A-46: Absorption and demethylation of caffeine in rats following administration of caffeine, caffeine with tea infusion and caffeine with polyphenol free tea infusion

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Absorption and demethylation of caffeine were studied following administration of caffeine in aqueous solution with tea infusion and with polyphenol free tea infusion to male Sprague Dawley rats (180-200g). The dose administered was 100 mg/kg body weight and samples were collected over 30 h.

HPLC was used to analyse caffeine and its metabolites. Absorption of caffeine from the gastrointestinal tract was highest when caffeine was administered with tea infusion when compared to pure caffeine or caffeine with polyphenol free tea infusion. The metabolites detected in serum were theophylline, theobromine and paraxathine in all 3 modes of administrations. The peak levels were observed at 10 h following administration of caffeine alone and caffeine with polyphenol free tea infusion, and at 24 h for caffeine with tea infusion. These levels were significantly ($p<0.05$) higher following administration of caffeine with tea infusion when compared to caffeine alone and caffeine with polyphenol free tea infusion. The area under the curve of metabolites and the ratio of area under the curve of metabolites to that of caffeine were higher with caffeine with tea infusion.

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