

〈原 著〉

皮膚常在菌による体臭中のイソ吉草酸発生の解析 とクララエキスによるその抑制

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Analysis of Isovaleric Acid Generation by Skin Resident Microorganisms in Body Malodors, and the Inhibitory Effect of *Sophora flavescens* Extract

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Abstract

It is well known that body malodors are generated by the metabolism of skin resident microorganisms from dead skin cells and excreted materials, such as sweat and sebum. However, there have been relatively few reports elucidating their biochemical relationship in detail. We have paid a lot of attention to isovaleric acid, which is considered to be the main cause of body malodors, and have researched its generation pathway by skin resident microorganisms. As a result, we confirmed that skin resident microorganisms had the ability to generate isovaleric acid from L-leucine. We also found that *Corynebacterium xerosis* had the highest capacity for isovaleric acid generation among all the skin resident microorganisms. These results suggest that L-leucine, which is considered to be derived from dead skin cells, would be the main precursor of isovaleric acid in body malodors. Next, we evaluated many kinds of plant extracts for their inhibitory efficacy on the generation of isovaleric acid by *C. xerosis*. Consequently, *Sophora flavescens* extract showed a significantly high inhibitory effect. Furthermore, it was found that the flavonoids in *S. flavescens* extract had a bactericidal effect against not only *C. xerosis* but also other skin resident microorganisms. It was suggested that the broad bactericidal spectrum of *S. flavescens* extract would play an important role in the suppression of many kinds of body malodors.

Key words: isovaleric acid, *Sophora flavescens*, L-leucine, *Corynebacterium xerosis*, flavonoids.