

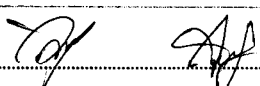
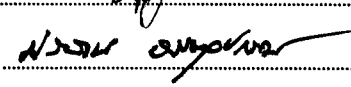
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KEY WORD : ANDROGRAPHOLIDE / PIPERINE / ROHITUKINE /
UMBILICAL ARTERIES / UMBILICAL VEINS

WIDARAT SUKKAMOLRAT : EFFECTS OF ANDROGRAPHOLIDE,
PIPERINE, AND ROHITUKINE ON THE CONTRACTION OF
HUMAN ISOLATED UMBILICAL ARTERIES AND VEINS.

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UPAKORN, Ph.D. 81 pp. ISBN 974-634-869-8

Andrographolide is a member of lactone compounds isolated from leaves of Thai medicinal plant, *Andrographis paniculata* Wall.ex Nees. Piperine is a main alkaloid of *Piper nigrum* Linn. and rohitukine is a main pure cromone alkaloid that extracted from *Dysoxylum crytobotryum* Miq. The effects of these compounds on the contraction of isolated human umbilical arteries and veins were investigated. Acetylcholine and NE ($2 \times 10^{-6} M$) produced only a slight vasoconstriction comparing with 5-HT and histamine ($2 \times 10^{-6} M$) which produced strong vasoconstriction and were significantly reduced by ketanserine and chlorpheniramine respectively in Krebs-Henseleit solution. Andrographolide ($3 \times 10^{-4} M$) significantly reduced contraction of umbilical arteries and veins induced by 5-HT and histamine ($2 \times 10^{-6} M$). In the lower dose ($3 \times 10^{-5} M$) andrographolide significantly reduced only the contraction of umbilical arteries induced by histamine ($2 \times 10^{-6} M$). Piperine ($1.5 \times 10^{-5} M$ and $3 \times 10^{-5} M$) significantly reduced contraction of umbilical arteries and veins induced by histamine ($2 \times 10^{-6} M$) and also piperine ($3 \times 10^{-5} M$) significantly reduced contraction of both vessels induced by 5-HT ($2 \times 10^{-6} M$). Rohitukine ($3.69 \times 10^{-4} M$) significantly reduced contraction of umbilical arteries and veins induced by 5-HT and histamine ($2 \times 10^{-6} M$) but in lower dose ($3 \times 10^{-5} M$) showed variable increase contraction of umbilical vessels. Due to the previous studies of these compounds on the other smooth muscles it could be suggested that their mechanism on umbilical vessels may not mediated via specific receptor and may probably due to interference with Ca^{2+} influx through membrane calcium channels. These results could be considered for clinical application.

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