via progesterone related mechanism.
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[PA4-21] [10/18/2002 (Fri) 09:30 - 12:30 / Hall C]

Estrogenic Activities of Pyrethroid Compounds in MCF-7 BUS cells

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Pyrethroids are extensively used as insecticide in agriculture and home. Several studies have reported that pyrethroids are relatively safe to humans and wildlife. However, some studies have suggested that pyrethroids possess estrogen-like activity. Thus, the purpose of this study was to investigate the effects of pyrethroid compounds on cell proliferation, and expression of ERs and pS2 using estrogen receptor positive human breast cancer cell line (MCF-7 BUS cells). Seven pyrethroids (bioallethrin, cypermethrin, deltamethrin, fenvalerate, permethrin, sumithrin, and tetramethrin) were tested with 17β-estradiol as a positive control. Among the pyrethroid compounds tested, only sumithrin increased the MCF-7 BUS cell proliferation in a dose-dependent manner, maximum induction of cell proliferation was observed at dose of 10^{-5}M. In ER expression, 17β-estradiol (10^{-10}M) decreased the level of cytosolic ERα and ERβ protein expression compared with the vehicle control, and sumithrin significantly decreased the expression of ERα and ERβ protein at high concentrations, $10^{-7} \sim 10^{-5}$M, in a dose-dependent manner. Similarly to 17β-estradiol, sumithrin dose-dependently increased pS2 mRNA expression. The other six test compounds used in the present study did not show any estrogenic effect at all concentrations (from 10^{-11} to 10^{-5}M). These findings suggest that sumithrin could be considered to induce weak estrogenic activity via ER related pathways.
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[PA4-22] [10/18/2002 (Fri) 09:30 - 12:30 / Hall C]

Down-regulation of inducible nitric oxide synthase and tumor necrosis factor-a expression by Bisphenol A via nuclear factor-kB inactivation in macrophages

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Bisphenol A [BPA, 2,2-bis(4-hydroxyphenyl)propane] is reported to have estrogenic activity; however, its influence on cytokine production or immune system function remains unclear. In this study, we investigated the effects of BPA on the production of nitric oxide (NO) and tumor necrosis factor-a (TNF-a), and on the level of inducible nitric oxide synthase (iNOS) and TNF-a gene expression in mouse macrophages. BPA alone did not affect NO or TNF-a production. In contrast, BPA inhibited lipopolysaccharide (LPS)-induced NO and TNF-a production, and the levels of iNOS and TNF-a mRNA in a dose-dependent manner. Treatment with ICI 182.780, an estrogen-receptor antagonist, inhibited the suppressive effects of BPA. Transient expression and electrophoretic mobility shift assays with NF-kB binding sites revealed that BPA reduced the levels of the LPS-induced NF-kB transcription factor complex. These results demonstrate that BPA may affect the regulation of the immune system function by reducing NO and TNF-a production via the inhibition of NF-kB transactivation mediated through the estradiol receptor.

[PA4-23] [10/18/2002 (Fri) 09:30 - 12:30 / Hall C]

Aluminium increase Iron uptake into Glial cells

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