

Amami Laboratory of Medical Science

奄美医科学研究施設

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The Amami Laboratory of Medical Science has a long history originating from the branch office of the Institute for Infectious Disease which was established in 1902. We have made great achievements in filariasis eradication from this island and prevention of Habu bites. Currently, we are maintaining colonies of New World monkeys, and aiming to overcome endemic infectious diseases in tropical and subtropical regions through infection experiments using non-human primates.

Reproduction of squirrel monkeys and owl monkeys

Squirrel monkey (*Saimiri* sp.) and Owl monkey (*Aotus* sp.) are both New World monkeys native to the tropical rainforests in Central and South America. The advantages of using these species for medical researchers are their easy-to-handle size and gentle behavior. In particular, bolivian squirrel monkey (*Saimiri boliviensis*) and owl monkey (*Aotus lemurinus griseimembra*) are well known as capable candidates for animal model of human malaria. Squirrel monkeys are polygamy and have a breeding season from early spring to summer. Female squirrel monkeys reach puberty at the age of 3-4 and males at the age 4-5. Their gestation period is about 150 days. In 2025, eight newborns were successfully bred in accordance with our reproduction scheme. On the other hand, owl monkeys are monogamy, and they are capable of breeding year-round under artificial rearing conditions. However, the owl monkeys in our facility have become an all-male colony, thus breeding has been discontinued for the foreseeable future.

Research using non-human primates

A notable aspect of our laboratory is the unique International Joint Usage and Research Center's capa-

bility of conducting infectious experiments using bolivian squirrel monkeys and owl monkeys. The 3rd building completed in 2023 has animal experimental rooms under biosafety level 2 and 3 condition. One of which is for experiments on mosquito-borne infectious diseases in non-human primate, and was used for experiments on malaria this year. We are currently working with collaborators from several institutions to develop an infection model on experimental monkeys to assess the anti-malarial activity of new compounds and vaccines.

Research on the control of snakebite envenoming

Snakebite envenoming is still a serious health problem in many tropical and subtropical countries. It was recognized by the World Health Organization (WHO) as a neglected tropical disease in 2009, and was elevated into Category A of the Neglected Tropical Diseases list in 2017. In the past, the Amami laboratory played an important role in research and development of antivenom serum for Habu (*Protobothrops flavoviridis*), a species endemic to Japan. At present, we are conducting research with collaborators aimed to elucidate the detail components of Habu venom through genome analysis, etc. and the results shall contribute to the better control of snakebite envenoming around the world.