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In vitro study of inhibitory effect on five major human cytochrome P450 isozymes activities by *Strobilanthes crispus* sub-fraction

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Strobilanthes crispus has been reported to have high medicinal value due to its anti-diabetic, anti-oxidant, anti-bacterial and anti-cancer properties. Previous studies by our research group has shown that standardized sub-fraction of *Strobilanthes crispus* (SCS) inhibits tumor growth *in vivo* and exhibits cytotoxic effect on two breast cancer cell lines suggesting potential as an adjuvant in cancer chemotherapy. The present study aimed to assess the possible interaction between SCS and human CYP450 as they play a vital role in drug metabolism that is crucial in determination of treatment efficacy. Five important human CYP450s (CYP2B6, CYP2C9, CYP2C19, CYP2D6 and CYP3A4) involved in the metabolism of major prescribed drugs were selected for this study. *In vitro* analysis of CYP450 isozymes activities was conducted using Vivid CYP450 screening kits. The fluorescent metabolites formed were measured to obtain the IC50 value that represents the inhibitory effect of SCS. The assays were verified using known inhibitors of each CYP450 isozyme. The results showed no inhibition on CYP2D6 because the IC50 value obtained is 50000-fold higher than its known inhibitor. SCS exhibited negligible inhibition towards CYP2B6, CYP2C19 and CYP3A4 with IC50 values 100-fold higher in comparison to their selective inhibitors. The activity of CYP2C9 was moderately suppressed by SCS with an IC50 value of 5.5231±0.4198 μg/mL that is 35-fold higher in comparison to the enzyme selective inhibitor, sulfaphenazole. The finding suggests that co-administration of SCS with other medicines that are metabolized by CYP2C9 could elicit adverse herb-drug interaction and further *in vivo* study is required to evaluate the modulatory effect on CYP2C9.

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