



Effects of Methyl Methacrylate on CYP450 Activities in Rats

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SUMMARY. To study the effects of methyl methacrylate (MMA) on CYP450 activities in rats, three probe drugs (phenacetin, tolbutamide and omeprazole) were simultaneously given to rats which were randomly divided into 2 groups (n = 8 each): Control-group and MMA-group. In Control-group, castor oil was administered to animals orally; in MMA-group, rats were given 2.80 g.kg⁻¹.d⁻¹ MMA orally. The plasma concentrations of three probes were measured by LC-MS after administration for 14 consecutive days. The pharmacokinetic parameters were calculated by DAS 2.0 program. The result showed there was obvious difference in plasma concentrations and corresponding pharmacokinetic parameters of phenacetin, tolbutamide and omeprazole between two groups. In MMA-group, the AUC and C_{max} of three probe drugs decreased significantly (P < 0.01) and the Cl and V_d increased significantly (P < 0.01). As for t_{1/2}, no influences were observed in phenacetin and omeprazole, but the t_{1/2} of tolbutamide increased significantly (P < 0.05). In conclusion, MMA can induce the activity of CYP1A2 and CYP2C11 of rats significantly after intragastric administration for 14 days.

KEY WORDS: CYP450, Methyl methacrylate, Pharmacokinetic, Probe drug.

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