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Effect of aqueous-ethanol extract from Crocus sativus (saffron) on guinea-pig isolated heart

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Abstract

In this study, the effects of an aqueous-ethanol extract from Crocus sativus on heart rate and contractility were examined. Isolated guinea-pig hearts were perfused through the aorta in a Langendorff mode. Heart rate and contractility were determined in the presence of four concentrations of the extract (۰,۱, ۰,٥, ۱,۰ and ٥,۰ mg%) and diltiazem (۰,۱, ۱, ۱۰ and ۱۰۰ μM) in perfused heart with: (۱) ordinary Krebs solution (group ۱, n = ۹), (۲) calcium-free Krebs solution (group ۲, n = ۷). In group ۱, three higher concentrations of diltiazem (۱, ۱۰ and ۱۰۰ μM), but only the highest (٥,۰ mg%) and two higher concentrations (۱,۰ and ٥,۰ mg%) of the extract caused significant reduction in heart rate and contractility, respectively ($p < ۰,۰٥$ to $p < ۰,۰۰۱$). In group ۲, the highest (۱۰۰ μM) and two higher concentrations (۱۰ and ۱۰۰ μM) of diltiazem ($p < ۰,۰٥$ to $p < ۰,۰۱$), but only the highest concentration of the extract showed significant reductions in the heart rate and contractility ($p < ۰,۰٥$ to $p < ۰,۰۱$). There were significant negative correlations between concentrations of the extract and diltiazem and their effects in both groups ($p < ۰,۰۱$ to $p < ۰,۰۰۱$). These results suggested a potent inhibitory effect of aqueous-ethanol extract from C. sativus on the calcium channel of guinea-pig heart. Copyright © ۲۰۰۷ John Wiley & Sons, Ltd.

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