Electrochemical detection of effects of environmental pollutants on differentiated neural cancer cells

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In this study, we fabracated cell chip to detect the effects of bisphenol A (BPA) on neural cancer cell. PC12 cells were treated with nerve growth factor and then, cyclic voltammetry (CV) was performed to detect the cytotoxicity of BPA. The intensity of redox signals of undifferentiated PC12 cells was stronger than differentiated PC12 cells. Finally, differentiated PC12 cells were treated with various concentrations of BPA on chip during 24hr before the CV. We found that the intensity of reduction peak in voltammogram decreased with inceasing concentration of BPA which was equivalent to the results of MTT assay. Therefore, the proposed cell chip capable of assessing cytotoxicity of many toxicants on various neural cells can be applied in wide fields.

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