

3936161 NUFT/M: MAJOR: FOOD AND NUTRITIONAL TOXICOLOGY;

M.Sc. (FOOD AND NUTRITIONAL TOXICOLOGY)

KEY WORDS : ANTIMUTAGENICITY/URETHANE/SOYBEAN
PRODUCT/SMART

CHATKAEW SOPA: ANTIMUTAGENICITY OF URETHANE BY SOYMILK, SOY-YOGURT AND TOFU IN SOMATIC MUTATION AND RECOMBINATION TEST. THESIS ADVISORS: KAEW KANGSADALAMPAI, Ph.D., SOMSRI CHAROENKIATKUL, D.Sc., ORANONG KANGSADALAMPAI, Ph.D. 100 P. ISBN 947-664-655-9.

Soybean known for its protein content is being recognized as having potential roles in the prevention and treatment of chronic diseases, most notably cancers and heart disease. Studies on possible inhibitory effects of soymilk, soy-yogurt, and tofu against mutagenicity of any genotoxins are required to support such hypothesis. The method used in this study was SMART. Three-day old trans-heterozygous *Drosophila* larvae obtained from the virgin *ORR;flr3* females and *mwh* males were transferred to test tubes containing a soybean sample and urethane (URE) for simultaneous feeding study, while in the prefed study, the virgin females and males were mated on a medium containing sample to obtain three-day old larvae which were brought up on a regular medium containing URE. After metamorphosis, the adult flies bearing the marker trans-heterozygous (*mwh+/+flr3*) indicated with round wings were examined for the mutant wing spots. The frequencies of total spots from flies fed URE (2,200, 4,500, and 6,700 ppm) with tofu (2 g/tube), soymilk (2 ml/tube), and soy-yogurt (2 g/tube) were less than that of URE treated groups. Percent inhibitions of induced wing spots in prefed studies were lower than those of simultaneous administration studies. The inhibition calculated as percents reduction according to the concurrent running standard URE (2200 – 6700 ppm) in simultaneous administration studies of tofu, soymilk and soy-yogurt are 64-77 %, 67 – 79% and 43 – 71% respectively; while those of prefed studies are 8 – 73%, 46 – 66% and 31 – 48%, respectively. The data indicated that tofu, soymilk, and soy-yogurt decreased the mutagenicity induced by URE. However, all samples could not reduce the mutagenicity of URE to be the values of sample control groups.