

**P02**

**Effects of Caffeine and Pentoxifylline on Pharmacokinetics  
of Propentofylline**

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Propentofylline (PPF), a xanthine derivative, has been reported to be effective for the treatment of both vascular dementia and Alzheimer's disease. The elimination half-life of PPF was ranged from 15 to 45 min in rabbit and human, and PPF was rapidly disappeared from the blood. The objective of this experiment is to investigate whether xanthine analogues have effects on the profile of plasma concentration and metabolism of PPF. Caffeine (50 mg/kg, ip) was treated to Sprague-Dawley rats for consecutive 7 days and PPF was intravenously administered to rats 2 hr after the last dose of caffeine. In the other group, PPF was intravenously administered to rats 1 hr after a single dose of pentoxifylline (50 mg/kg, iv). Control group was treated with saline vehicle for the same period as in treatment groups. Blood was withdrawn at specific time intervals. PPF and one of its metabolite (POH) in plasma were determined by gas chromatography/nitrogen phosphorus detector. Plasma concentrations and pharmacokinetic parameters were compared between groups. The area under the curve (AUC) of PPF in rats treated subchronically with caffeine was significantly decreased compared to control rats. Caffeine treatment results in a significant increase of total body clearance. The AUC of POH was significantly decreased in the caffeine-treated group. A single dose of pentoxifylline has no effect on the pharmacokinetics of PPF. Reduction of the AUCs of PPF and POH both suggests that caffeine may increase the excretion of PPF with no affecting the metabolism of PPF to POH.