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Poster Sessions

Uroguanylin affects the calcium current in a complicated manner

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[Background] It is reported that natriuretic peptides affect the action potential and I_{CaL} in cardiomyocytes via an increase in cGMP by activation of particulate guanylate cyclase (pGC). Uroguanylin (uro) is known to increase cGMP through pGC. In this study, we examined the effects of uro on I_{CaL} in cardiomyocytes. [Methods] Ventricular cells were isolated from guinea-pig hearts. The I_{CaL} was recorded by use of whole-cell patch clamp method. [Results] When uro was applied to the myocytes while raising its concentration (3 nM~0.3 μ M) after stimulating I_{CaL} by 0.3 μ M isoproterenol (iso), the stimulated- I_{CaL} was inhibited by uro on the whole. However, uro sometimes augmented the stimulated- I_{CaL} . The basal I_{CaL} was not affected by uro. ODQ, a selective soluble GC inhibitor, 0.1 mM did not exert the inhibitory effect on the action of uro. Rp-8-Br-PET-cGMPs (Rp), one of the most potent cGMP-PKG inhibitor, 10 μ M in patch pipette did not affect either, however, the uro-evoked augmentation of the stimulated- I_{CaL} was not observed in the presence of Rp. [Conclusion] Uroguanylin exerted the inhibitory effects on the iso-stimulated I_{CaL} in a lot of cases, but its effects were not consistent. The mechanism of the uro-induced activation of pGC and I_{CaL} remained to be elucidated