

ABSTRACT

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Title of rigorous thesis: The *ex vivo* study of mechanism of vasodilatation effect of 3,4-dihydroxyphenylacetic acid and 4-methylcatechol

The aim of this thesis was to prove some mechanisms of vasorelaxation effects caused by two colonic metabolites of flavonoids, 3,4-dihydroxyphenylacetic acid and 4-methylcatechol, by the *ex vivo* method of isolated rat's aorta. We confirmed the vasorelaxation effects in both of the metabolites. We found out the mechanisms of vasorelaxation effect by experiments with the inhibitor of cyclooxygenase and also by experiments with inhibitors of calcium-activated potassium channels. We found out that the cyclooxygenase as well as some subtypes of calcium-activated potassium channels have both participated in the vasodilatation effect of 3,4-dihydroxyphenylacetic acid. We were not able to confirm the mechanism of vasodilatation effect of 4-methylcatechol, the results were ambiguous. The participation of the inhibition of cyclooxygenase is unlikely.