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Down-regulation of GRP78 Enhances Chemotherapy Sensitivity to VP-16 in Lung Adenocarcinoma

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摘要

Background and objective GRP78, a member of GRPs, plays a critical role in chemotherapy resistance in some cancers. To investigate the relationship between the expression of GRP78 and resistance to anti-cancer drug VP-16 in vitro in lung adenocarcinoma SPCA-1 cell line. Methods SPCA-1 cells were divided into three groups: BAPTA-AM-treated group, A23187-treated group and the control group. RT-PCR and immunofluorescence were used to analyze the expression of GRP78 at both mRNA and protein levels, respectively. Cell apoptosis was analyzed by flow cytometry in order to evaluate the therapeutic sensitivity to VP-16. Results The expression of GRP78 at both protein and mRNA levels in the BAPTA-AM-treated cells dramatically decreased as compared to that of both A23187-treated and control groups. After treatment by VP-16, the percentages of apoptotic cells were 10.84±0.86, 6.85±0.20, 4.95±0.19 in BAPTA-M-treated group, the control group and A23187-treated group, respectively. Conclusion BAPTA-AM is highly effective in the inhibition of GRP78, down-regulation of GRP78 can significantly increase the sensitivity of adenocacinoma lung cancer to VP-16. All these suggest that inhibition of the expression of GRP78 by chemicals such as BAPTA-AM or anti-sense RNA may be a new therapeutic strategies to lung cancer.

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