日本香粧品学会誌　Vol. 49, No. 4, pp. 255–263（2025）

〈一般論文〉

香料の緑膿菌の抗菌薬感受性増強効果

野 村 陽 恵[1,*]，佐久間克也[2]，一 色 恭 徳[1]

Effects of Fragrance Ingredients on the Antibacterial Agents Susceptibility of *Pseudomonas aeruginosa*

Harue NOMURA[1,*], Katsuya SAKUMA[2], Yasunori ISSHIKI[1]

(Accepted: September 30, 2025)

Abstract

We screened 1022 kinds of fragrance ingredients (206 kinds of natural and 816 kinds of synthetic fragrance ingredients) for the enhanced effect on the susceptibility of *Pseudomonas aeruginosa* against antibacterial agents. Total 6 kinds of ingredients (2 of ketones, esters and acids) showed increased effect on antibacterial susceptibility of *P. aeruginosa*. We estimated the effects of these fragrance ingredients by using a checkerboard method, to clarify the additive and/or synergy effects of all ingredients in the combination with *β*-lactams, aminoglycosides and quinolones. In particular, Diacetyl, Allyl *iso*-thiocyanate and Propionic acid exerted synergy effects on the combination with GM or ABPC. Furthermore, we evaluated the effects of these fragrance ingredients on the efflux pumps of *P. aeruginosa*, but they did not show inhibitory effects on efflux pumps of *P. aeruginosa*. We demonstrated that fragrance ingredients possessed the enhanced efficacy on the susceptibility of *P. aeruginosa* against several antimicrobial agents. This finding has been found to be useful in suggesting the possibility of a new treatment for *P. aeruginosa* infections.

Key words: fragrance ingredients, *Pseudomonas aeruginosa*, antibacterial agents, synergistic effect, efflux pump.