[PA3-9] [04/18/2002 (Thr) 14:00 - 17:00 / Hall E]

Biomarkers in feral pigeon for screening endocrine disrupters

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Feral pigeons are among the most familiar birds to humans in most parts of the world. Also they have frequently served as a bioindicator species of human contamination of the cities. Pollutants of the cities are products of human activity and are importantly associated with events during breeding, wintering, commuting, feeding, and so forth of ferals. Amongst the pollutants, endocrine disrupters have been hot issue relating with possibility of human extinction. Therefore these reasons have led to searching available but sensitive biomarkers using appropriate bioindicator in cities such as feral pigeons.
In this study, pigeons were injected intramuscularly in the pectoral muscle with 17 beta-estradiol(E2) in the ratio of 20mg/kg for seven days. Organ (liver, heart, kidney, testis and uterus) to body weight index, total cholesterol level and HDL, LDL, VLDL portion change in serum, vitellogenine induction by E2 in male and female blood, and phagocytosis and NBT reduction ability of Sephadex induced peritoneal macrophage of pigeon were examined.
From the investigation, it was determined that most available but sensitive biomarker in feral pigeon was HDL and LDL portion change in total cholesterol, and organ (liver, testis and uterus) to body weight index was available biomarker as well. VLDL level and vitellogenine induction in blood are probably a good marker in Japanese quail as documented in publications, however they were not shown availability as biomarker in pigeon. Also phagocytosis and NBT reduction ability of macorphage were not suitable for using biomarker.

[PA3-10] [04/18/2002 (Thr) 14:00 - 17:00 / Hall E]

Effect of melatonin on DNA damage by gamma radiation in mouse splenic lymphocytes

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Melatonin, an endogenous compound secreted by the pineal gland in human brain has been reported to act as an antioxidant. The present study was performed to obtain the evidence of the radioprotective function of melatonin on radiation induced DNA damage in mouse spleen. Eight-week-old ICR male mice were irradiated with 6.5 Gy of γ-ray five days after oral administration or intraperitoneal injection of melatonin (250mg/kg body wt.) were sacrificed 3 days later to prepare splenic lymphocytes. The tail moment of DNA single-strand breaks in mouse splenic lymphocytes was evaluated by the Comet assay. Comet assay has been applied to the detection of DNA damage due to environmental toxic materials. In particular, this assay is a novel method to assess DNA single-strand breaks. The pretreatment of the melatonin reduced the tail moment in the comets compared with that of the irradiated control group. This result indicates that melatonin have a little protective effects on the radiation induced DNA damage of mouse splenic lymphocytes when assessed by the Comet assay.

[PA3-11] [04/18/2002 (Thr) 14:00 - 17:00 / Hall E]

Determination of organochlorine pesticides and PCB congeners in Korean human adipose tissue and liver

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