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Low dose effects of bisphenol A diglycidyl ether (BADGE) on the uterus and vagina of ovariectomized ICR mice

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Introduction:

We have reported that low dose bisphenol A bis(3-chloro-2-hydroxypropyl)-ether (BADGE・2HCL), which was detected from canned fish product food, may exert estrogenic effects on vagina of ovariectomized ICR mice in 3rd Japnese Society of Endocrine Disrupter Reasearch. However, it has not been investigated whether BADGE itself has estrogenic potential like BADGE・2HCl or not. The purpose of this experiment is to examine low dose effects of BADGE on the uterus and vagina of ovariectomized mice.

Materials and Methods:

BADGE was dissolved in DMSO and adminiserted to ovariectomized mice by s.c. injection using micro-syringe. Mice were given doses of 0 (DMSO), 0. 1, 1, 10, 100, 1000 μg BADGE/kg BW/day or 1 00 μg β-estradiol/kg BW/day (positive control), for 3 successive days. All mice were sacrificed on the next day of the last injection. The uterus and vagina were removed and weighed. These organs were fixed in buffered formalin and stained with H.E. or by immunohistochemistry.

Results:

There were no significant differences in the uterine weights of mice treated with BADGE in comparison with those of control (DMSO) mice. On the histological examination, although we reported that BADGE・2HCl induced high grade of the stratification/cornification of vaginal epithelium, BADGE did not induce the estrogenic effects on the uterus and vagina.

These results suggest that low dose of BADGE may not exert estrogenic effects on the uterus and vagina of ovariectomized ICR mice.