Effects of CU-18-07, CU-18-09 and CU-18-12 on The Smooth Muscle Contraction of Isolated Rat Vas Deferens

Soratiya Charoensomprasong[1], Chamnan Patarapanich[2], Prasan Dhumma-upakon[1], Suree Jianmongkol[1]

[1]Department of Pharmacology, [2]Department of Chemistry, Faculty of Pharmaceutical Sciences, Chulalongkorn University, Bangkok 10330, Thailand.

Abstract

CU-18-07(4-(Heptanoyl)methoxyaniline), CU-18-09(4-(Heptanoyl)nitroaniline) are acyl aniline derivatives and CU-18-12(4-(Heptanoyl)aminopyridine) is acyl aminopyridine derivative. These three synthetic compounds were showed to reduce the spontaneous contraction of isolated rabbit duodenum. The purpose of this study was to investigate the effect of these synthetic compounds on the contractility of isolated rat vas deferens. A section of vas deferens obtained from male wistar rat weighing 250-300g was suspended in a 15 ml organ bath filled with physiological solution at 37±0.5°c and gassed with carbogen. The contractile response was provoked by addition of NE($1X10^{-5}$M), 5-HT($1X10^{-5}$M), $BaCl_2$($1X10^{-3}$M) and KCl($5X10^{-2}$M). The results showed that these three compounds were able to suppress the contraction induced by all agonists. Among the three compounds, CU-18-09 was most the potent inhibitor. These three compounds reduced the influx of extracellular Ca^{2+}, as showed by the suppression of cumulative dose-response curve of $CaCl_2$ in the present of each CU compounds. The pD_2 were 4.02±0.19, 5.01±0.14 and 3.74±0.20 for CU-18-07, CU-18-09 and CU-18-12 respectively. Our finding suggested that the three synthetic compounds may interfere the influx of extracellular Ca^{2+} into the smooth muscle cell of rat vas deferens.