, a naturally occurring anticarcinogen during the initiation, post-initiation stages of 1,2 dimethylhydrazine induced colon cancer. *Clinica Chimica Acta* 2005; 358:60-67.

*Correspondence:

Tel.: +61 7 37357637; fax: +61 7 37355282

E-mail address: editor@phcogcommn.org,

I.Cock@griffith.edu.au

DOI: 10.5530/pc.2012.2.13