# Laboratory of Biohistory

## JT Biohistory Research Hall


(Left) Guest Professor Zhi-Hui SU su.zhihui @brh.co.jp

(Right) Guest Professor Chikara HASHIMOTO hashimoto @brh.co.jp

Guest Associate Professor Hiroki ODA hoda @brh.co.jp

URL: https://www.brh.co.jp/


By deciphering the historicity, diversity, and commonality of living things written in genomes, we conduct experimental researches on development, evolution, and ecosystems of living things, as well as research on expression of study results. By investigating diverse organisms without focusing on individual genes or species, we believe that the fundamentals of development and speciation in the process of evolution can be revealed. We place the love of living things at the basis of our researches and also disseminate it. In the Laboratory of Biohistory, we are conducting the following studies on evolutionary and developmental biology.

### Insect-plant interactions and evolution

Interactions between organisms are one of the driving forces of evolution and speciation. In particular, insects and plants interact with each other in various ways, such as food resources and pollination mutualism. The diversities of insects and plants have been facilitated by establishing mutually adaptive relationships in these interactions. We investigate the processes and mechanisms of evolution and speciation in insect-plant interactions.

### Degenerative evolution of insect flight function

The acquisition of wings is the most important event in the evolutionary process of insects, and it is believed to have contributed to their diversity. On the other hand, not a few extant insects have lost their wings and flight ability. We investigate the molecular mechanisms underlying the degenerative evolution of flight function in insects.

### Origin and evolution of cell and developmental systems in multicellular animals

Multicellular animals have epithelial tissues that shape the body, and have diversified their form since their success in organizing body axes and repetitive structures. What kinds of cell and developmental systems existed at the origin of animal diversity, and what kinds of changes have driven the diversification. We are tackling these problems both experimentally and theoretically.

### Mechanism of chordata gastrulation

Gastrulation is a critical stage in the formation of the fundamental body plan. We constructed a brand-new model of amphibian gastrulation, and found that the model is adaptable to the chordata species. Now we are interested in how this tissue movements were conserved in throughout the species.

### Relationship between cell cycle and differentiation

In the study of vertebrate neural crest and planarian stem cell, we found that the causal relationship between proliferation and differentiation is conserved among multicellular organisms. Thus, we propose that proliferation maintains the undifferentiated status and cell cycle exit to G0 dictates cells to become competent to accept induction signals.

生命誌絵巻

Become a member of the Biohistory Laboratory, which is creating a new form of life research through comprehensive study and expression of the historicity and relationships of living things, including development, evolution, and ecology, and make the most of new ideas.


JT Biohistory Research Hall
1-1 Murasaki-cho, Takatsuki, Osaka
569-1125, Japan

TEL: +81-72-681-9750

FAX : + 81-72-681-9743


Scan here for the lab's website >>