

Diesel exhaust is suspected to cause acute and chronic adverse effects on health. In recent, the effect of estrogenic endocrine disruptor in diesel particulate matter was little studied. Therefore, we examined the estrogenic activity of respirable diesel exhaust particulate matter derived from diesel engine motor. PM_{2.5} diesel exhaust of vehicle was collected using a high volume samples equipped with a cascade impactor. The crude extract was fractioned according to EPA recommended procedure into seven fraction by acid-base partitioning and silica gel column chromatography. The presence of estrogenic and antiestrogenic activity was determined using E-screen assay. The E-screen assay was developed to assess the estrogenicity of environmental chemicals using the proliferative effect of estrogens on their target cell as an end point. The results showed that weak estrogenic-like activities and strong antiestrogenic activities were detected in the crude organic acids fraction, crude extract and moderately polar fractions. Therefore, it was suggested that diesel particulate matter could affect to endocrine system in human and animals.

[PA3-18] [04/17/2003 (Thr) 14:00 – 17:00 / Hall P]

Inhibitory effect of bisphenol A on the mixed lymphocyte reaction and TNF- α production of antigen presenting cells in mice.

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We investigated the effects of bisphenol A (BPA), endocrine disruptor, on the mixed lymphocyte reaction and TNF- α production of antigen presenting cells in mice. Cells from mouse (C57BL/6) bone marrow were cultured with GM-CSF for 8 days and mature dendritic cells (DCs) were prepared. These DCs proliferation in response to Balb/c splenocytes was measured at 72 h of culture with BPA by tritiated thymidine incorporation ([³H]TdR) and [³H]TdR incorporation was determined by scintillation counting. An inhibitory effect was observed in cultures treated with BPA. To investigate the effect of BPA on LPS-induced cytokine production (TNF- α) in vivo and in vitro, serum cytokine levels were measured at 1h post LPS injection in BPA-administered mice, and the peritoneal macrophages collected from naive mice were cultured with BPA plus LPS in vitro. Thereafter, cytokine levels in the cultured supernatants were measured and compared with LPS alone-treated group. Treatment with BPA plus LPS in vivo resulted in decreased serum TNF- α level when compared to LPS alone group. Also, BPA exposure significantly decreased TNF- α production in BPA-LPS treated group compared to LPS alone in vitro. These results indicate that BPA might inhibit the activity of antigen presenting cells.

[PA3-19] [04/17/2003 (Thr) 14:00 – 17:00 / Hall P]

Action mechanism of estrogen potentials of Ginkgo biloba extracts and its major components in human breast cancer cell.

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The important biological activities of estrogen were reproduction and physiological processes in a number of tissues, including liver, bone, brain, blood vessels, adipose tissue and so on. The regulation of estrogen level is important a prevention of estrogen-related disease. Ginkgo biloba extracts (GBE) are extracted from leaves of the Ginkgo biloba tree. GBE contains 24% phytoestrogen, which are kaempferol, quercetin, and isorhamnetin. The goal of this study was to investigate the potencies of GBE and its major components(kaempferol, quercetin, isorhamnetin) for estrogenic effect, which can confirm the capacity as new HRP(Hormone replacement therapy). In the E-screen assay, GBE induced cell proliferation in ER-positive MCF-7 cell, but