**Screening Test of 5 Thai Vegetable Alcohol Extracts on Rat CYP2D6 Enzyme Activity in-vitro.**

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Introduction: Metabolism-based herbal-drug interaction now becomes high interested issue especially in tropical countries with variety of plants. CYP2D6 is a member of cytochrome P450 enzyme involved in biotransformation of many drugs such as antipsychotic drugs and opioids. Holy basil or Ka Prao (Ocimum sanctum L.), ivy gourd or Tam Leung (Coccinia grandis), bamboo grass or Ya Nang (Tiliacora triandra), bamboo grass or Ya Nang (Tiliacora triandra) and star gooseberry or Pak Wan Ban (Sauropus androgynus) are Thai vegetables widely consumed in Thailand. The objective of this study was to preliminary test the effect of those 5 Thai vegetable crude alcohol extracts on function of rat CYP2D6 enzyme in vitro.  

Materials and Method: Metabolic tests were carried out in vitro using rat liver microsome. Dextromethorphan was used as a specific CYP2D6 probe substrate whereas positive control used was cimetidine. The amount of Dextromethorphan was used as a specific CYP2D6 probe substrate whereas positive control used was cimetidine. The amount of Dextromethorphan, major metabolite of Dextromethorphan, was detected from reaction without vegetable alcoholic extracts. Results: It was found that the alcohol extracts of bamboo grass, star gooseberry, ivy gourd and holy basil affected on CYP2D6 enzyme function in wide range of inhibition (1.05, 7.56, 8.71, and 57.91 % inhibition respectively).  

Conclusion: It could be conclude that all 4 Thai vegetables inhibit CYP2D6 function in different degree. The same test using aqueous and hexane extracts of these vegetables should be done in the future.  

Keywords: CYP2D6, Cytochrome P450, Herb-drug interaction, Thai Vegetable, In Vitro

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**In vitro screening test of Holy Basil and Other 3 Thai Vegetable Alcoholic Extracts on Rat CYP3A4 Enzyme Activity**

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Introduction: Vegetable has always been a part of almost every Thai dish. Since vegetable may affect on Cytochrome P450 enzyme function, food-drug interaction can possibly occur when having vegetable with certain medications. CYP3A4 is a member of cytochrome P450 enzyme taking part in metabolism of drugs such as anticancers, immunosuppressive agents and macrolides antibiotics. Ocimum sanctum (Holy basil or Ka Prao), Coccinia grandis (Ivy gourd or Tam Leung), Tiliacora triandra (bamboo grass or Ya Nang) and Sauropus androgynus (star gooseberry or Pak Wan Ban) are Thai vegetables generally found in the northeastern part of Thailand. Risk determination of these vegetables to cause interaction with CYP3A4-mediated drug metabolism should be investigated for patient safety and best treatment outcome. The objective of this study was to test the effects of those 4 Thai vegetable crude alcoholic extracts on function of rat CYP3A4 enzyme in vitro.  

Materials and Method: Metabolic tests were duplicated carried out in vitro using rat liver microsome. Testosterone was used as a specific CYP3A4 probe substrate whereas positive control used was ketoconazole. The amount of 6β-hydroxytestosterone, a metabolite of testosterone, obtained from CYP3A4-catalyzing metabolic reaction in the presence of the crude vegetable alcoholic extracts was detected by using High Performance Liquid Chromatography (HPLC). Then, the percentage of 6β-hydroxytestosterone detected from reaction without vegetable alcoholic extracts. Results: It was found that the alcoholic extracts of bamboo grass, star gooseberry, ivy gourd, and holy basil affected on CYP3A4 enzyme function in wide range of inhibition (4.86, 5.48, 11.74, 22.46 and 65.65 % inhibition respectively).  

Conclusion: It could be conclude that all 5 Thai vegetables inhibit CYP2D6 function in different degrees. The aqueous and hexane extracts of these herbs should be further investigated.

**Keywords:** CYP3A4, Cytochrome P450, Herb-drug interaction, Thai Vegetable, In Vitro

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