

[P-22]**PAHs regulation of CYP1A gene in MCF-7 and ZR-75-1 human breast cancer cells.**Kim JY, Min KN, Sheen YY*College of pharmacy, Ewha Womans University*

INTRODUCTION: Recent industrial society has widely exposed to PAHs that are coming from the incomplete combustion of organic material as widespread environmental contaminants. Biological activities of PAHs are not known although PAHs are considered as carcinogens. The mechanism of action of PAHs has been studied extensively, however it is not clear how PAHs turn on CYP1A1 in human breast cancer cells. **MATERIALS and METHODS:** Our laboratory have been studied the effect of PAHs in the human breast cancer cell MCF-7 and ZR-75-1 as a new system to evaluate bioactivity of PAHs. We have been able to establish long term culture system of this cells then used for the study to the effect of 13 different PAHs and environmental samples. **RESULTS:** We demonstrate that PAHs induced the CYP1A1 promoter and 7-ethoxyresolufin O-deethylase (EROD) activity and RT-PCR analysis. Some PAHs induce CYP1A1 promoter and EROD in a concentration-dependant manner. Other PAHs and environmental sample slightly induce 1A1 promoter and EROD and mRNA level. **CONCLUSIONS :** PAHs significantly up-regulate the level of 1A1 promoter and EROD and CYP1A1 mRNA. Some of PAHs showed stronger stimulatory effect on CYP1 gene expression than TCDD. Apparently, ZR-75-1 cells have Aryl hydrocarbon receptors, therefore it would be good experimental tool to study the cross-talk between PAHs and steroid actions. [Supported by grant from the Ministry of Environment of Korea]