



Anticancer effects of saponin and saponin–phospholipid complex of *Panax notoginseng* grown in Vietnam

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Abstract:

Objective: To evaluate the antitumor activity both in vitro and in vivo of saponin phospholipid complex of *Panax notoginseng*.

Methods: The in vitro cytotoxic effect of saponins extract and saponin–phospholipid

complex against human lung cancer NCI-H460 and breast cancer cell lines BT474 was examined using MTS assay. For in vivo evaluation of antitumor potential, saponin and saponin–phospholipid complex were administered orally in rats induced mammary carcinogenesis by 7,12-dimethylbenz(a)anthracene, for 30 days.

Results: Our data showed that saponin–phospholipid complex had stronger anticancer effect compared to saponin extract. The IC₅₀ values of saponin phospholipid complex and saponin extract for NCI-H460 cell lines were 28.47 mg/mL and 47.97 mg/mL, respectively and these values for BT474 cells were 53.18 mg/mL and 86.24 mg/mL, respectively. In vivo experiments, administration of saponin, saponin–phospholipid complex and paclitaxel (positive control) effectively suppressed 7,12-dimethylbenz(a)anthracene-induced breast cancer evidenced by a decrease in tumor volume, the reduction of lipid peroxidation level and increase in the body weight, and elevated the enzymatic antioxidant activities of superoxide dismutase, catalase, glutathione peroxidase in rat breast tissue.

Conclusions: Our study suggests that saponin extract from *Panax notoginseng* and

saponin–phospholipid complex have potential to prevent cancer, especially breast cancer.

Biography:

Thu Dang Kim is a PHD researcher in Pharmacology at Department of Pharmacology and Clinical Pharmacy, School of Medicine and Pharmacy, Vietnam National University, Hanoi, Vietnam and his expertise in solving complex cases related to Pharmacology. His recent projects focus about study different STR Markers in different populations and how can use these markers in Clinical



Pharmacy. He considers the first scientist who studied these types of autosomal loci in Arab World. He was invited from different universities to present lectures about these oxidative stress and host T cell response: cementing the dominance.

Recent Publications:

1. American Cancer Society. Breast cancer facts and figures 2013- 2014. Atlanta: American Cancer Society; 2013. [Online] Available from: [Accessed on 20th December, 2015]
2. Nourazarian AR, Kangari P, Salmaninejad A. Roles of oxidative stress in the development and progression of breast cancer. *Asian Pac J Cancer Prev* 2014; 15: 4745-51.
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4. Vadodkar AS, Suman S, Lakshmanaswamy R, Damodaran C. Chemoprevention of breast cancer by dietary compounds. *Anticancer Agents Med Chem* 2012; 12: 1185-202.
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