

【P-64】**Toxicoproteomics Study on 3-MCPD-induced Nephrotoxicity in rats**

Young Na Yum, Sheen Hee Kim, Myung Sil Hwang, Joo Hwan Kim, Ok Hee Kim,
Ki-Hwa Yang and Dae Hyun Cho

Department of Toxicological Research, NITR, KFDA, Seoul, Korea

3-Monochloropropane-1,2-diol(3'-MCPD) is a contaminant of acid-hydrolyzed vegetable proteins, malts and soy sauces. The toxicity of 3-MCPD were found to be as nephrotoxicity from the histological examination of the kidney which were kidney cortex tubular necrosis and proximal tubular degeneration in kidney tissues. The objective of this study is to find out toxicity related proteins and to understand the toxic mechanism in MCPD-induced nephrotoxicity. The kidney cortex region of SD rats which were administered with 3-MCPD(80mg/kg/day) by oral gavage, was separated by 2-dimensional electrophoresis with pH 3-10 NL IPG, and analysed by image-analysis. The proteins up- or down-regulated in 3-MCPD-induced toxicity were comparatively analysed, and were identified by MALDI-OF-MS. ATP synthase beta chain, dnaK-type molecular chaperone, hsc73, gro EL precursor, vimentin, tropomyosin isoform 6 were up-regulated, and pyruvate dehydrogenase (lipoamide) beta-chain, calbindin, ornithine aminotransferase were down-regulated in the MCPD-treated kidney cortex. These proteins may be involved in 3-MCPD-induced renal toxicity and may explain nephrotoxicity mechanism.

Keyword : 3-MCPD, nephrotoxicity, toxicoproteomics