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**Identification of Differentially Expressed Proteome regulated by Dioxin Using Two-Dimensional Electrophoresis in Rat Brain**

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Dioxin was well known as the endocrine disruptors, which increase the risk of cancer and induced reproductive dysfunction on humans and animals. Therefore, we performed two-dimensional electrophoresis analysis to screen the changed proteome by the injection of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) in Sprague-Dawley rat brain. From more than 600 protein spots detected on each 2-DE gel, we screened six proteins that were differentially expressed proteome in Sprague-Dawley rat brain. Of six proteins, three were identified as creatin kinase, glutathione S-transferase and apolipoprotein A-I, but other proteins were not identified even by the MALD-TOF and ESI-MS/MS analysis. In addition, we analyzed the gene expression of cytochrome P-450 (CYP) 1A induced by the exposure of TCDD with reverse transcriptase (RT)-PCR because CYP1A gene was well known as the gene induced by the treatment of dioxin. These results may provide us interesting things with the change of biochemical and molecular mechanism in brain proteome to dioxin.

**Keyword:** Dioxin, Brain proteome, 2-DE