






The variation of intracellular distribution and translocation of the protein kinase C α among human lung cancer cell line with different metastasis potential

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摘要

Background and objective Protein Kinase C (PKC) is one of the key kinases in the cell signal transduction passway. There are more reports about it's ability on cell proliferation, but fewer on invasion and metastasis in the past; and it's mechanisms are unclear. The aim of this study is to analyze the variation of intracellular distribution and translocation of the protein kinase C α among human high-metastatic large cell lung cancer cell line with different metastasis potential? in order to investigate the correlation between the lung carcinoma invasion and metastasis and the PKC isoforms. **Methods** Using Western blot and laser scanning confocal microscope (LSCM) method. The distribution of PKC α in cytosol and plasma membrane and translocation were detected among different metastatic potential human pulmonary carcinoma cells L9981, L9981-pLXSN and L9981-nm23-H1 before and after treatment with PKC inhibitor Calphostin C, by Western blot and LSCM. **Results** PKC α in L9981 and L9981- pLXSN was mainly expressed on membrane, which was remarkably higher than those in L9981-nm23-H1 cell line ($P=0.001$); while expression of PKC α in cytosol in L9981 and L9981-pLXSN cell lines, was lower than those in L9981-nm23-H1 cell line ($P<0.001$). The expression of PKC α in cytosol in L9981-nm23-H1 cell line was remarkably higher than those in L9981 and L9981-pLXSN cell lines ($P<0.001$), while expression of PKC α in plasma membrane in L9981-nm23-H1 cell line, was significantly lower than those in L9981 and L9981- pLXSN cell lines ($P=0.001$). PKC α is mainly located in nucleus and perinucleus in L9981 and L9981-pLXSN cells, which was in active status, In L9981-nm23-H1 cell line, PKC α is mainly located in soluble cytosolic section, which was in inactive status. After treated with PKC inhibitor Calphostin C, the expression of PKC α in membrane in L9981, L9981-pLXSN and L9981-nm23-H1 was downregulated, and PKC α were observed mainly located in cytosolic site in all the three cell lines, which was mainly in inactive status. **Conclusion** The study

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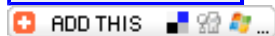
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suggests that PKC isoforms is closely correlated with human lung cancer invasion and metastasis.

关键词

Protein Kinase C; Lung neoplasms; Protein translocation; Cell line

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