

Abstract

Body (axillary) malodor is a common problem that adversely affects social interactions due to the interaction between sweat glands and bacterial activity such as *Staphylococcus aureus*. To address this, three deodorant formulations (F1, F2, and F3) each containing active ingredients of 0.5%, 0.3%, and 0.3% concentration with an additional boosting agent were being evaluated through *in vitro* testing, including bacterial growth and standard curve, Kirby-Bauer test, and time-kill assay. All formulations exhibit antibacterial activity, however to further confirm the potency of antibacterial ingredients, a preliminary test should be conducted prior performing time-kill assay. No inhibition zones were observed however time kill assay demonstrated a complete bacterial eradication. Additionally, consumer acceptability was tested through sensory evaluation using 5-point hedonic scale from "dislike extremely" to "like extremely" and 5-point QDA scale from 1-non detectable attribute to 5-clearly detected attribute. Sensory attributes including odor, transparency, color, stickiness, spreadability, odor intensity, drying speed, amount of residue, stinging sensation, and overall likeness were assessed. No significant differences were found between F1, F2, and F3, signifying that differences of active ingredient concentration and an additional boosting agent did not change any sensory perception. More distinct differentiation might be observed under higher concentration differences and longer evaluation time. This study aims to determine optimal balance between functional efficacy and consumer appeal by assessing antibacterial activity and sensory attributes of different deodorant formulations.

Keywords: *Deodorant, Staphylococcus aureus, In vitro testing, Sensory evaluation*