

変異マウス開発チーム

Laboratory for Animal Resources and Genetic Engineering

チームリーダー 相澤 慎一

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変異マウス作成をどれだけ効率よく行えるかは、今日では生命科学研究を左右すると言って過言ではない。技術と施設を要し、それぞれの研究課題をもつ研究者が、変異マウス作製を自ら立ち上げなければならないのは不効率なことである。しかし残念ながら、我が国にはこれを支援するシステムが成立していない。当研究チームは我が国の発生・再生研究において変異マウス開発の拠点となり、官民を問わず分野の研究発展に貢献することによって、新しい時代の実験動物学創出を目指す。

本年度の中頃から動物センターの完成に伴い、計画通り変異マウスの作製および生産が順調に進行し、多数の KO や Tg マウスの作製が完了している。これら作製した変異マウスは、体外受精など生殖工学技術を用いた、変異マウスコロニーの作製や凍結保存による系統保存も随時行っている。また、微生物学的クリーニング、動物のウエルフェアに配慮した飼育管理などのサービスも行い、クローン技術など新しい技術を開発・導入して発生・再生研究に貢献する。

平成 15 年度の計画として、KO マウスについては研究者からのマウス遺伝子配列情報の提供を受けるのみで、ターゲットベクター作製からキメラマウス作製を当研究チームで一貫して行う予定である。

The Laboratory for Animal Resources and Genetic Engineering (LARGE) provides an important suite of services related to the generation of experimental mice to labs within the CDB and around Japan. In its role as a CDB support laboratory, the LARGE team, under CDB Deputy Director Shinichi Aizawa, produces transgenic and knockout mouse models to the specifications of scientists working in a wide range of genetic, embryological, and biomedical research projects, maintaining the highest quality standards and rapid turnaround to ensure fast and easy access to researchers working within the Center and throughout the country. In addition to these core functions, the LARGE staff provides a number of other services, such as nuclear transfer cloning, isolating homologous recombinants and culturing embryonic stem cells, and works to develop improved methods of sample handling and storage, such as higher-efficiency modes of cryopreservation. The lab. also performs a number of maintenance and logistical functions, such as the specific pathogen free (SPF) housing, cleaning, processing and distribution of animals.

In the coming year, the LARGE team plans to expand its services and initiate new programs, notably the generation of target vectors from sequence information alone, and the independent production of novel genetically-modified

constructs, a drive that is anticipated to generate on the order of 80–100 new mutant strains per year. Such strains serve as research platforms with the potential to provide new insights into a range of important research problems, from the developmental mechanisms of organ development to the genetic bases of human disease. The lab. will also function as part of Japan's system of Mouse Embryo Banks, with a special emphasis on producing, storing and cataloging embryos for use in developmental biology and regenerative medical research.

Research Subjects and Members of Laboratory for Animal Resources and Genetic Engineering

1. Generation of mutant mice by knockout, transgenic, clone, and other technology
2. Development of new technology in mammals
3. Animal housing and welfare

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