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Effect of Dihydromyricetin on Cytochrome P450 Isoforms CYP1A2, CYP2C9 and CYP3A4 in Rats

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***SUMMARY*. The purpose of this study was to find out whether dihydromyricetin (*DMY*) influences the effect on rat cytochrome P450 (CYP) enzymes (CYP1A2, CYP2C9 and CYP3A4) by using cocktail probe drugs *in vivo*. A cocktail solution at a dose of 5 mL/kg, which contained phenacetin (20 mg/kg), tolbutamide (5 mg/kg) and midazolam (10 mg/kg), was given as oral administration to rats treated with 14 days oral administration of *DMY*. Blood samples were collected at a series of time-points and the concentrations of probe drugs in plasma were determined by HPLC-MS/MS. The corresponding pharmacokinetic parameters were calculated by the software DAS 2.0. Our study showed that treatment with multiple doses of *DMY* had no effect on rat CYP1A2. However, *DMY* had significant inhibition effect on CYP2C9, and CYP3A4 enzyme activity was induced after multiple doses of *DMY* treatment. *DMY* can either inhibit or induce activities of CYP2C9 and CYP3A4. Therefore, caution is needed when *DMY* is co-administration with some CYP substrates in clinic, which may result in herb-drug interactions.**

KEY WORDS: Cocktail, CYP, *DMY,* Herb-drug interaction.

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