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## DNA损伤修复蛋白XPF影响肾癌细胞顺铂耐药(PDF)分

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Title: DNA repair protein XPF affects cisplatin resistance of renal cancer cells

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关键词: [肾癌](#); [顺铂](#); [XPF](#); [细胞衰老](#)

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摘要: 目的 探索DNA损伤修复蛋白XPF表达水平影响肾癌细胞顺铂耐药的作用与机制。方法 Western blot法检测不同肾癌细胞株的XPF蛋白水平; 采用shRNA干扰技术, 筛选稳定低表达XPF的细胞株; 采用克隆形成实验及细胞凋亡检测实验, 比较XPF低表达细胞株与XPF正常表达细胞株的顺铂敏感性; 通过 $\beta$ -半乳糖苷酶染色法, 检测细胞的衰老程度。结果 在肾癌细胞786-0、ACHN和Caki-1中, ACHN细胞的XPF表达水平最高, 其顺铂耐药程度也最高。shRNA干扰获得稳定低表达XPF的ACHN细胞, 顺铂处理后, 其克隆形成率低于对照( $P<0.05$ ), 细胞凋亡率高于对照, 衰老细胞比例也显著高于对照( $P<0.01$ )。结论 肾癌化疗不敏感可能与其高表达DNA损伤修复蛋白XPF有关, 干预并下调肾癌ACHN细胞XPF表达, 可增强顺铂的凋亡诱导效应并加速衰老, 从而提高其顺铂敏感性。

Abstract: Objective To investigate the role and the underlying mechanism of the expression of DNA damage repair protein XPF in cisplatin resistance of renal cancer cells. Methods XPF level in different renal cancer cell lines ACHN, 786-0 and Caki-1 was detected by Western blotting. After acquiring shXPF cells with XPF expression stably inhibited to a low level by shRNA technique, cisplatin resistance was detected in the shXPF cells and shNC cells (negative control) by colony formation assay and Annexin V-FITC/PI staining.  $\beta$ -galactosidase staining was used to detect cell senescence of shXPF cells. Results Among 786-0 cells,

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ACHN cells and Caki-1 cells, XPF was strongly expressed in ACHN cells, which showed highest resistance to cisplatin. After interfered by shRNA technique, ACHN-shXPF cells were acquired stably expressing lower level XPF, showing lower colony formation rate ( $P<0.05$ ) and higher percentage of apoptosis after cisplatin treatment. Additionally, the percentage of senescent cells was significantly higher in ACHN-shXPF than ACHN-shNC cells ( $P<0.01$ ). Conclusion The insensitivity of renal cancer cells to cisplatin might be related with the high expression of DNA damage repair protein XPF. Interfering the XPF expression in ACHN cells can promote cisplatin-induced apoptosis and cell aging, thus leading to higher sensitivity to cisplatin.

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