

**P006** Effects of prostaglandins on apoptosis of human lung carcinoma cell line A549  
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Prostaglandins are synthesized via the cyclooxygenase (COX-1 and-2) pathway in a variety of cells in response to various physiological stimuli. Selective COX-2 inhibitors such as NS-398 have been reported to induce apoptosis in a variety of cancer cell lines. In this study, incubation of A549 cells with NS-398 (100 $\mu$ mol/L) induced apoptosis (54%), and inhibited cell proliferation (53%). Concentrations of PGF<sub>2</sub> $\alpha$ , PGI<sub>2</sub> and TXA<sub>2</sub> in culture medium before treatment with NS-398 were found to be 6267-, 44-, and 140-fold higher than those of the cytosol, respectively. After treatment with NS-398 for 48 hrs, the ratios were changed to 3887-, 77-, and 61-fold respectively. Concentrations of PGF<sub>2</sub> $\alpha$ , PGI<sub>2</sub> and TXA<sub>2</sub> in mitochondrial matrix of A549 cells before treatment with NS-398 were found to be 3187-, 4.6-, and 0.9-fold higher than those of the cytosol, respectively. After treatment with NS-398 for 48 hrs, the ratios were changed to 3793-, 5.7-, and 1.4-fold respectively. Furthermore, BrCG, a prostaglandin transporter (PGT) inhibitor was found to reduce apoptosis (48%) in A549 cells induced by NS-398. These results suggest that the proapoptotic effect of NS-398 in A549 cells was achieved by promoting the uptake of prostaglandins into mitochondria, and probably through the PGT for prostaglandin transportation.