

Sexual Dichromatism on the Tail Colour Change of Blue-tailed Skink (*Plestiodon elegans*)

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Abstract

Ontogenetic colour change in animals is an interesting evolutionary question, which has been studied by evolutionary biologist for decades. However, the main challenge is how to measure the colour quantitatively and continuously in a full life cycle for lizards. We used the spectrometer approach to measure the tail colour of Blue-tailed Skink (*Plestiodon elegans*) from birth to sexual mature. The spectrometer approach is simple, fast, and accurate depending on animals' visual sense, to measure the tail colour of skink. We showed a strong relationship between colour indexes (values of L*, a*, b*) and growth time of skink. Moreover, we found colour rhythms are different between sexes, which may influenced by their unique behavior strategies between sexes. Therefore, our study carried out a continuously measuring the tail colour change from larva to adults to investigate the mechanism for ontogenetic colour change in reptiles and to explain the potential factors that driving the dichromatism between sexes in lizards.

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