

Antimicrobial activity of fingerroot [*Boesenbergia rotunda* (L.) Mansf. A.] extract against streptococcus mutans and streptococcus sobrinus

ABSTRACT

The extract of medicinal plants fingerroot [*Boesenbergia rotunda* (L.) Mansf. A.] obtained using 100% methanol was tested for antibacterial activity against two major pathogen of dental carries namely *Streptococcus mutans* KCCM 3309 and *Streptococcus sobrinus* KCCM 3207. The minimum inhibitory concentration (MIC), minimum bactericidal concentration (MBC) and time-kill curve on *S. mutans* and *S. sobrinus* were analyzed using Clinical and Laboratory Standard Institutes (CLSI) methods. Preliminary antimicrobial screening showed the mean zones of inhibition for *S. mutans* (9.0 mm) and *S. sobrinus* (8.0 mm). MIC value obtained for *S. sobrinus* and *S. mutans* was 313 µg/ml while the MBC values were 313 µg/ml (*S. mutans*) and 625 µg/ml (*S. sobrinus*). Time-kill curve were obtained at concentrations of 0xMIC, 1/2xMIC, 1xMIC, 2xMIC, 4xMIC and 8xMIC. *S. mutans* was found to be more susceptible to the fingerroot extract than *S. sobrinus*. Time - kill curve showed that the concentration of 8xMIC was able to kill 99.9% of *S. mutans* after 4 hours treatment. These results may be useful for developing fingerroot *B. rotunda* as natural anticariogenic agent in toothpaste or any oral care products such as mouthwash in treatment of dental carries, sore throat and flaming gums.