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第三十屆生物醫學聯合學術年會 投稿摘要表格 (正本)

The Effects of Anti-epileptic Valproic Acid on Cell Viability in Human Malignant SH-SY5Y Neuroblastoma Cells

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In recent decades, several lines of drug repurposing strategies which means using clinical applied drugs in totally different fields. With the evidence that the anti-epileptic drug valproic acid (VPA) has been tested in various cancer cell lines including BT4C, BT4Cn, U87MG, N2a, PC12-E2, CSML0, CSML100, HeLa, L929, Swiss 3T3, showing its cell type specific anticancer potential, we aimed at investigating the efficacy of VPA as an anti-neuroblastoma drug. The cytotoxicity of VPA on SH-SY5Y neuroblastoma cells was evaluated by MTT assay. The VPA-induced cell programmed death will be measured by PI/Annexin V double staining after flow cytometry analysis with the typical apoptosis index sub G1. As for the detail mechanisms, mitochondrial membrane potential, endoplasmic reticulum stress, oxidative status were measured together with the expression levels of signaling molecules such as caspases, MEK/ERK and cytochrome c, *etc.* the pilot experiments showed that when used alone, 24-h treatment of 1.6 and 3.2 mM VPA induced 6.2% and 13.3% decreased of cell viability, respectively, similar to the levels of responsible sub G1 induction (7.4% and 15.0%, respectively). The morphologic alteration of SH-SY5Y cells was obvious from the dosage of 0.8 mM. In the near future, the repeated treatment of VPA and the combinative effects of radiation with VPA treatment will be examined, and after the optimization of conditions, the detail molecular mechanisms will be revealed.

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