

CP-011

## INHIBITORY EFFECTS OF HWANG-RYUN-HAE-DOK-TANG ON ACTIVITIES OF CYTOCHROME P450 ISOFORM IN HUMAN LIVER MICROSOMES

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### ABSTRACT

The compound herbal medicine Hwang-Ryun-Hae-Dok-Tang (HR; a standardized herbal formula consisting of extracts from *Coptidis Rhizoma*, *Scutellariae Radix*, *Phellodendri Cortex*, and *Gardeniae Fructus*) is used for the treatment of inflammatory disease, cerebrovascular disease, gastritis, liver disease, and hypertension. To overcome the individual differential intestinal absorption problem of oriental herbal medicine, many reports focused on bio-converted (e.g. fermentation) herbal medicines. However the interactions of drug metabolism between bio-converted herb and drug were not studied. The differences between inhibitory potentials of HR and bio-converted HR on the activity of nine major human cytochrome-P450 (CYP) enzymes in human liver microsomes were evaluated using CYP cocktail inhibition assay. HR potently inhibited CYP1A2-catalyzed phenacetin *O*-deethylation with 50% inhibitory concentration (IC<sub>50</sub>) values of 2.9  $\mu$ M, and CYP2D6-catalyzed dextromethorphan *O*-demethylase with IC<sub>50</sub> values of 25  $\mu$ M. Meanwhile, bio-converted HR by HR-217, HR-227 and HR-348 inhibited CYP1A2-catalyzed phenacetin *O*-deethylation with IC<sub>50</sub> values of 9.2  $\mu$ M, 7.2  $\mu$ M and 9.0  $\mu$ M, and CYP2D6-catalyzed Dextromethorphan *O*-demethylase with IC<sub>50</sub> values of 263.6  $\mu$ M, 34.6  $\mu$ M and 29.4  $\mu$ M. These *in vitro* results suggest that bio-converted herbal medicines should deplete potency of CYP inhibition of original herbal medicines.

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