STUDY ON RNA INTERFERENCE TARGETING HMSH2 INDUCES THE REVERSAL CHEMO-RESISTANCE OF OVARIAN CARCINOMA CELL LINE OC3/TAX300

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Objective: To investigate the reversal effect of hMSH2 siRNA on chemo-resistance of ovarian carcinoma cell line OC3/TAX300, explore the clinical significance.

Methods: The proper hMSH2 siRNA was designed, synthesized and transfected into ovarian carcinoma cell line OC3/TAX300, The expression levels of hMSH2 was detected by RT-PCR and Western blotting, The cell proliferation was detected by MTT method, the apoptosis was analyzed by flow cytometry. Morphological changes and ultramicrostructure of cells were observed with transmission electron microscope.

Results: The protein and mRNA levels of hMSH2 in OC3/TAX300 cells were decreased significantly after siRNA transfection. The siRNA-hMSH2*1 had the best RNA interference effect. Compared with the non-infected group and the negative control group, the cell proliferation was effectively inhibited. The sensitivity of OC3/TAX300 cells to taxol was significantly increased. The cell cycle was arrested at G2/M phase, the apoptotic rate was significantly increased (P <0.05). The experimental group was found to have more visible cell shrinkage, more serious chromatin margination, nucleus condensation, fragmentation and apoptotic body formation, nucleolus disappeared, markedly swollen mitochondria, mitochondrial cristae disappeared and other signs of apoptosis; In the control group and blank group, the nucleus was located in the cells of the central and nucleolus is clear, only mild chromatin pyknosis and marginalized, mild swelling of mitochondria. Conclusion: siRNA targeting hMSH2 may reverse the chemo-resistance of ovarian carcinoma cell line OC3/TAX300 and may become a treatment or a new direction in the adjuvant therapy of ovarian cancer.