

In musculoskeletal system, the structure physically determines the function. Therefore, the muscle insertion point might be precisely determined. However, how the muscle insertion point is regulated remains unknown.

Urodele amphibians, such as the newt *Cynops pyrrhogaster*, have high regenerative ability, including the ability to regenerate their limbs, including joints. In the course of limb regeneration, they first make a miniature structure of the lower arm. Even when the regenerated part is still miniature, they can move their lower arm. In this sense, the musculoskeletal pattern and joint structure have been already functional. Therefore, we hypothesized that newts may have the ability to organize the musculoskeletal pattern and joint structure, harmonizing the proximal remaining parts and the distal regenerating parts.

In order to observe the harmonizing process clearly, we cut the limb at the elbow joint and confirmed that they can regenerate the functional musculoskeletal pattern and joint structure, although the size of the upper arm and lower arm are quite different.

In this study, we would like to describe how the full-sized regenerated pattern is produced, especially, how tendons are formed, and how they are modified in association with the rapid growth of the lower arm during regeneration by immunohistological analysis.