CORE FACILITY UPGRADING PROGRAM Chicken / Quail

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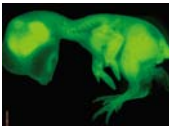
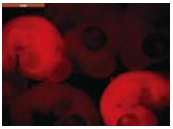
Overview

The chicken and quail are important model organisms in life sciences, which bridge the evolutionary gap between mammals and other vertebrates and serve as the main laboratory models for ~9,600 extant avian species. Avian Bioscience Research Center (ABRC), Nagoya University contributes to advancement of avian science research as the core facility of avian resources under NBRP of the MEXT.

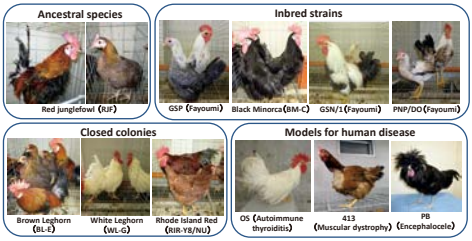
The ABRC develops the stable system to maintain, preserve and distribute chicken and quail resources. We also collect novel resources, develop them to resources of high global standard under strict genetic control, and distribute them to the community of scientists. We construct the database of the resources, which is widely open to the public via the homepage, and enhance it by adding science-based information obtained using the resources. We have also generated a high quality chromosome-scale assembly of the Japanese quail genome in collaboration with the Quail Genome Consortium of Japan and published it from our homepage (http://viewer.shigen.info/uzura/index.php).



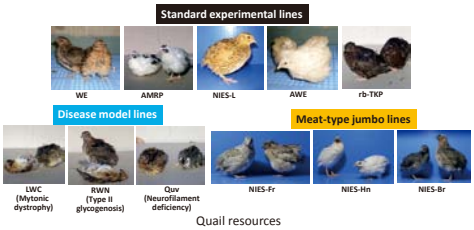
pLSi/ΔAeGFP-TG chicken



PGK:H2B-chFP-TG quail



Chicken resources



Quail resources

Key Strains/Studies

The ABRC distributes 33 strains and/or lines of chickens including the red junglefowl (the wild ancestor of domesticated chickens), inbred strains, and models for human diseases, and 22 lines of Japanese quail including standard lines and a variety of plumage mutants. Moreover, we distribute transgenic chicken and quail lines that express fluorescent proteins.

GSN/1

A highly inbred strain originated from the Fayoumi chicken breed native to Egypt. This has been maintained as a closed colony for more than 30 years. Skin grafts are acceptable between different individuals. The genotyping of microsatellite DNA markers revealed that 50 loci used for genetic monitoring are all fixed in the homozygous condition, indicating that this strain is very suitable for experiments for which high reproducibility and accuracy are required.

WE

A Japanese quail line that lays white-shelled eggs, which has been maintained as a closed colony for more than 50 years. This line is used as a standard line for producing vaccine of Marek's disease and toxicity assays of chemicals including pesticides.

pLSi/ΔAeGFP-TG chicken and PGK:H2B-chFP-TG quail

Transgenic chicken and quail lines carrying fluorescent protein genes. The chicken and quail lines express enhanced green fluorescent protein (eGFP) and monomer cherry fluorescent protein (chFP), respectively, in the almost whole body.