

Thesis Title	Effects of Vitamin E on the Development of Cholangiocarcinoma Induced by Combined Nitrite and Aminopyrine
Name	Pakasit Pratoomtone
Degree	Master of Science (Pathobiology)
Thesis Supervisory Committee	Witaya Thamavit, D.V.M., M.S. Somnate Boonpucknavig, M.D. Galayanee Duongchawee, M.S.
Date of Graduation	11 August B.E. 2538 (1995)

ABSTRACT

Many nitrosamines are potent carcinogens in more than 40 animals including subhuman primates and possibly in man. They are present in foods, foodstuffs, beer and other beverages, tobacco and tobacco smoke, cosmetics, drugs, pesticides, rubber products, rubber industry, leather industry, etc. There are numerous reports showing that cancer can be induced by endogenous nitrosation from the reaction between nitrite and susceptible amine in the stomach. However, endogenous nitrosation can be blocked by vitamin E which reduces nitrite to nitric oxide and hence make it unavailable for the formation of nitrosamine. Those experiments on inhibitory effect of vitamin E were done in short term. This experiment studied on inhibitory effect of vitamin E in long term imitating the real situation in human by using Syrian golden hamsters. The experiments were carried out in 2 patterns.

In the first experiment, the hamsters were divided into 3 groups and treated as following :

1. 0.05 % nitrite + 0.05 % aminopyrine + 1 % vitamin E
2. 0.05 % nitrite + 0.05 % aminopyrine + 0.5 % vitamin E
3. 0.05 % nitrite + 0.05 % aminopyrine

The second experiment, the hamsters were divided into 3 groups and treated as following :

1. 0.025 % nitrite + 0.025 % aminopyrine + 1 % vitamin E
2. 0.025 % nitrite + 0.025 % aminopyrine + 0.5 % vitamin E
3. 0.025 % nitrite + 0.025 % aminopyrine

The result of the first experiment showed that 1. % vitamin E significantly inhibited the incidence of precancerous and cancerous lesions of primary hepatic cancer. Whereas 0.5 % vitamin E also decreased the incidence of the lesions but the reduction of incidence was not significant.

In the second experiment, there was no significant difference in the incidence of those lesions among 3 groups. It was possible that the low doses of nitrite and aminopyrine were inadequate to produce dimethylnitrosamines inducing such hepatic precancerous and cancerous lesions.