



December 2005



BioResource now! No.12 is here

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Download the PDF version of this newsletter at
<http://www.shigen.nig.ac.jp/shigen/news/news.jsp>

Bioresources information is available at the following URL:

NBRP (<http://www.nbrp.jp/index.jsp>)
 SHIGEN (<http://www.shigen.nig.ac.jp/indexja.htm>)
 WGR (<http://shigen.lab.nig.ac.jp/wgr/>)
 JGR (<http://shigen.lab.nig.ac.jp/wgr/jgr/jgrUrlList.jsp>)

Information on Resource-related Events

- March 9 NBRP symposium at the Tokyo International Forum
- March 19–21 NBRP panel exhibitions, etc. being planned at the Annual Meeting of the Japanese Society of Plant Physiologists
- May 12–13 Panel exhibition at the Annual Meeting of Japanese Association for Laboratory Animal Science
 “Laboratory Animals as Bioresource: The Present and Future” being planned

Detailed information is available at the following URL: <http://www.nbrp.jp/index.jsp>



News from the Resource Center: No. 5

The special project at the 28th Annual Meeting of the Molecular Biology Society of Japan has been completed with great success. There were 3,515 participants at the panel exhibitions and 260 participants at the symposium. We are thankful to all the participants for their cooperation. The summaries of the inquiry surveys, etc. are available at http://www.nbrp.jp/questionnaire/result_200512.html

The 8th Genetic Resource Committee convened on 21st December 2005. Published conference notes are available at <http://shigen.lab.nig.ac.jp/shigen/grc/>



Introduction to Resource Center No. 4



“RIKEN BRC Making Available the Mouse Strains You Developed to the World”

Atsushi Yoshiki, Ph. D., General Manager, Experimental Animal Division, RIKEN BioResource Center
 Yuichi Obata, Ph.D., Director, RIKEN BioResource Center

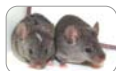


Please refer to the following website.

<http://www.brc.riken.jp/lab/animal/>

Feel free to e-mail animal@brc.riken.jp for any questions regarding mice.

Conventional mice are also accepted for deposit.



■ Mouse resources are distributed by the center

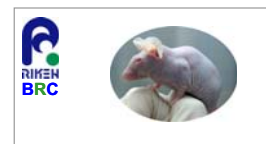
- live mice, frozen embryos and sperms, organs, and tissues
- 2 to 3 pairs of seed animals per order in principle
- Please inform the center if many samples are required for experimentation.

[1] Significance and Overview of the Bank Operations

In order to promote life-science research that is rich in originality and internationally competitive, our country must independently consolidate biological genetic resources (bioresources) as research materials. Experimental mice are used in numerous research fields and are one of the most essential bioresources. The Experimental Animal Division of RIKEN BioResource Center (RIKEN BRC) has been collecting, conserving, and distributing the domestically developed strains of experimental mice. As the post-genome era approaches, elucidating the functions of genomic genes in vivo is becoming the central focus. In vivo researches will be essential for future life-science research. Since experiments involving humans as subjects are not permitted in most cases, the use of model animals is indispensable. Mice are highly controlled genetically and microbiologically, and numerous strains that are excellent for experimental reproducibility have been developed. Hence, mice in which gene and embryo manipulations are possible are precious resources. RIKEN BRC was established in 2001. A year later, it was ranked as the primary institute for mice following the open recruitment and the nomination for the “National BioResource Project (NBRP)” supported by the Ministry of Education, Culture, Sports, Science, and Technology (MEXT). We particularly focus on the collection, preservation, and distribution of model mice for five disease domains—brain and nerves, development and regeneration, immunology and allergy, infectious disease, and cancer—and those of biological functions. Further, we are focused on the simultaneous development of related technologies. Protecting the intellectual property rights of the domestic researchers who developed the resources and promoting the uses of these resources have been considered as a part of our undertakings. Since 2004, training programs that promote awareness regarding the handling techniques for advanced resources have been initiated. Since its establishment, RIKEN BRC has been supported by numerous researchers and the number of strains retained exceeded 1,600. Thus, based on world rankings, if the retention number is taken into account, we are second only to the Jackson Laboratory in the US. Moreover, the deposit number at RIKEN BRC exceeds 1,500 per year and we fulfill not only domestic but also international requests. Thus, we play an active role as an international resource center (*Nature* 432: 541, 2004).



Elucidation and Reconstruction of Genetic Functions on an Individual Level



Disease Models
 Elucidation and Reconstruction of Disease Models for the Development of Drug Design, Diagnosis, and Treatment Methods.

[2] Status of Mouse Resources in the World

Presumably, 10,000 strains of mice have been established worldwide. Soon, 300,000 strains of mice, including those developed with ES cells, will be constructed by a development project that aims to develop and integrate large-scale genetically engineered mouse strains in the US and Europe. In April 2005, a total of 19 institutes—principal mouse resource centers in the world such as Jackson Laboratory, European Mutant Mouse Archive (EMMA), CARD at Kumamoto University, and RIKEN BRC, etc.—cooperated and established the Federation of International Mouse Resources (FIMRe: <http://www.fimre.org>) with the intention of promoting life science research and eventually contributing to the continuous prosperity of humankind by constructing a system which allows these mouse resources to be effectively used worldwide. Agreements related to the international transactions of mice and standardization of genetic and microbiological quality controls are also being investigated. In addition, in order to increase convenient utilization, FIMRe organized the mouse strains available at each center (including live mice, frozen embryos and sperms, ES cells) into the International Mouse Strain Resource database (IMSR: <http://www.informatics.jax.org/imsr/indx.jsp>) and agreed to publicize it as a One-Stop Shop.

