

[P-34]

INVESTIGATION OF IN VITRO AND IN VIVO ESTROGENIC OR ANTIESTROGENIC ACTIVITY OF CYPERMETHRIN

Soon-Sun Kim¹, Gyu-Seek Rhee¹, Seung-Jun Kwack¹, Kyung-Hee Sohn¹, So-Hee Kim¹, Rhee-Da Lee¹, Sang-Mi An¹, Ki-Eun. Jeong², Yhun-Yhong Sheen², Bum-Soo Ahn³, Eui-Bae Jeung³ and Kui-Lea Park¹

¹National Institute of Toxicological Research, Korea Food and Drug Administration, Seoul

²College of Pharmacy, Ewha Womans University, Seoul, and and ³College of Veterinary Medicine, Chungbuk National University, Chung-Ju

In the present study, estrogenic or antiestrogenic activity of cypermethrin, a pyrethroid insecticide was investigated. We used immature rat uterotrophic assay, estrogen-responsive calbindin-D9k (CaBP-9k) gene expression assay and luciferase reporter gene assay for measure of estrogenic potential of cypermethrin. In the uterotrophic assay using 18-day old SD rats, subcutaneous treatment with cypermethrin (5 to 800 mg/kg) for 3 days had tendency to cause increases in absolute and relative uterine wet weights, but no significant effect relative to control. Northern blot analysis showed induction of uterine CaBP-9k mRNA expression in response to cypermethrin as well as E2 treatment at certain doses. Cypermethrin (1 pM to 1 uM) induced the luciferase activity at all doses used and this effect was statistically significant at 1 uM, the highest dose treated. These results indicate that cypermethrin shows estrogenic activity in vitro, but lacks estrogenicity in vivo.

Keyword : Cypermethrin, Immature rat uterotrophic assay, CaBP-9k gene expression assay, luciferase reporter gene assay