

Vasodilation Effect of the Water Extract of *Rheum palmatum* L. in Rat Thoracic Aorta.

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ABSTRACT

Rheum palmatum L. has been used for treatment of hypertension, lipemia, and paramenia in the oriental herbal medicines for a long time. We have examined the relaxational response to the water extract of *Rheum palmatum* L. in isolated thoracic aorta from sprague dawley (SD) rat in the presence and absence of endothelium. Rat thoracic aorta was investigated in vessel segments suspended for isometric tension recording by polygraph. Responses to Rhizoma Rhei were investigated in vessels precontracted with 5-hydroxytryptamine. We found that the thoracic aorta segments responded to the water extract of *Rheum palmatum* L. (ERP) with a dose-dependent vasorelaxation. We found that

1. The thoracic aorta segments responded to ERP with a dose-dependent vasodilation.
2. The 5-HT induced contraction at 10^{-4} M were inhibited by 85.8% after addition of the 0.1 g/mL water extract of ERP.
3. The 5-HT induced contraction at 10^{-4} M with and without endothelium were inhibited by 86.4% and 85.8% after addition of the 0.1g/mL ERP.
4. After pre-treatment of the thoracic aorta with 10^{-4} M N^G-monomethyl-L-arginine (L-NMMA), inducible nitric oxide synthase inhibitor, the vessels has not response to the contraction.

In conclusion, ERP induced relaxation in the isolated rat thoracic aorta were composed of dose-dependent relaxation. and it has potent vasodilation.

Keywords : *Rheum palmatum* L., endothelium, polygraph, 5-hydroxytryptamine, vasodilation, L-NMMA, nitric oxide synthase