

〈シンポジウム II〉

『化粧品の『未来に続く最先端科学』』

生体イメージング技術を用いた外来抗原に対する免疫応答の解明

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**Understanding the Epicutaneous Immune Responses Using Two-Photon Microscope**

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**Abstract**

Varieties of immune cells orchestrate cutaneous immune responses. To capture such dynamic phenomena, intravital imaging is an important technique and it may provide substantial information that is not available using the conventional histological analysis. Multiphoton microscopy enables the direct, three-dimensional, and minimally invasive imaging of biological samples with high spatio-temporal resolution, and it has now become the leading method for *in-vivo* imaging studies. Using fluorescent dyes and transgenic reporter animals, not only skin structures but also cell- and humor-mediated cutaneous immune responses have been visualized. In this review article, I will introduce some recent findings in cutaneous immune responses in mice and skin structures in the perspective of skin diseases using two-photon microscope.

**Key words:** atopic dermatitis, contact dermatitis, inducible skin associated lymphoid tissue (iSALT), dendritic cell, live imaging.