both physiological and stimulated mucin release from airway epithelial cells without significant
cytotoxicity and PLL lost its activity under the range of 14mer. This finding suggests that polymer of
basic amino acid like PLL might function as a regulator for hypersecretion of mucus manifested in
various respiratory diseases.

[PA1-14] [ 10/18/2002 (Fri) 09:30 – 12:30 / Hall C ]

A newly antiarrhythmic drug CW–2202 is ideal in treating atrial fibrillation

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A number of patients suffering from atrial fibrillation are increasing and many cardiologists are trying
to develop the ideal antiarrhythmic drugs for atrial fibrillation. Previously, we found out that CW–2202,
a furanocoumarin derivative inhibited the hKv1.5 current expressing predominantly in human atrium
without affecting the HERG current expressing mainly in ventricle. From those results, we proposed
that CW–2202 would be one of the leading compound in developing the ideal antiarrhythmic drugs for
atrial fibrillation. In this study, we examined the effects of CW–2202 on cardiac action potentials as
well as K+ currents expressed in Ltk– cells using conventional microelectrode technique and patch
clamp method. CW–2202 reduced the tail current amplitude recorded at −50 mV after 250 ms
depolarizing pulses to +60 mV, and slowed the deactivation time course resulting in a ‘crossover’
phenomenon when the tail currents recorded under control conditions and in the presence of CW–
2202 were superimposed. These results indicate that CW–2202 primarily block activated hKv1.5
channels in a time–, voltage–, frequency– and concentration–dependent manner. Additionally, CW–
2202 prolonged the action potential durations of atrial myocytes and Purkinje fibers in a dose–
dependent manner. These results strongly suggest that CW–2202 could be an ideal antiarrhythmic
drug specific for atrial fibrillation.

[PA1-15] [ 10/18/2002 (Fri) 09:30 – 12:30 / Hall C ]

cells through p53–dependent mechanism

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A synthetic naphthoquinone alkaloid, 2–amino–3–ethoxycarbonyl–1–methyl pyrrolo (3,2–b) naphtho–
4,9–dione (compound 1), showed a potent cytotoxicity in a panel of cancer cell lines with an IC50
ranged from 0.1 to 0.3 microgram/mL. Prompted by a potent cytotoxic activity, the mechanism action
study was performed with cultured A549 of human lung cancer cells. Flow cytometric analysis showed
G2/M cell cycle arrest and microscopic investigation was also characterized with apoptotic
morphological features. The apoptotic cell death was induced in a concentration– and time–
dependent manners. In addition, Compound 1 increased p53 expression level in A549 cells. But the
bcl–2 protein level was not much affected. Our results demonstrate that compound 1 may be a good
candidate for additional evaluation as a potential therapeutic agent for human lung cancer and
possibly other types of cancer.(This work was supported in part by Korea research Foundation Grant,

[PA1-16] [ 10/18/2002 (Fri) 09:30 – 12:30 / Hall C ]

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Inhibition of C2-ceramide induced contraction in cat esophageal smooth muscle cell by newly synthesized Ceramide analogues

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It has been shown that C2-ceramide (C2), short chain ceramide, plays a role in mediating contraction of cat esophageal smooth muscle cells. We examined the effect of newly synthesized ceramide analogues on the C2-ceramide induced contraction in esophageal smooth muscle cells isolated with collagenase.

C2-ceramide produced contraction of smooth muscle cells in a dose dependent manner. CY 3523, CY3525, or CY 3723 (a ceramide analogue) inhibited C2-ceramide induced contraction in a dose dependent manner, which inhibition produced maximally at 10⁻⁵ M of each analogue. CY 3523 showed the 35~40% inhibition, and CY3525, CY3723 showed 25~35% inhibition. The inhibition of C2-ceramide induced contraction by ceramide analogues was recovered by treatment with PMA (100 nmol, PKC activator) for each analogue. These results suggest that ceramide analogues can inhibit C2-ceramide induced contraction via PKC-dependent pathway.

[PA1–17] [ 10/18/2002 (Fri) 09:30 – 12:30 / Hall C ]

Inhibitory Effects of 1,3-Selenazol-4-one Derivatives on Mushroom Tyrosinase

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This study reports depigmenting potency of 1,3-selenazol-4-one derivatives, which would be based upon the finding of direct inhibition to mushroom tyrosinase. 1,3-Selenazol-4-one derivatives exhibited inhibitory effect on dopa oxidase activity of mushroom tyrosinase. In this study, inhibitory effects of six kinds of 1,3-selenazol-4-one derivatives (3a, 3c, 3d, 3e, 3g and 3l) on mushroom tyrosinase were investigated. Compounds at a concentration of 500 mM exhibited 33.4 – 62.1 % of inhibition on dopa oxidase activity of mushroom tyrosinase. Their inhibitory effects were higher than that of kojic acid (31.7 %), a well known tyrosinase inhibitor, 2-(4-Methylphenyl)-1,3-selenazol-4-one (3a) exhibited the strongest inhibitory effect among them dose-dependently and in competitive inhibition manner.

[PA1–18] [ 10/18/2002 (Fri) 09:30 – 12:30 / Hall C ]

Inhibitory effects of new quinone compounds on eNOS activity in rat aorta and nNOS activity in rat brain

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Nitric oxide (NO) has been shown to play an important role in the regulation of vascular tone, platelet function, neurotransmission, and immune function. NO is synthesized from the L-arginine by NO synthase (NOS). Three distinct isoforms of NOS have been identified: calcium/calmodulin-dependent