

neuronal cells was investigated in this study. PC12 cells were incubated in the medium loaded with [³H]dopamine (0.5μCi/ml) for 3 h at 37°C and then were incubated in Krebs-Ringer-HEPES buffer containing test drugs and HRF for 20min. The amount of dopamine release was determined by measuring radioactivity of media samples. Intracellular calcium ([Ca²⁺]_i) were determined by monitoring fura-2 fluorescence by the dual wavelength method. rHRF evoked dopamine release in a concentration- and a time-dependent manner, and also increased [Ca²⁺]_i in a Ca²⁺-containing buffer. rHRF did not produced a increase of [Ca²⁺]_i in the absence of extracellular Ca²⁺, however, interestingly, rHRF evoked dopamine release in the Ca²⁺-free buffer, both dopamine release and [Ca²⁺]_i increased by KCl and bradykinin were blocked in a Ca²⁺-free buffer. Both dopamine release and [Ca²⁺]_i increased by rHRF was not affected by a treatment of nifedipine (5 μM), a L-type Ca²⁺ channel blocker, whereas dopamine release and [Ca²⁺]_i evoked by KCl was inhibited. HRF-stimulated dopamine release was also not inhibited by a MAP kinase inhibitor, or a calcium-dependent cPLA2 inhibitor. Only a selective inhibitor of calcium-independent iPLA2 produced an inhibitory effect on rHRF-induced dopamine release. These results suggest that rHRF-induced increase in dopamine release is controlled by the Ca²⁺-independent process, and a Ca²⁺-independent PLA2 pathway is involved in a HRF-induced dopamine release.

[PA1-64] [10/18/2002 (Fri) 09:30 – 12:30 / Hall C]

Pre-conditioning attenuated the MPP⁺-induced cytotoxicity

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MPP⁺ is known to be a neurotoxic substance that induces the degeneration of dopaminergic neurons and Parkinson-like syndrome. Incubation with MPP⁺ induced the expression of heme oxygenase-1 (HO-1) in PC-12 cells and HO-1 revealed a protective effect against MPP⁺-induced cytotoxicity. In this study, we tested the effect of pre-conditioning on the MPP⁺-induced cytotoxicity. The PC-12 cells were incubated with MPP⁺ for 3 hrs. and then after 12 hrs the cells were exposed to several concentration of MPP⁺. Pre-incubation (pre-conditioning) with MPP⁺ significantly attenuated the cytotoxic effects of MPP⁺ and induction of heme oxygenase may be involved in this protective effect.

[PA1-65] [10/18/2002 (Fri) 09:30 – 12:30 / Hall C]

Action of lysophosphatidylcholine in U937 human monocytes

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Atherosclerosis is a main cause of cardiovascular diseases (that is angina, hypertension, cardiac infarction) and stroke. High level of low-density lipoproteins (LDL) in blood has been implicated as an important factor of atherosclerosis progression. Recently researches in endothelial cells unveiled the roles of lysophosphatidylcholine (LPC), a constituent of oxidized LDL in atherosclerosis. However, action of LPC in monocytes has not been studied. We challenged a set of LPC in U937 human monocytes and found that LPC stimulated cell growth and mobilized Ca²⁺. The Ca²⁺ response was not blocked by pertussis toxin, an inhibitor of G_{i/o} proteins or U73122, a phospholipase C inhibitor. Furthermore, The response was totally blocked by EGTA addition in extracellular media, suggesting