

عنوان مقاله:

Role of the potassium channels in vasorelaxant effect of asafoetida essential oil

محل انتشار:

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خلاصه مقاله:

Objective: In a previous work, we showed that asafoetida essential oil (AEO), from oleo-gum resin of *Ferula asafoetida* L. from the Apiaceae family, has a vasodilatory effect. This effect was both endothelium-dependent and endothelium-independent. The present study was designed to determine whether potassium channels and intracellular calcium release contribute to AEO-induced vasodilation. **Materials and Methods:** Rats thoracic aorta were isolated and denuded. Following induction of contraction by potassium chloride (60 mM), concentration-response curve was plotted by the cumulative addition of AEO (0.625-80 μ l/l to the medium of rings. The vasodilatory effect of AEO was assessed before and after addition of phenylephrine and potassium channel blockers (including barium chloride (BC), 4-aminopyridine (4A) and glibenclamide (GI)). **Results:** AEO relaxed the precontracted rings in a concentration-dependent manner ($IC_{50}=23 \mu$ l/l). All potassium channel blockers significantly attenuated the vasodilatory activity of AEO when they were added to rings medium before addition of KCl ($p<0.01$, 4A and GI groups and $p<0.001$, BC group vs. control group) but not after that. In contrast to K channel blockers, adding AEO before or after phenylephrine, the tension was reduced significantly (p Conclusion: The findings of this study indicated that the vasodilatory effect of AEO on denuded-endothelium aortic ring was mediated through activation of potassium channels and reduced intracellular calcium release).

کلمات کلیدی:

asafoetida essential oil, Potassium channels, aorta, Rats

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