

Laboratories available at the 4th year

<https://www.bio.nagoya-u.ac.jp/english/laboratory/index.html>

Research Project Samples

- ✧ Expression of novel type rhodopsin in zebrafish for optogenetic control of neurons
- ✧ Metabolic regulation of satiety behavior in *C. elegans*
- ✧ Uncovering the Neural Pathway of Experience-dependent Changes of Song Preferences in *Drosophila melanogaster*
- ✧ Diet modulates age-associated decline of chemotaxis in *C. elegans*
- ✧ *L. reuteri* alleviates age-dependent decline in thermotaxis behavior of *C. elegans* through daf-16 b isoform
- ✧ The chromatin-remodeling complex SWN/SNF in axon regeneration in *C. elegans*
- ✧ Investigating Target Engagement of Novel Circadian Clock Modulating Compounds
- ✧ Exploring the effect of temperature on the hearing systems and auditory behaviors of *Aedes aegypti* mosquitoes
- ✧ The nutritional state-dependency of chemotaxis ability in aged *C. elegans*
- ✧ Molecular basis of the effects of aging and diet on *C. elegans* thermotaxis behavior
- ✧ Age-dependent chemosensory modulation by neuropeptides in *C. elegans*
- ✧ Exploring germline sex-determination and the functionality of an AID system in the teleost fish, medaka (*Oryzias latipes*)
- ✧ Analysis of the Effect of Tight Junction Modulating Drugs on C-REV's Therapeutic Efficacy Against Pancreatic Cancer
- ✧ Bioinformatics analysis of single-cell RNA sequencing data of wild-type mice lung cells infected with SARS-CoV-2 or Influenza viruses.
- ✧ Understanding the sex-specific roles of histone modification during meiosis in the teleost fish, medaka (*Oryzias latipes*)
- ✧ Cofilin Induces Conformational Changes in Adjacent Bare Actin Segments

- ✧ Investigating and Elucidating the Role of CRY1 in the *Aedes aegypti* Circadian Clock
- ✧ Understanding the evolution of a 'stealth' phenotype of the SARS-CoV-2 Omicron variant
- ✧ Exploring the natural variation in strigolactone perception of different *Striga hermonthica* ecotypes
- ✧ Age-dependent changes in *C. elegans* immune response to viral infection
- ✧ Investigating the relationship between organismal lifespan and behavioral aging using feeding RNAi in *C. elegans*
- ✧ Sperm influences the chemotaxis behavior of *Caenorhabditis elegans* throughout development and aging
- ✧ Viral shedding and transmissibility in immunocompromised COVID-19 patients: implications for isolation strategies
- ✧ A Non-invasive Approach to Characterizing the Progression of Colorectal Cancer using Health Check-up Data
- ✧ Investigating the auditory mechanisms driving reproductive isolation between *Aedes aegypti* and *Aedes albopictus*
- ✧ Development of a Behavioural Assay and Automated Analysis Pipeline for Quantifying Mosquito Aggregation and Phonotaxis in *Aedes aegypti*
- ✧ Investigating the Developmental Bases of Sexual Dimorphisms in the Auditory Efferent System of *Aedes aegypti*
- ✧ Identification of DDX21 as a candidate scanning ribosome-associated factor in Pancreatic Ductal Adenocarcinoma (PDAC) cells
- ✧ Novel circadian compounds reveal a new mode of CRY regulation: A qualitative control of the interaction between CRY and CLOCK-BMAL1
- ✧ Predicting Dengue Secondary-Infection Neutralization Status Using Protein Large Language Models