

Antimicrobial Effects of *Camellia sinensis* urine metabolites against Uropathogenic *E. coli*, *P. aeruginosa*, and *K. pneumoniae*

Hoiner Kyle C. Bofetiado, Cedric John A. Sta. Lucia, Lois Kyle Zabat and Marc Philip R. Ocoma
Adventist University of the Philippines

Abstract

Urinary tract infections (UTIs) are one of the most common complications in the Philippines today. This study aimed to determine the antimicrobial effects of *Camellia sinensis* (green tea) against pathogens that cause UTI. The study utilized the convenience sampling technique and interventional-experimental method. Ten healthy participants were screened through routine urinalysis and urine culture; urine was then collected before and after drinking 4.5g of pure green tea leaves brewed with 500 ml of water at 98°C for 5-10 minutes. The pooled first morning urine, 0-4-hour urine, and 4-8-hour urine were mixed, autoclaved, and used as solvent for preparation of MH agar respectively. Inoculation of the test organisms onto the MH agar were done in triplicates with check plates. After overnight incubation, an average of 140000 Colony Forming Units were significantly reduced in Urine-MH agar with green tea metabolites collected within less than 4 hours showing its greatest activity. It was found out that catechins, which are the main bioactive antibacterial compound in green tea, were effective against *E. coli* and *K. pneumoniae* but not against multi-drug resistant *Pseudomonas aeruginosa*. Further study can be done to harness the effects of catechins in other food sources other than green tea.

Keywords: *urinary tract infection, Camellia sinensis, catechins*