

The positive inotropic and chronotropic effects of Teucrium polium L. extract on guinea pig isolated heart

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[View references \(77\)](#)

Abstract

There are several reports about the antidiabetic, antispasmodic and antihypertensive properties of Teucrium podium L. (TP). The aim of this study is to investigate the inotropic and chronotropic effects of aqueous-ethanol extract from TP on guinea pig isolated heart. 75 Dunkin Hartley guinea pigs weighed 300-400 g were randomly divided into three groups: group 1 in which the heart was perfused by Krebs solution, group 2 in which the heart was perfused by Krebs calcium free solution and group 3 in which the heart was perfused by Krebs +diltiazem solution. Three concentrations of aqueous-ethanol extract from TP were infused to the heart for 1 minute. The heart contractions were recorded by an isotonic transducer and data was saved by computer. The extract of TP increased the contractility and HR in all three groups. Comparing mean percentile changes of contractility and HR between the three groups showed a significant difference between groups 1 and 3 and also between groups 2 and 3, but the difference between groups 1 and 2 was insignificant. The TP extract has positive chronotropic and inotropic effects on isolated heart. These effects are probably due to the agonistic action of the extract on L-type calcium channels.

Reaxys Database Information

Indexed Keywords

EMTREE drug terms: alcohol; calcium channel L type; diltiazem; Teucrium polium extract

EMTREE medical terms: animal experiment; article; chronotropism; controlled study; guinea pig; heart contraction; heart perfusion; heart rate; inotropism; isolated heart; nonhuman; solvent extraction; transducer

Chemicals and CAS Registry Numbers: alcohol, 64-17-0; diltiazem, 33286-22-0, 42399-41-7

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