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[Studies on the target cells and molecules with sodium valproate induced differential of human glioma cells.]

[Article in Chinese]

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OBJECTIVE: To investigate the target cells and molecules with sodium valproate induced differentiation of human glioma cells. METHODS: Nude mice bearing human glioma xenogenic graft subcutaneously were treated with sodium valproate. The expressions of HDAC1 and Tob genes of xenografts were analyzed with semiquantitative RT-PCR. The CD133(+) cells (BTSCs) were isolated from glioma specimens by immunomagnetic sorting, and cultured in the medium containing FCS or in the serum-free medium supplemented with growth factors, respectively, followed by treatment with sodium valproate in vitro for 21 days. The cell surface markers were detected with flow cytometry and confocal microscopy. RESULTS: Sodium valproate inhibited the growth of subcutaneous xenografts bearing on nude mice (P < 0.05), and up-regulated the HDAC1 expression (P < 0.01), down-regulated the Tob expression (P < 0.05). The cell surface markers of BTSCs were detected by flow cytometry after sodium valproate treatment for 21 days. In the FCS group, the GFAP or beta-tubulin III positive cells increased significantly (P < 0.01), but in the growth factor group, no statistical differences were observed in the GFAP or beta-tubulin III expression (P > 0.05). The results of confocal microscopy indicated that the GFAP(+) or beta-tubulin III(+) cells coexpressed with Nestin. CONCLUSIONS: HDAC1 and Tob genes were the potential target molecules in reversion of the differential inhibition of human glioma cells with sodium valproate. The BTSCs undergoing the processes of differentiation were the target cells for sodium valproate.

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