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NATTINEE JITNARIN: NUTRITIVE EVALUATION AND MUTAGENIC
MODIFICATION ACTIVITY OF DIETARY SEAWEEDS. THESIS ADVISORS :
CHANIPHUN BUTRYEE M.Sc., KAEW KANGSADALAMPAI, Ph.D.,
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This study a: made to determine: 1.) the nutritional value of, and 2.) the mutagenic modification activity of dietary seaweeds.

Some dietary seaweeds had possible antimutagenic activities probably associated with antitumor activity. Red seaweed, *Porphyra* spp., is sold in Thailand as seasoned and non-seasoned seaweeds, commonly used as healthy snacks or as an ingredient added to soup. Their potential health benefits in terms of nutritive value, iodine content and antimutagenic activities were evaluated. Nutritive value and iodine content of 6 seasoned seaweeds and 1 non-seasoned seaweed were determined according to AOAC and Moxon & Dixon method, respectively. The results, expressed per 100g dry seaweed, showed the following values: moisture content, 2.9-8.9 g; ashes, 9.5-13.2 g; protein, 10.4-39.9 g; fat, 1.7-3.3 g; carbohydrate, 43.0-74.3 g; dietary fiber, 29.2-41.4 g and iodine, 679-3617 µg. The highest values of protein, dietary fiber and iodine were in non-seasoned seaweed and it interestingly can be consumed as a source of iodine and fiber in one serving.

Antimutagenic effects of acetone, chloroform, methanol-chloroform (1:1), ether and hot water extracts of seaweed on the mutagenicity of nitrite treated- aminopyrene in gastric-like condition, were studied using *salmonella typhimurium* strains TA98 and TA100 in the absence of metabolic activation. The results demonstrated that acetone and chloroform extracts showed relatively strong suppressive activities for aminopyrene-nitrite model in both bacterial strains. For ether extract, the strong inhibitory activity to this model responded to TA98 whereas the weakly inhibition or no inhibition responded to TA100. The antimutagenic activity of methanol-chloroform (1:1) extracts to this model was different. This may be due to different ingredients in seasoned seaweed. On the other hand, no inhibitory effect occurred in hot water extracts in this model. However, these results suggested that *Porphyra* spp. has possible antimutagenic activities to nitrite treated 1-aminopyrene in Ames test.