

**Tea (*Camellia sinensis*) infusions decreased serum clenbuterol accumulation in mice**

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**Disclosures**

The authors declare that they have no conflict of interest.

**Short title:** Tea reduce serum clenbuterol accumulation.

## **Abstract**

Clenbuterol hydrochloride (CLB), a long acting  $\beta$ -2 adrenergic agonist, is not only widely used as a bronchodilator and drugs in clinical management, but also illegally used as growth promoters in animal production. However, misuse from inexperienced users have resulted in severe adverse reactions. The purpose of this study was to investigate the effect of tea on the serum concentration of CLB. We found that serum CLB concentration was  $2.407 \pm 1.282 \mu\text{g/mL}$  at 1 h, climbed to  $5.095 \pm 2.107 \mu\text{g/mL}$  at 3 h, and then continuously decreased to  $1.406 \pm 0.083 \mu\text{g/mL}$  at 24 h after CLB (1 mg/kg) treatment. And, green tea infusion (1%, 2% and 4%) treatments significantly reduced serum CLB accumulation in response to CLB injection ( $p < 0.05$ ) with at 1 h after CLB treatment, indicating that tea infusion could prevent CLB accumulation. Moreover, compared to the CLB-treated control, 3 different tea infusion (2% of green tea, black tea, or dark tea) treatments for consecutive 7 days significantly reduced serum CLB accumulations with a time course within 72 h after CLB treatment. Particularly, tea infusions can decreased serum CLB by approximately 2/3 at 24 h after CLB treatment in mice after tea infusions-treated. In conclusion, these results indicated that serum CLB was significantly decreased by tea infusion in mice, which can promote to use tea and its products as diet in animal husbandry for eliminating CLB accumulation and as nutrition in human for reducing the adverse effects of CLB.

**Keyword:** clenbuterol, tea infusion, serum, mice