

Low dose effects of bisphenol A on the reproductive organs of suckling male mice

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Introduction

Bisphenol A (BPA) has been reported to exert estrogenic effects in vivo at high dosage. Recent reports suggest that humans are exposed to low dose BPA released from metal food cans, dental sealants or nursing bottles. Although vom Saal's group showed low dose (but not at high dose) fetal exposure resulted in prostatic enlargement in adult mice, reports on in vivo low dose effects are limited. We reported that increase in the uterine weight in suckling mice dosed 20 µg BPA/kgBW/day and increase in the testes weight in suckling rat dosed 0.8-500 µg BPA/kgBW/day for 21 day. (2nd and 3rd Japan Society of Endocrine Disrupter Research). In this study, low dose effects of BPA were examined on the male reproductive organs of the suckling male mice.

Materials and Methods

BPA was dissolved in DMSO and administered to male suckling mice by s.c. injection using a micro-syringe. Male mice were given doses of 0 (DMSO), 0.8, 4, 20, or 500 µg BPA/kgBW/day or 100 µg 17-β-estradiol (E2)/kg BW/day (positive control), 5 days /week from the 1 st day (birth day =0) to 21 St day after birth. All mice were sacrificed on the 22nd day. The testes and epididymides were removed. After the testes and epididymides were weighed, they were fixed in buffered formalin and stained with HE.

Results and Discussion

The body weights, testes and epididymides weights in BPA-treated groups were similar to those of control (DMSO) group. Histologically, obvious changes were not observed in testes and epididymides. In morphometric study of the testes, the diameter of seminiferous tubules and the number of seminiferous tubule with lumen formation were similar to those of the control. In this study, the obvious effect of low dose BPA on the reproductive organs of suckling male mice was not observed.