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Evaluation of the *in vitro* inhibitory potentials of various dietary supplements against ten UDPglucuronosyltransferase

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Herbal and dietary supplements are commonly used throughout the world. Dietary supplements include amino acids, botanicals, herbals, vitamins and other products has accelerated research on herb-drug interactions with increasing the amount of consumption spending for healthy supplies. Therefore, co-administrations will have potentially dangerous side effects as well as herb-drug interactions; thus the regulating activity of co-administered dietary supplements has been shown to result in pronounced increase or decrease in the blood levels of the affected drugs. In addition to the potential for hepatotoxicity, some of herbal and dietary supplements may have interactions with certain prescription medications by various mechanisms leading to adverse events. The aim of this study was to investigate the inhibitory effect of commonly used herbal and dietary supplements on 10 UDP-glucuronosyltransferase (UGT) enzyme activities and evaluate their herb-drug interaction potential due to UGT inhibition. The extracts screened were artichoke, ashwagandha, burdock root, butcher's broom, cascara sagrada, fennel seed, hawthorn, horse chestnut, horsetail, maitake mushroom extract, reishi and stinging nettle. The inhibitory effects of 12 herbal and dietary supplements on UGTs were determined using high-performance liquid chromatography by measuring the remaining activities with a probe substrate using recombinant human UGT isoforms and human liver microsomes in the absence or presence of extracts. Our data suggests that 12 herbs are unlikely to cause clinically significant herb-drug interactions mediated via inhibition of UGT enzymes involved in drug metabolism. These findings should enable an understanding of herb-drug interactions for the safety use of herb.

Biography

Jiseon Kim is a graduate student with major in Pharmacology/Pharmacokinetics at The Catholic University of Korea.

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