

vivo has been hampered by the decrease in transfection efficiency mediated by non-specific electrostatic interactions with serum components. In order to avoid these problems, we designed a polyplex with decreased positive charge on the complex surface. To this end we prepared PEI/DNA complex coated with anionic biodegradable polymer, alginate, and compared their gene delivery behavior with PEI/DNA. The 0.01% alginate-coated PEI/DNA polyplex showed about 50-100 fold increased transfection efficiency compared to non-coated complexes in the presence of 50% serum. The surface charge of the alginate-coated complex was approximately half that of the alginate-lacking complex. The size of alginate-coated complex was slightly smaller than that of the complex without alginate. The former complex also showed reduced erythrocyte aggregation and decreased cytotoxicities to target cells in comparison with PEI/DNA complex. In conclusion, the alginate-coated PEI/DNA polyplexes could enhance the transfection efficiency by reducing non-specific binding with serum component and by decreasing the cytotoxicity.

Poster Presentations – Field A3. Hygienics

[PA3-1] [10/18/2002 (Fri) 09:30 – 12:30 / Hall C]

Antiplatelet Activity of NQ12 May Be Mediated by Inhibition of Cyclooxygenase and Generation of 12-HETE

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In the previous study, we reported that NQ12, a vitamin K antagonist, showed a potent antithrombotic and antiplatelet activities.

In order to elucidate the antiplatelet activity of NQ12, we investigated the effect of NQ12 on arachidonic acid cascade parameters such as cPLA2, cyclooxygenase (COX), and the downstream production such as TxA2, PGD2 and 12-HETE. NQ12 inhibited COX activity in a concentration-dependent manner in U937 cells. NQ12 showed a concentration-dependent inhibitory effects on washed rabbit platelets aggregation induced by collagen and arachidonic acid. NQ12 slightly inhibited arachidonic acid-induced thromboxane B2 generation and also suppressed 12-HETE generation concentration-dependently in rabbit platelets. NQ12, however, did not affect cPLA2 activity at the concentration which inhibited TxB2 formation in stimulated platelets. In conclusion, these results suggest that the antiplatelet mechanism of NQ12 may be resulted from inhibition of cyclooxygenase activity and the generation of 12-HETE.

[PA3-2] [10/18/2002 (Fri) 09:30 – 12:30 / Hall C]

Tetrandrine induces mitochondria-dependent apoptosis in HepG2 cells

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Tetrandrine is a bis-benzyl isoquinoline alkaloid derived from the root of *Stephania tetrandra* S. Moore, which was reported to elicit in vitro cytotoxic effect on HeLa cells and in vivo suppressive effects on mouse ascite tumor. Tetrandrine also induced apoptosis in a various cell lines. Recent studies have revealed that mitochondria has been shown to play an important role in the regulation of apoptotic