日本香粧品学会誌　Vol. 48, No. 1, pp. 2–8（2024）

〈教育セミナー〉

第48回教育セミナー（2023）・「皮膚を見る・観る・診る～最新の可視化技術レビュー～」

生体イメージングによる皮膚免疫応答の可視化

江川形平*

Visualization of Skin Immune Responses by Intravital Imaging

Gyohei EGAWA*

Abstract

The skin, being the organ that covers the body surface and interfaces with the external environment, is constantly exposed to various external stimuli such as pathogens, chemicals, and ultraviolet radiation. In order to counteract these, the skin forms a robust barrier structure and houses complex mini-organs such as hair follicles and sweat glands. Additionally, various immune cells like T cells and dendritic cells migrate within the skin, orchestrating diverse immune responses. The ability to observe these processes three-dimensionally and over time, known as "*in vivo* imaging," becomes a powerful tool in dermatological research. In this article, we outline fundamental research and insights obtained from observing mouse skin using two-photon excitation microscopy. Furthermore, in the latter part, we discuss the current status and prospects of *in vivo* imaging of human skin.

Key words: two-photon microscopy, T cell, dendritic cell, Langerhans cell, vascular permeability.