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Title of rigorous thesis: Interaction of chosen natural compounds with farnesoid X receptor

Metabolism of many substances taken in the diet, formed in the body and administered in the form of pharmaceuticals and dietary supplements may be influenced by the specific structures called the nuclear receptors. The focus of this work is farnesoid X receptor (FXR) and its interaction with selected natural ingredients, specifically anthocyanidins peonidin, petunidin, pelargonidin, malvidin, cyanidin and delphinidin and chosen alkaloids from *Fumaria officinalis*. For these substances has been previously observed and described in different studies the positive influence of the development and progression of atherosclerosis, metabolism of triglycerides, bile acids secretion, total and low density lipoprotein (LDL) cholesterol, glucose metabolism and also the influence on the insulin signaling pathway. Given the critical role of FXR in these processes, these compounds have been selected for the examination as the potential agonists of FXR. Substances were tested using TR-FRET LanthaScreen ™ farnesoid X receptor co-activator analysis. We found several promising ligands of FXR among tested compounds.