

## **Abstract**

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Title of Thesis: In vitro effects of selected isoflavonoids on isolated rat aorta

Abstract: The aim of this study was to determine whether the selected isoflavonoids are able to vasodilate aorta, what structural features might be responsible for a relaxing activity and estimate the mechanism of action. The experiment we carried out the classical in vitro method on the isolated rat aorta, and the results evaluated by the computer program GraphPad. Only glycitin did not show statistically significant relaxation of blood vessels, which can be attributed to ineffective glycosidic form. Other isoflavonoids- glycitein, daidzein and tectorigenin seem to be promising in terms of potential vasodilatation. Further studies would be needed to verify also the in vivo effects. Likely structural features include the hydroxy group at 7-position and a methoxy group at position 8 of the core of isoflavonoids. The mechanism of action is not yet known, but most likely appears endothelium-dependent mechanisms, alpha 1 receptor antagonism and agonism of muscarinic M3 receptor. It may be also involved in the effect of the antioxidant and anti-inflammatory activity or stimulation of estrogen receptors.