

哺乳期雌性ラットの生殖器系に及ぼす4-ヒドロキシベンゾフェノン低用量投与の影響

Low dose effects of 4-hydroxybenzophenone on the reproductive organs of suckling female rats

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【Introduction】 Benzophenone (BP) is used as an ultraviolet-absorbing agent. BP is enzymatically converted to 4-hydroxybenzophenone (HBP) in rat liver. Recently, we reported that administration of HBP (>100mg/kg, sc) increased uterine weight and thickness of vaginal epithelium in juvenile female rats (Arch Toxicol 2001). In this study, we examined low-dose effects of HBP on the reproductive organs of suckling female rats.

【Methods】 HBP was dissolved in DMSO and administered to female suckling Crj:CD(SD)IGS rats by sc injection using a microsyringe. Rats were given doses of 0 (DMSO; vehicle control), 0.01, 0.1, 1 and 10mg HBP/kg/day or 0.001mg 17 β -estradiol (E2; positive control)/kg/day from day 2 (day 1=birth day) to day 21. All the animals were sacrificed on day 22, and the uterus, vagina and ovaries were removed and weighed. These organs were fixed in buffered formalin, embedded in paraffin, sectioned and stained with HE or by immunohistochemistry (cytokeratin 10 and ER α).

【Results and Discussion】 *Body, uterine and ovarian weight:* There were no significant differences in the weights between vehicle control and all HBP treated groups. *Histological examination:* Microscopic observation showed no marked difference in the uterus, vagina and ovary of HBP treated groups in comparison with vehicle control group. In E2 treated group (positive control), although the body weights were not different from those of vehicle control group, increase in the uterine weight, decrease in the ovarian weight and stratification of vaginal epithelium were observed. In this study, the apparent xenoestrogenic activity of low-dose (0.01-10mg/kg) HBP on the uterus and vagina in suckling female rats was not observed.