Câncer de ovário encontra-se aumento da expressão da GSK-3beta (glicogênio sintase kinase-3beta) e sua inibição provoca diminuição da proliferação mitótica

Lembrar que os sais de lítio inibem a GSK-3beta. JFJ

Glycogen synthase kinase-3beta (GSK-3beta) promotes proliferation of ovarian cancer cells in vitro

[Article in Chinese]
Department of Gynecology, Obstetrics and Gynecology Hospital of Fudan University, Shanghai 200011, China.

Abstract

OBJECTIVE: To investigate the effect of glycogen synthase kinase-3beta (GSK-3beta) on the proliferation of human ovarian cancer cells. METHODS: Two human ovarian cancer cell lines SKOV3 and ES-2 were analysed for the expression of GSK-3beta and phosphorylated GSK-3beta (pGSK-3beta) by Western blot analysis. Cell growth curve analysis done by cell count was used to investigate the effect of GSK-3beta inhibitors on the growth of SKOV3 and ES-2 cells. Four plasmids, namely, GSK-3betaS9A, GID5-6, GID5-6LP and the control vector, were cotransfected respectively with the green fluorescent protein (GFP) into SKOV3 cells by electroporation, and then BrdU incorporation assay was adopted to analyse the role of GSK-3beta activity in the proliferation of ovarian cancer cells. After transfection, G418 was added to the medium to select those stably transfected cells, which were used to investigate the long term effect of GSK-3beta activity change on the proliferation of ovarian cancer cells by colony formation assay. RESULTS: Both SKOV3 and ES-2 cells expressed GSK-3beta, though the expression level of pGSK-3beta was lower in SKOV3 than in ES-2 cells. GSK-3beta inhibitors attenuated the growth of SKOV3 and ES-2 cells. Transfection with GSK-3betaS9A to upregulate the GSK-3beta activity resulted in the increase of BrdU incorporation in SKOV3 cells compared with that in the control vector. On the contrary, transfection with GID5-6 to downregulate GSK-3beta activity decreased the BrdU incorporation in SKOV3 cells, compared with that in GID5-6LP, which is a control vector of GID5-6. Stable transfection with GSK-3betaS9A increased the colony number while stable transfection with GID5-6 decreased the colony number, compared with each control vector. CONCLUSION: GSK-3beta can promote the proliferation of ovarian cancer cells. Inhibition of GSK-3 p may become a potential therapeutic

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