CJLC 中国肺癌杂志 Chinese Journal of Lung Cancer
pISSN 1009-3419
eISSN 1999-6187
CN 12-1395/R

Screening the Drug Sensitivity Genes Related to GEM and CDDP in the Lung Cancer Cell-lines

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摘要

Background and objective Screening of small-cell lung cancer (SCLC) and non-small cell lung cancer (NSCLC) cell lines with gemcitabine hydrochloride (GEM) and cisplatin (CDDP) related to drug sensitivity gene might clarify the action mechanism of anti-cancer drugs and provide a new clue for overcoming drug resistance and the development of new anti-cancer drugs, and also provide theoretical basis for the clinical treatment of individual. Methods The drug sensitivity of CDDP and GEM in 4 SCLC cell lines and 6 NSCLC cell lines was determined using MTT colorimetric assay, while the cDNA macroarray was applied to detect the gene expression state related to drug sensitivity of 10 lung cancer cell line in 1 291, and the correlation between the two was analysized. Results There were 6 genes showing significant positive correlation (r?0.632, P < 0.05) with GEM sensitivity; 45 genes positively related to CDDP; another 41 genes related to both GEM and CDDP (r?± 0.4). Lung cancer with GEM and CDDP sensitivity of two types of drugs significantly related genes were Metallothinein (Signal transduction molecules), Cathepsin B (Organization protease B) and TIMP1 (Growth factor); the GEM, CDDP sensitivity associated genes of lung cancer cell lines mainly distributed in Metallothinein, Cathepsin B, growth factor TIMP1 categories. Conclusion There existed drug-related sensitive genes of GEM, CDDP in SCLC and NSCLC cell lines; of these genes, Metallothinein, Cathepsin B and TIMP1 genes presented a significant positive correlation with GEM drug sensitivity, a significant negative correlation with CDDP drug sensitivity.

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