A study on effects of cisplatin and its mechanisms on human lung adenocarcinoma SLC-89 cells  

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Abstract Objective To investigate the effects of cisplatin on proliferation | telomerase activity | cell cycle | p53 | bcl-2 and proliferating cell nuclear antigen | PCNA expressions of human lung adenocarcinoma SLC-89 cells induced by cisplatin and to find out the possible mechanisms. Methods SLC-89 cells were treated with cisplatin of different concentrations for 72 h. Then the proliferation of the cells was measured by MTT method | telomerase activity was measured by telomeric repeat amplification protocol with ELISA | TRAP-ELISA | cell cycle | p53 | bcl-2 and PCNA expressions of the cells were detected by flow cytometry | FCM respectively. Results Cisplatin could obviously inhibit the proliferation of the cells and IC50 value for cisplatin treatment was 18.47 mg/L. Cisplatin could obviously down-regulate telomerase activity | decrease S phase cells | increase G0/G1 phase cells | decline the expressions of bcl-2 and PCNA proteins and induce the expression of p53 protein of SLC-89 cells in a concentration-dependent fashion. Conclusion Cisplatin can obviously inhibit the proliferation of SLC-89 | change the distribution of cell cycle | decline telomerase activity and expressions of bcl-2 and PCNA proteins and induce expression of p53 protein which may be the important mechanisms of cisplatin’s anticancer action.

Key words Cisplatin Telomerase Cell cycle Gene SLC-89
顺铂对端粒酶活性及细胞周期分布的影响

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Tab 1 Effects of cisplatin of different concentrations on SLC-89 cells

<table>
<thead>
<tr>
<th>Cisplatin</th>
<th>Telomerase activity</th>
<th>Rate of cell labeling</th>
<th>PCNA</th>
<th>Cell cycle</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 mg/L</td>
<td>p53</td>
<td>bel-2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>1.39 ±0.085</td>
<td>15.09 ±6.08</td>
<td>28.01 ±0.78</td>
<td>42.09 ±2.49</td>
</tr>
<tr>
<td>5</td>
<td>1.002 ±0.123 *</td>
<td>20.19 ±5.90A</td>
<td>25.09 ±3.22</td>
<td>35.96 ±4.25A</td>
</tr>
<tr>
<td>10</td>
<td>0.719 ±0.218 *</td>
<td>38.61 ±4.19A</td>
<td>19.07 ±4.01</td>
<td>27.03 ±4.56</td>
</tr>
<tr>
<td>15</td>
<td>0.328 ±0.198 *</td>
<td>33.02 ±1.82A</td>
<td>12.55 ±7.11 *</td>
<td>18.88 ±6.24</td>
</tr>
</tbody>
</table>

* Comparison between trial group and control group, **P<0.01, ***P<0.001

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2.3 p53\textsuperscript{bcl-2} PCNA SLCP-89 72 h 100 μmol/L SMMC-7721 4 h 20 h 10 μmol/L 7721 24 ~ 120 h HeLa 48 h Misawa 48 h A549 48 h A549 48 h DN-NERT A549 SLC-89 bcl-2 PCNA G	extsubscript{0}/G	extsubscript{1} p53

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3. Channa N, Singh N. Vitamin C augments chemotherapeutic response of cervical carcinoma HeLa cells by stabilizing