Currently, approximately 6,500 mouse strains are registered at IMSR. As soon as we complete procedures such as verification of the specific pathogen-free (SPF) condition of mice that are deposited in RIKEN BRC, the mice will be registered at IMSR and made available worldwide in laboratories such as Jackson Laboratory or EMMA. The information provided by IMSR reveals that requests for international distribution have increased significantly and that the mice deposited at the RIKEN BRC are clearly attracting attention from researchers worldwide. In addition, according to the investigations by ATCC, when the developed resources were deposited and released in public banks such as RIKEN BRC, the citation frequency of published articles that used these mice showed an increase by as much as 88%. We would like the users to acknowledge the benefits of the deposited strains (http://www.brc.riken.jp/lab/animal/catalogue/mtakitaku_merit.html) and effectively utilize the resources offered by RIKEN BRC.

Federation of International Mouse Resources (FIMRe: <http://www.fimre.org/>)



The number of mouse strains currently existing in the world is estimated to be approximately 10,000 and is expected to increase dramatically in the near future. The principal mouse resource centers in the world have organized and established the International Federation in order to preserve and maintain frozen embryos, gametes, ES cells of mouse strains, and live mice and to effectively and efficiently distribute them.

[3] Securing Intellectual Property Rights and MTA

Intellectual property rights related to mice have been discussed at FIMRe. Policies regarding the intellectual property rights of mouse strains vary across countries and with every center. RIKEN BRC ratifies the Material Transfer Agreement (MTA) that defines the rights of developers and the conditions of usage at the time of deposit and distribution with the objective of protecting the developer's right and promoting the use of developed resources. In keeping with the terms of the MTA, we ensure deliberate negotiation when distributing mice to the institutes abroad so that the developer's rights are not violated. It is expected that in the future, the demand for international contribution in the field of life science and intensive international competition will occur simultaneously. Hence, securing the intellectual property rights of resources that are developed by internationally acclaimed Japanese researchers is essential for Japan's life science to expand with internationality and originality. We sincerely hope that users understand the importance of securing advanced resources in the country and actively utilize the resource center in the country. We would like to further consolidate the position of the resource center so that it is more easily accessible to researchers and enables them to make their mice as well as their mice information available worldwide. ■



A training program that aims to promote advancement in technology that develops, preserves, and distributes resources to the researcher's community will be held.

It is titled "Experimental Animals: Freeze Preservation Procedure of Mouse Sperm and Embryo" Participation: 3 - 4 days, once or twice in a year. In a Small Group, under Personal Guidance Details of the Program and Application Procedure are posted on our website (April - May)



RIKEN BRC General Catalogue

New edition (7th ed.)
Received good reviews. (Catalog is free, postage is charged)
Requests to be mailed to:
animal@brc.riken.jp

※ Pictures provided by Dr. Yoshiki at RIKEN BRC.



Hot news from abroad: No. 9

After the 1st International Biocurator Meeting

The 1st International Biocurator Meeting convened at Asilomar Conference Center (Pics. 1, 2, and 3) in CA, USA, from 8th to 10th December. It was sponsored by the Genetics Society of America. The enthusiastic response it received exceeded expectations; 25 titles were orally presented, 83 titles of posters were presented, and there were approximately 170 participants, including 8 Japanese participants. Of these, 70% of the participants held a Ph.D., 37% were self-designated curators, and 46% were females. On the 9th and 10th, after breakfast, from 7:30 am, a plenary speaker conducted a lecture that was followed by three sessions, each with several speakers. The poster session continued after dinner until 10:00 pm. Despite the hectic schedule, the goal of information sharing was greatly achieved since all the participants were present at the venue from the beginning to the end, including at meal times. The Powerpoint files for the 25 titles which were presented orally will be accessible at <http://biocurator.org/>. In addition, the URL collection of all the participants will be listed on this newsletter site very shortly.



(Pic 1)



(Pic 2)



(Pic 3)

After obtaining the approval of a majority of the participants, it was determined that the meeting will be continued. Dr. Gojobori will represent Asia to be an organizer for the next meeting. It will be held in the UK the next year, then in the US, and next in Japan. Although curators are indispensable for genome annotation, ontology construction, and article curation, relying solely on curators when there are numerous articles has its limitations. Hence, it was proposed that it is necessary to implement a system where authors curate their own articles and register them in the database. However, I have yet to decide how to place a biocurator in Japan. Furthermore, I also feel that the conditions in the world are quite different. (Author: Yukiko Yamazaki)



Announcement for the Next Issue



Special Topic on DNA!

RIKEN BRC Gene Engineering Division

Editor's Note: The introductory article on the mouse resource center was contributed as a third in the series by RIKEN BRC. The center has developed in a short period of time and as an Asian representative, it displays leadership in international cooperation. It is greatly trusted as a center for mouse resources in Japan along with CARD at Kumamoto University. My sincere thanks to the Director of BRC, Dr. Obata, and the General Manager, Dr. Yoshiki. Due to their efforts, this newsletter was published for all twelve issues without a break during this year. I appreciate your cooperation and will be grateful for your support in the future. I wish you all a happy new year. (Y.Y.)

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