图 1. Russulagina (1 R, 2 S)-5-acetoxy-7-
{(2E)-2-methylpent-2-enyl}oxipiperazine

方法与结果

Russulagina 的抗血小板作用

图 2.2的水提取物

1985年7月25日

金松

1985年8月24日
**Fig. 2.** Contraction of aortic strips of rabbit caused by tussilago and nonpareilepinine.

Tussilago 37-38°C, dose 0.5% C02 \+ 50% CO2, with pectoral muscle at rest and with 10 min stimulation at 1 Hz, 1000 times, 1-2 h. Every 15 min stimulation 1 time, and 10 stimulations each 1 h. The Tussilago dose is 0.06 mg/ml, 0.01 mg/ml, and 0.001 mg/ml. The Neve dose is 0.24 mg/ml. The results show that the contractility of the aortic strips is significantly increased when stimulated with Tussilago and nonpareilepinine. The contractility is significantly decreased when stimulated with Neve.

**Table 1.** Influence of phenolamine, Ca"+"-free solution and verapamil on contractile effects of tussilago and nonpareilepinine on aortic strips of rabbits.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Tussilago Tension (g)</th>
<th>Tussilago 0.01 mg/kg Difference</th>
<th>Neve Tension (g)</th>
<th>Neve 0.01 mg/kg Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>1.17 ± 0.44</td>
<td>-</td>
<td>1.72 ± 0.10</td>
<td>-</td>
</tr>
<tr>
<td>Phenolamine 1/2* pereudeminted</td>
<td>0.27 ± 0.24*</td>
<td>-0.10 ± 0.28*</td>
<td>0.50 ± 0.15</td>
<td>0.47 ± 0.10**</td>
</tr>
<tr>
<td>Ca&quot;+&quot;-free solution</td>
<td>0.27 ± 0.24*</td>
<td>-0.10 ± 0.28*</td>
<td>0.50 ± 0.15</td>
<td>0.47 ± 0.10**</td>
</tr>
<tr>
<td>Control</td>
<td>0.02 ± 0.21</td>
<td>-</td>
<td>1.72 ± 0.10</td>
<td>-</td>
</tr>
<tr>
<td>Verapamil 1/16* pereudeminted</td>
<td>0.55 ± 0.18*</td>
<td>-0.32 ± 0.42*</td>
<td>0.47 ± 0.10</td>
<td>-1.23 ± 0.10**</td>
</tr>
</tbody>
</table>

*Significant difference from control, p < 0.05.
**Significant difference from control, p < 0.01.
收缩的综合结果，

值得指出者在无Ca⁺⁺溶液中的变化明显不同。NE收缩所需Ca⁺⁺的来源主要是细胞内，因此在无Ca⁺⁺溶液中可能未完全减
弱，此与文献报道相近。而Tus在无Ca⁺⁺溶液中的收缩作用更显著减弱，表明细胞外Ca⁺⁺的存在。静脉肌细胞膜上至少有两种类
似Ca⁺⁺通道可供细胞外Ca⁺⁺内流(Na⁺),

目前比较清楚的是电压依赖性Ca⁺⁺通道(1)，与受体结合Ca⁺⁺通道(ROCC)，Ca⁺⁺的封闭对Ver依赖性抑制PDC(2)，对细胞内贮
库释放Ca⁺⁺的抑制作用(Ca⁺⁺)，实验表明NE作
用被Ver一定程度地抑制，且文献报道相近，而Tus的作用并未因Ver而显著变化，表
明Tus不是通过PDC促进Ca⁺⁺内流，Ca⁺⁺激
动剂的作用方式复杂，Tus对血管平滑肌直
接作用的进一步机械有待研究。

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Pressor mechanism of tussilagone
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ABSTRACT Tussilagone (14 R, 7 R)-
14-acetoxy-7-{[2(2-E)-3'-methylpent-2'-enoioxyl] oloplupane, first isolated by
Chinese from Tussilago farfara L. had a
prominent pressor effect on spinal cats and a slight depressor effect on anesthetized cats
injected via vertebral artery. The pressor
effect was not influenced by hexametha-
nium bromide, but reduced by phenol-
amine or pronololination ofenterine. Tussi-
lagone induced the contraction of aortic
strips of rabbits. The contractile pattern
was not influenced by phentolamine or
verapamil, but reduced in Ca⁺⁺-free
solution. This was different from that of norepinephrine.

These results indicate that the vasoconstricting effect of tussilagone is peripheral, and is a combined result of increasing the release of catecholamine transmitter from nervo terminals and a direct action on vascular smooth muscle. The direct action depends on the extracellular Ca**.

KEY WORDS tussilagone (14R, 7R)-14-acetoxy-7-((2'E)-3'-methylpent-2' -enoyloxy)-opioanone; aorta; blood pressure; renephrine; norepinephrine; Ca**