

## **ABSTRACT**

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Title of Thesis: Interactions of the selected natural substances with conventional medicine

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The aim of this diploma thesis is to give an overview of interactions which could occur during simultaneous use of conventional drugs and medicinal plants containing anthraquinones, saponins, tannins or isolated plant alkaloids. Information about herb-drug interactions were obtain and cited mostly from articles of online databases (Web of Science, Science Direct, PubMed, Google scholar) published in period 2000 - 2019. Interactions of 12 medicinal plants and 12 isolated plant alkaloids are mentioned in the thesis. The most significant interactions usually appear in combination of herbal products and drugs with narrow therapeutic index such as warfarin, digoxin, cyclosporin or theophylline. St John's wort affects the metabolism of drugs through induction of CYP450 enzymes (CYP3A4, CYP2C9, CYP2C19) or P-glycoprotein and also St John's wort can increase the risk of serotonin syndrome in combination with SNRI, SSRI or triptanes. Medicinal plants containing anthraquinones (aloe, senna, rhubarb) influence the absorption of drugs due to their laxatives properties. Licorice on the contrary in most cases affects the pharmacokinetics of drugs through inhibition of CYP3A4, CYP2C9 and P-glycoprotein, pharmacodynamic interactions of licorice are related to its mineralocorticoid effect. The thesis also describes interactions which could be caused by excessive use of tea catechins, caffeine, piperine and by other alkaloids. Herb-drug interactions were very often reported with cytostatics and drugs affecting cardiovascular system. Nevertheless available information about the interactions between natural substances and conventional medicine is still inadequate and further investigation is required.