

Expression and Significance of Nrf2 and Its Target Genes in Pulmonary Adenocarcinoma A549 Cells Resistant to Cisplatin

Kairu ZHANG, Huiqin YAN, Yan WANG, Li MA, Qinghua ZHOU

摘要






Background and objective Nuclear factor erythroid-2 related factor 2 (Nrf2) is a key transcription factor in oxidation-reduction reaction. It has been proved that Nrf2 is relevant to cisplatin-resistance in ovarian cancer cells. Up to now, little is know whether Nrf2 and it' s signal pathways play an important role in cisplatin-resistance in pulmonary adenocarcinoma cells or not. The aim of this study is to explore the expression levels of transcription factor Nrf2 and its target genes in A549 cells which are resistance to cisplatin and reveal the mechanism behind it. Methods A549/DDP and A549 were cultured in vitro. MTT was used to detect the drug resistance index of A549/DDP cells. Real-time PCR was used to evaluate the expression of transcription factor Nrf2 and its target genes mRNA. Results The drug resistance index of A549/DDP was 12.12, and its Keap1, Nrf2, NQO1, GSTP1, GCL, HO-1, MRP4 mRNA expressions were all significantly increased compared with A549 (P < 0.01). On the other hand, MRP1, MRP2, MRP3 showd the crosscurrent (P < 0.01). Conclusion It proves that the transcription factor Nrf2 and it' s signal pathways are closely related with drug resistance of tumors. Moreover, this provides a new direction to reverse drug resistance and have significance to avoid and overcome drug resistance of tumor.

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ABOUT THE AUTHORS

Kairu ZHANG

Huiqin YAN

Yan WANG

Li MA

Qinghua ZHOU

