Co-administration with Tetrandrine Alters the Pharmacokinetic Profile of Four Probe Drugs of Cytochrome P450 Enzymes in Rats

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SUMMARY. The present study aimed to investigate the effects of tetrandrine (Tet) on cytochrome P450 (CYP450) enzymes (CYP1A2, CYP2C9, CYP2D6 and CYP3A4) of rats by using four cocktail probe drugs (phenacetin, tolbutamide, metoprolol, and midazolam). After pretreatment for 14 consecutive days with Tet (treatment group) or saline (control group) by oral administration, probes were given to rats by oral administration. Blood samples were obtained at a series of time-points and the concentrations of four probe drugs in plasma were determined by a UPLC-MS/MS method. The results showed that treatment with Tet had a significant inductive effect on CYP1A2, CYP2C9, CYP2D6, and CYP3A4. Therefore, caution must be needed during the concomitant use of Tet with other drugs metabolized by the corresponding enzymes because of potential drug-Tet interactions. In addition, we found that Tet may be effective in reducing serum uric acid.

KEY WORDS: cocktail, CYP450, pharmacokinetics, tetrandrine, UPLC-MS/MS.

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