

Live-imaging technique to visualize behavior of melanocytes in the skin of chicken embryo

Ryosuke Tadokoro

Department of Zoology, Graduate School of Science, Kyoto University

Our skin and hair have various colors, which are established by melanin pigment. Melanin pigmentation in the skin is physiologically important to protect our body from UV irradiation. Melanocytes are known as melanin-producing cells in which melanin is synthesized in melanosomes. In the tanning processes, melanocytes extend numerous dendrites that are attached to surrounding keratinocytes, and subsequently melanin granules are transferred through melanocyte dendrites to keratinocytes. Although several different models for intercellular melanin-transfer have been proposed by *in vitro* experiments and electron microscopic observations, the mechanisms of melanin-transfer *in vivo* remain controversial^{1,2,3,4,5,6,7,8}. So far, we developed an imaging technique, and visualized behavior of melanocyte during skin pigmentation in chicken embryo. We found that melanocytes release vesicles. In this study, first, we statistically showed the difference of vesicle size between the tissues. Second, to analyze molecular mechanism underlying the difference, we established a gene transfer technique to manipulate melanocytes and keratinocytes by other genes respectively *in vivo*.