

# Genetic characteristics of Apodemus speciosus at Akiyoshidai Quasi-National Park in Yamaguchi Prefecture

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**Manuscript Source:** <https://www.biorxiv.org/content/10.1101/2021.03.21.436340v1>

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### Research Paper Sections:

The sections of the research paper input text parsed in this audit.

[illegible]

Title      **Genetic characteristics of Apodemus speciosus at Akiyoshidai Quasi-National Park in Yamaguchi Prefecture**

**S1 [001]      Abstract**

**S1 [002]**      The large Japanese field mouse (*Apodemus speciosus*) is a small rodent endemic to Japan.

The large Japanese field mouse ...  
... (*Apodemus speciosus*) ...  
... is a small rodent endemic ...  
... to Japan.

**S1 [003]**      The mice have a genetic characteristic in which the number of chromosomes differs between those from western Japan and those from eastern Japan.

The mice have a genetic characteristic ...  
... in which the number ...  
... of chromosomes differs ...  
... between those ...  
... from western Japan ...  
... and those ...  
... from eastern Japan.

**S1 [004]**      *A. speciosus*, found throughout Japan, is used as a model animal for geogenetics and monitoring of radiation effects of wildlife.

*A. speciosus*, ...  
... found ...  
... throughout Japan, ...  
... is used ...  
... as a model animal ...  
... for geogenetics ...  
... and monitoring ...  
... of radiation effects ...  
... of wildlife.

**S1 [005]**      In this present study, to elucidate the genetic characteristics of the mice Akiyoshidai Quasi-National Park in Yamaguchi Prefecture, we investigated mitochondrial DNA and chromosome numbers.

In this present study, ...  
... to elucidate the genetic characteristics ...  
... of the mice Akiyoshidai Quasi-National Park ...  
... in Yamaguchi Prefecture, ...  
... we investigated mitochondrial DNA ...  
... and chromosome numbers.

**S1 [006]** As a result, *A. speciosus* from Yamaguchi Prefecture were classified into the Honshu-Shikoku-Kyushu group and had a western Japan-type chromosome set of  $2n=46$ ; however, some Yamaguchi Prefecture mice formed a genetic cluster in Yamaguchi Prefecture, suggesting that continuous monitoring is needed to reveal the dynamics of genetic diversity.

As a result, ...  
... *A. speciosus* ...  
... from Yamaguchi Prefecture were classified ...  
... into the Honshu-Shikoku-Kyushu group ...  
... and had a western Japan-type chromosome set ...  
... of  $2n=46$ ; ...  
... however, ...  
... some Yamaguchi Prefecture mice formed a genetic cluster ...  
... in Yamaguchi Prefecture, ...  
... suggesting ...  
... that continuous monitoring is needed ...  
... to reveal the dynamics ...  
... of genetic diversity.

## **S2 [007] Introduction**

**S2 [008]** The large Japanese field mouse (*Apodemus speciosus*) is a small rodent species endemic to Japan.

The large Japanese field mouse ...  
... (*Apodemus speciosus*) ...  
... is a small rodent species endemic ...  
... to Japan.

**S2 [009]** *A. speciosus* inhabit the entire Japanese islands except for Okinawa and is frequently used as a model for studies of geographic isolation.

*A. speciosus* inhabit the entire Japanese islands except ...  
... for Okinawa ...  
... and is frequently used ...  
... as a model ...  
... for studies ...  
... of geographic isolation.

**S2 [010]** The genetics of *A. speciosus* is characterized by different chromosome numbers in the east and west of Japan within a species.

The genetics ...  
... of *A. speciosus* is characterized ...  
... by different chromosome numbers ...  
... in the east ...  
... and west ...  
... of Japan ...  
... within a species.

**S2 [011]** This characteristic karyotype is caused by a Robertsonian translocation (Shimba and Kobayashi 1969) and these translocated chromosomes were detected by FISH analysis (Yamagishi et al. 2012), which indicate that the mice are important species for genetic research.

This characteristic karyotype is caused ...  
... by a Robertsonian translocation ...  
... (Shimba ...  
... and Kobayashi 1969) ...  
... and these translocated chromosomes were detected ...  
... by FISH analysis ...  
... (Yamagishi et al. 2012), ...  
... which indicate ...  
... that the mice are important species ...  
... for genetic research.

**S2 [012]** Recently, *A. speciosus* was used as animals to monitor the effects of radiation around nuclear power plants.

Recently, ...  
... *A. speciosus* was used ...  
... as animals ...  
... to monitor the effects ...  
... of radiation ...  
... around nuclear power plants.

**S2 [013]** Especially, *A. speciosus* was used to monitor spermatogenesis and chromosomal abnormalities in Fukushima Prefecture (Okano et al. 2016; Takino et al. 2017; Ariyoshi et al. 2018; Fujishima et al. 2020).

Especially, ...  
... *A. speciosus* was used ...  
... to monitor spermatogenesis ...  
... and chromosomal abnormalities ...  
... in Fukushima Prefecture ...  
... (Okano et al. 2016; ...  
... Takino et al. 2017; ...  
... Ariyoshi et al. 2018; ...  
... Fujishima et al. 2020).

**S2 [014]** Decreases in the number of hematopoietic progenitor cells and chromosomal abnormalities were reported (Ariyoshi et al. 2020; Kawagoshi et al. 2017), indicating that *A. speciosus* was actually important in clarifying the effects of radiation on wildlife.

Decreases ...  
... in the number ...  
... of hematopoietic progenitor cells ...  
... and chromosomal abnormalities were reported ...  
... (Ariyoshi et al. 2020; ...  
... Kawagoshi et al. 2017), ...  
... indicating ...  
... that *A. speciosus* was actually important ...  
... in clarifying the effects ...

... of radiation ...  
... on wildlife.

**S2 [015]** Although much genetic analysis has been performed, the sequence information is not sufficient to cover the whole of Japan.

Although much genetic analysis has been performed, ...  
... the sequence information is not sufficient ...  
... to cover the whole ...  
... of Japan.

**S2 [016]** Many geogenetic studies were performed especially in the Japanese islands, but the information available on Honshu is not comprehensive.

Many geogenetic studies were performed especially ...  
... in the Japanese islands, ...  
... but the information available ...  
... on Honshu is not comprehensive.

**S2 [017]** In the island genetics research, genetic diversity in the Seto inland sea region, Hokkaido and other remote islands were reported (Sato et al. 2017; Suzuki et al. 2015).

In the island genetics research, ...  
... genetic diversity ...  
... in the Seto inland sea region, ...  
... Hokkaido ...  
... and other remote islands were reported ...  
... (Sato et al. 2017; ...  
... Suzuki et al. 2015).

**S2 [018]** The research leads to the elucidation of the genetic diversity of *A. speciosus* on the islands; however, *A. speciosus* needs more genetic consideration in each region of Honshu.

The research leads ...  
... to the elucidation ...  
... of the genetic diversity ...  
... of *A. speciosus* ...  
... on the islands; ...  
... however, ...  
... *A. speciosus* needs more genetic consideration ...  
... in each region ...  
... of Honshu.

**S2 [019]** In this present study, we focused on mitochondrial DNA (mtDNA) sequences and chromosome numbers to clarify the genetic information of *A. speciosus* in Yamaguchi Prefecture, mainly in Akiyoshidai Quasi-National Park.

In this present study, ...  
... we focused ...  
... on mitochondrial DNA ...  
... (mtDNA) ...  
... sequences ...  
... and chromosome numbers ...  
... to clarify the genetic information ...

## **End of Sample Audit**

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