Application of Protein Chip for the Measurement of Intracellular Proteins in HepG2 Cancer Cell

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Abstract

Protein array technology is currently in a state of early development and further progress and refinements are needed before larger data sets will be produced by such means [1]. Various applications of protein chip have been reported for their feasibility tests [2]. In this study, to investigate the cytotoxic effect of ochratoxin A on the cell cycle arrest and the protein expression of HepG2 (hepatocellular carcinoma cell line), cell cycle analysis was carried out with flow cytometry and the expression pattern was analyzed with Western blotting. The intracellular protein expression pattern was identified and utilized as a basis for protein chip application. Protein chip for the detection of target proteins was constructed on the basis of micro-contact printing (uCP) method. The cell cycle content was analyzed by BD FACSalibur and CellQuest™ program (Becton Dickinson, San Diego, CA, USA). Experimental results showed that the expression level of target proteins in HepG2 were changed with respect to ochratoxin A dosage, which was confirmed by Western blotting and ELISA. The proposed protein array is expect to successfully carry out these analytical procedure on chip.

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References

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