node metastases ($P < 0.05$). Four small interfering RNA eukaryotic expression vector specific to Livin were constructed by gene recombination. And one of them can efficiently decrease the expression of Livin, the inhibition of the gene was not less than 70% ($P < 0.01$). The recombinated plasmids were extracted and transfected gastric cancer cells. The stable clones were obtained by G418 screening, and were amplified and cultured. When Livin gene was silenced, the reproductive activity of the gastric cancer cells was significantly lower than the control groups ($P < 0.05$). The study also showed that IC50 of 5-Fu and cisplatin on gastric cancer cells treated by shRNA was decreased and the cells were more susceptible to proapoptotic stimuli (5-Fu and cisplatin) ($P < 0.01$).

Conclusions: Livin is overexpressed in gastric carcinoma with a relationship to tumour differentiation and lymph node metastases, which is suggested to be one of the molecular prognostic factors for some cases of gastric cancer. ShRNA can inhibit livin expression in SGC-7901 cells and induce cell apoptosis. Livin may serve as a new target for apoptosis-inducing therapy of gastric cancer.

Keywords: Stomach neoplasms; Livin; Apoptosis; RNAi; RT-PCR

### Antiproliferative Effects of Combined Tamoxifen and Gefitinib in Non-Small Cell Lung Cancer

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Gefitinib, an EGFR tyrosine kinase inhibitor, is approved for clinical use in the treatment of NSCLC. According to statistics, patients which were women, the presence of adenocarcinoma or never smokers experienced a higher response rate. This may be involved in interaction between the estrogen receptor (ER) and the epidermal growth factor receptor (EGFR). To test whether inhibition of the EGFR signaling pathway affects the antitumour effect of gefitinib, gefitinib, and an oestrogen receptor (ER) antagonist, TAM, were administered to non-small cell lung cancer (NSCLC) cell lines. Compared to treatment of either TAM or gefitinib alone, drug combination obviously decreased proliferation and increased apoptosis of A549 and H1650 came from adenocarcinoma. However, it was no effect on H520 (came from squamous cell carcinoma). Rapid activations of EGFR pathway by both EGF and β-E2 were observed in A549. Additionally, EGFR and ER expression were down-regulated respectively in response to estrogen and EGF but up-regulated in response to TAM and gefitinib in vitro. These results suggest that there is a functional cross-signaling between the EGFR/ER pathways in NSCLC possibly providing rationale to combine gefitinib with anti-estrogen therapy for lung cancer treatment.

Keywords: tamoxifen, gefitinib, NSCLC, EGFR/ER pathway

### The Synergistic Effects of Nedaplatin and Cisplatin on the Proliferation and Apoptosis of Human Ovarian Carcinoma Skov-3 and Cervical Carcinoma Hela Cell Line

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Aim: To study the synergistic effects of nedaplatin (NDP) and cisplatin (DDP) on the human ovarian carcinoma Skov-3 and cervical carcinoma Hela cell line.

Method: The inhibition effects were evaluated by MTT assay. Cell apoptosis was detected by flow cytometry. The changes of Ki-67, Bax and Bcl-2 in mRNA and protein level were quantified by RT-PCR and Western blot.

Results: The growth inhibition of Skov-3 was dose-dependent after exposure to the NDP or DDP alone. The interaction of the two drugs was synergistic at higher concentrations according to the Median-effect principle. The inhibition rate of NDP or DDP and combative treatment group was $39.04 \pm 1.26\%$, $45.04 \pm 1.45\%$, $56.21 \pm 1.44\%$ (Skov-3) and $44.76 \pm 2.11\%$, $46.90 \pm 0.99\%$, $56.63 \pm 1.83\%$ (Hela) respectively and the cells apoptotic rate was tended to increase. Compared with the NDP or DDP alone treatment group, the combative treatment group’s Ki-67 and bcl-2 mRNA (protein) expression were decreased but the expression of Bax mRNA (protein) were increased.

Conclusion: Compared to the effects of NDP or DDP alone at high concentrations, combination of NDP and DDP at low concentrations proves to be much more effective in the inhibition of the proliferation and the induction of the apoptosis of Skov-3 and Hela cell line.

Keywords: Nedaplatin, Cisplatin, Ovarian carcinoma, Cervical carcinoma, Combinative treatment, Median-effect principle

Introduction: Mortality of ovarian cancer occupies the first place of gynecologic malignant tumor, 5 year survival rate by surgery is only 20% – 30%. Chemotherapy takes the important position, and the common chemotherapy plan usually contains the platinum. Cervical cancer is one of most common gynecologic malignant tumors and has an increasing tendency among youth. The surgery and the radiotherapy are the standard treatments but 5-year survival rates are not high with the reason of recurrence and metastasis. Combinative chemotherapy including DDP plays an important role in the combined therapy of cervical cancer.

DDP is obviously in dose-dependent manner. Increasing the dose will bring in the adverse effect, therefore to seek the highly effective and low poisonous plan is imperative. Nedaplatin, (NDP) has the same mechanisms and the different adverse effects compared with DDP. To decrease dosage may reduce the adverse effect but unable to get the acceptable effect. Combinative using the reduced dosage of medicines which have the same mechanisms and the different adverse effects is a way to explore the highly effective and low poisonous plan. For such reason, we have attempted to combine NDP and DDP to interfere tumor cells, and have discovered that it may inhibit the proliferation and induce the apoptosis of the esophagus tumor cell lines. In order to further prove it, we combined NDP and DDP of reduced dosage to interfere the human ovarian cancer cell line Skov-3 and cervical cancer cell line Hela in vitro and studied the mechanisms of apoptosis and proliferation.

### Cancer Genetic Signatures

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As an unstable system, cancer is now envisaged as a dynamic network based on expression of its genes with respect to the course and stage...