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Carrageenan 유발 족부종에 미치는 두충잎의 효과  
인삼약초연구소; 김금숙, 이승은, 박충범, 박호기, 성낙술, 정주호, 김영옥\*

Effect of *Eucommia ulmoides* OLIVER leaf on carrageenan-induced inflammation  
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### Objectives

To observe the anti-inflammatory effects of *Eucommia ulmoides* OLIVER (EU) on carrageenan (CAR)-induced inflammation rats, so as to reveal partial effects of EU in relieving acute inflammation.

### Materials and Methods

○ Fourty male SD rats were divided into control, model, Indomethacin (IND, 7.5 mg/kg, oral treatment), EU-pre-treatment(300mg/kg) was given orally once daily for 5 days before modeling. Arthritis model was established by subcutaneous injection of 1% CAR, 0.1 mL into the right hind paw. Paw edema degree of the affected hind paw was measured with a foot-volume surveyor. After processing samples of the affected paw toes (including smashing, centrifugalization, etc.), **using rotarod and treadmill** for behavior measured. We investigated the changes of the rheumatoid factor in serum , volume of edema of ankle joint and diminish pain.

### Results

EU administered orally by gavage showed dose-dependent (100-500 mg/kg) anti-inflammatory activity in carrageenan-induced rat paw edema, inhibiting both the edema by 30-40%. and thermal hyperalgesia. Significantly reduced levels of rheumatoid factor was observed in the serum of arthritic rats.

These results suggest that a pharmacological blockade of EU may represent a new therapeutic strategy in signs and symptomatic relief of osteoarthritis and/or rheumatoid arthritis. Hyperalgesia was assessed using the up/down method<sup>3</sup> with 8 von Frey monofilaments (4, 6, 10, 18, 40, 78, 141, and 217 mN). Each trial began with the 1 second application of a 10 mN von Frey.

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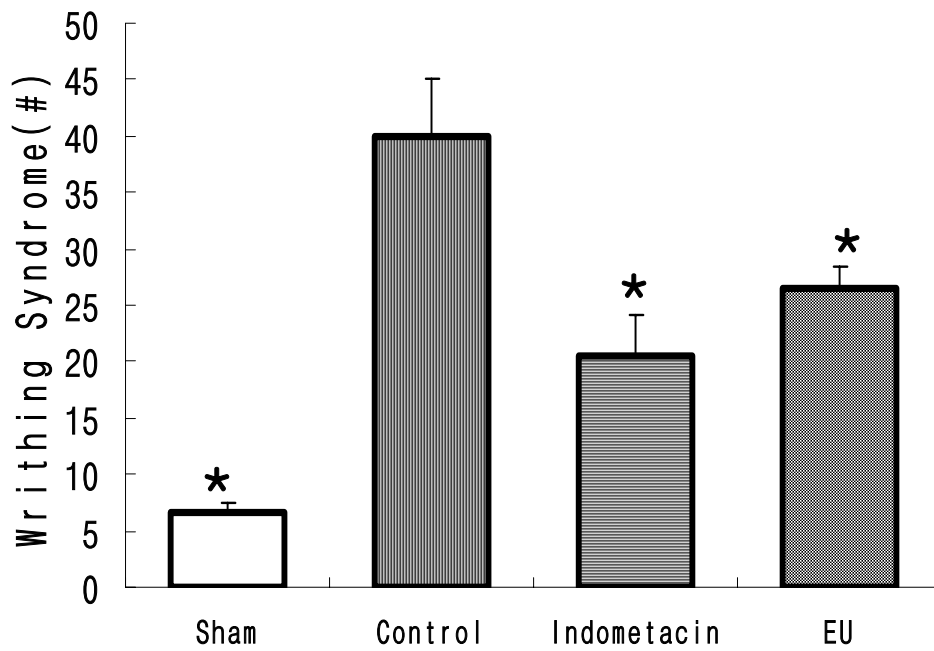


Fig. 1. Paw swelling in carrageenan-injected hind paws. Animals were given an intraplantar injection of carrageenan (1 mg).

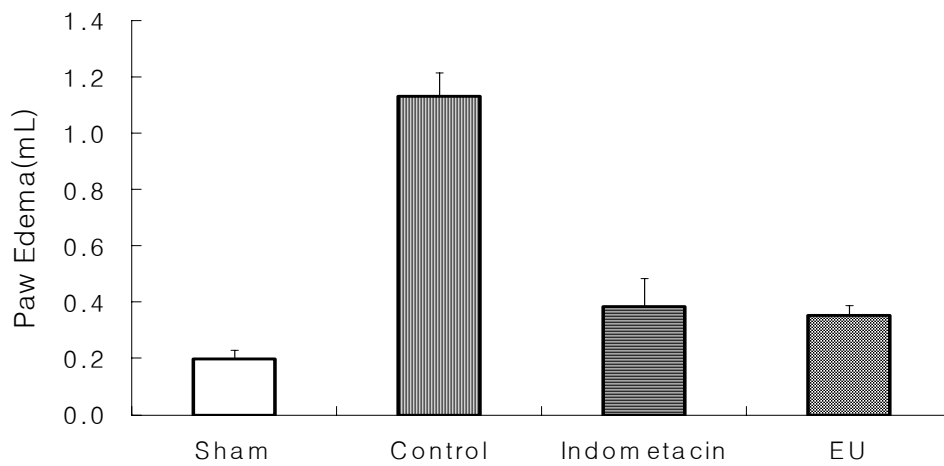


Fig. 2. Effect of EU on writhing test in mice. \* $p < 0.5$ , \*\* $p < 0.05$ . \*\*\* $p < 0.01$