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Effects of Emodin on the Activities of CYP2C Enzymes in Rats Using a Cocktail Approach

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***SUMMARY*. Emodin is the most important anthraquinone isolated from the herbal drug rhubarb. Up to date, some anthraquinones have been shown to alter the activity of Cytochrome P450 (CYP). However, the relevance between emodin and CYP is unclear. Therefore the present objective of our study was to evaluate the potential effects of emodin on CYP isozymes CYP2C9 and CYP2C19 in rats with a cocktail approach involving probe substrates of tolbutamide and omeprazole. Healthy male Sprague-Dawley rats were randomized to be given 50 mg/kg.d emodin (emodin group) or 10 mL/kg.d corn oil (control group) for 7 days. Two substrates were concurrently administered to rats after 7 days treatment. The pharmacokinetics of the two probe substrates were determined simultaneously by liquid chromatographic mass spectrometric (LC-MS). The main pharmacokinetic parameters of omeprazole were not affected in rats by emodin. But the $Cl_{z/F}$ of tolbutamide (0.029 ± 0.003 *versus* 0.021 ± 0.003 L/h.kg) was significantly decreased, the $AUC_{(0\text{-}t)}$ (91825.387 ± 12236.976 *versus* 126325.146 ± 13579.534 h.ng/mL) and $AUC_{(0\text{-}\infty)}$ (105500.398 ± 10443.67 *versus* 148558.54 ± 22779.076 h.ng/mL) were increased notably in rats from control group *versus* emodin group ($P < 0.05$). The findings of this study suggested that emodin tended to inhibit CYP2C9, but did not influence CYP2C19.**

KEY WORDS: Cocktail approach, CYP, Emodin, LC-MS, Probe substrate.

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