

P1 EFFECTS OF SYNTHETIC CU 18-08, CU 18-10 AND CU 18-11 COMPOUNDS ON Ca^{2+} MOBILIZATION INTO SMOOTH MUSCLE OF ISOLATED RAT AORTA

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ABSTRACT

Previously, we demonstrated that CU 18-08, CU 18-10, acyl aniline derivatives as well as CU 18-11, an acyl aminopyridine derivative reduced the spontaneous contraction of rat duodenum. In this study, we investigated the effect of these three synthetic compounds on the Ca^{2+} entry into aortic smooth muscle cells after noradrenaline-induced depletion of intracellular Ca^{2+} . Thoracic aortic strips were isolated from male Wistar rats (250-300g), denuded the endothelium layer, and suspended in a 15 ml organ bath containing physiological solution. To deplete intracellular Ca^{2+} , noradrenaline (1 μM) was added to stimulate the aortic contraction in the Ca^{2+} -free medium. After the intracellular Ca^{2+} was completely depleted, the aortic strips were washed 3 times with Ca^{2+} -free medium. Upon addition of Ca^{2+} , the spontaneous contraction or resting tone (RT) of rat aortic strip was observed again. This process was inhibited by prazosin (1 μM) (α -adrenoceptor antagonist) and nifedipine (1 μM) (Ca^{2+} entry blocker). Our results showed that CU 18-08 (10 μM) and CU 18-10 (10 μM) significantly inhibited the RT while CU 18-11 did not. These findings suggested that CU 18-08 and CU 18-10 interfered the mechanical refilling process of into intracellular pools. It is possible that these two compounds may have pharmacological effect on voltage-operated Ca^{2+} channels or Ca^{2+} entry due to α -adrenoceptor activation.

Key words : CU 18-08, CU 18-10, CU 18-11, aortic smooth muscle, increase in the resting tone (IRT)