meiotic spindle) if those oocytes were exposed in a wrong window of exposure.

ABSTRACTS

275. Calbindin-D9k Expression in GH3 Cells Is A Biomarker of Xenostrogenic Potential of Parabens. Thuy T.B. Vo and Eui-Bae Jeung. Chungbuk National University, Cheongju, Republic of Korea

The potential adverse effects of parabens were reported in both in vivo and in vitro systems, but the molecular mechanism(s) and long-term consequences of parabens exposure are largely unknown. In this study, we further examined the induction of an estrogen biomarker gene—calbindin-D9k (CabP9k) to investigate the estrogenic activity of parabens (methyl-, ethyl-, propyl-, isopropyl-, butyl-, and isobutylparabens) in the rat pituitary GH3 cell line. Following 24 h exposure, significant increases in CalbP9k transcript and protein were observed depending on the concentration and the linear length of the alkyl chain from methyl- to isobutylparaben. Conversely, in the context of treating with CalbP9k mRNA and protein in GH3 cell line. To better understand the mechanism(s) of CalbP9k induction by these endocrine disrupting compounds, we measured the levels of estrogen receptor (ERalpha) and progesterone receptor (PR) expression following parabens exposure. In the GH3 cells, a great increase in PR mRNA and protein was observed in a concentration-dependent manner after parabens treatment. Paraben-induced expression of CalbP9k was effectively blocked in the presence of antagonist of 17beta-estradiol (fluvestrant). To confirm whether progesterone receptor signaling is involved in parabens derived induction of CalB9k mRNA and protein, we treated GH3 cells with antagonist of progesterone receptor (mifepristone). Mifepristone-induced up-regulation of CalbP9k was completely reversed by mifepristone. Taken together, these results indicate that CalbP9k may be induced by parabens via the PR-involved pathway in addition to ERalpha pathway in GH3 cell line.

276. Potential Estrogenic Effect(s) of Parabens at the Neonatal Stage of an Immature Female Rat Mode. Kyung-Chal Choi and Eui-Bae Jeung. Chungbuk National University, Cheongju, Republic of Korea

This study was performed to examine the estrogenic effects of parabens on hormonal responsiveness and on the morphology of reproductive tissues during a critical developmental stage of female rats. Two hundred immature female Sprague-Dawley rats (n = 10/group) were orally treated with methyl-, ethyl-, propyl-, isopropyl-, butyl-, and isobutylparaben from postnatal day 21 to 40 in a dose-dependent manner based on their number of SCC measurements as young adults compared with daughters of the cows with 0 to 3 SCC measurements. SCC measurements > 200,000 (P < 0.001) with both ovary size and number of antral follicles. To determine if a chronic mammary infection during pregnancy of older cows (as predicted by a high number of SCC measurements) is associated with diminished size of the ovarian reserve and perhaps reduced reproductive performance (fertility and reproductive lifespan) in their daughters. Research supported by USDA-NRI 2004-01697, 2007-01289 to JJI.

277. The Endocrine Disruptor TCDD Modulates microRNA Expression in Preimplantation Mouse Embryos and Spermatids Attachment on Human Endometrial Epithelial Cells In Vitro. Kai-Fai Lee, Wei-Min Liu, Hilda Tsang, Tsz-Yan Cheung, Suranga P. Kodithuwakku, William S.B. Yeung, and Chris K.C. Wong. The University of Hong Kong, Hong Kong, China; Hong Kong Baptist University, Hong Kong, China; The Chinese University of Hong Kong, Hong Kong, China

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