For Trust, Sustainability and Leadership
RIKEN celebrated its centennial on March 20, 2017. The current year of 2018 marks another milestone, the 60th anniversary of RIKEN’s becoming a public corporation and national institute in 1958, after going through periods in which it was a private foundation and then a private company.

The Act on RIKEN, National Research and Development Institute (Act No. 160, Dec 2002) states that as a national R&D institute, “RIKEN aims to raise the standard of science and technology by comprehensively carrying out experiments, researches and other operations related to science and technology.”

RIKEN has consistently maintained this objective throughout its transitions from public corporation to independent administrative institution, and now, national research and development institute. RIKEN is the only national organization charged with conducting comprehensive research in all areas of science and technology, not only to researchers in academia but also to those in the private sector, with large-scale facilities and equipment such as supercomputers and the SPring-8 synchrotron facility, as well as bioresources. In this regard, the RIKEN BioResource Research Center (BRC) has long served as one of RIKEN’s core infrastructure centers.

Finally, precisely because RIKEN is not limited to any specific one research field, our third strategy is to pioneer new research fields. One approach has been to create a Pioneering Research Cluster that represents a modern adaptation of the Chief Scientist system to foster free thinking and innovative ideas initiated by RIKEN’s third President Masatoshi Okochi.

In addition to these three strategies, RIKEN is actively engaged in “co-creation” and “collaboration” activities with domestic universities, industry, and research institutes for the purpose of finding solutions for global issues and implementing them in society. RIKEN plays a major role as a hub for science and technology innovation. Dr. Kotaro Honda, a former RIKEN Chief Scientist, once said “Industry is the practice field of learning;” but improving the standard of science and technology cannot be achieved solely by publishing scientific papers. RIKEN’s objective is to work for “science in society and science for society” in cooperation with industry and local communities. With this in mind, RIKEN BRC is working to expand its activities with a satellite facility in Keihanna Science City.

RIKEN’s management policies are outlined in the RIKEN Initiative for Scientific Excellence and form the key pillars of RIKEN’s fourth mid-to-long-term plan. We greatly appreciate your understanding of our various activities and ask for your continued guidance and support as we strive to achieve our mutual goal of growth and achievement.

RIKEN Initiative for Scientific Excellence

Fulfilling RIKEN’s mission to generate world-class results

1. Pioneer a research management model for maximizing research and development results
2. Lead the world in achieving new research and development results through scientific excellence
3. Become a hub for science and technology innovation
4. Serve as a focal point for global brain circulation
5. Foster the development of world-class leaders in scientific research

RIKEN, National Research and Development Institute has embarked on the Fourth Mid- to- Long-Term Plan from April 1st, 2018. On the very same day, RIKEN BioResource Center changed its name to RIKEN BioResource Research Center (RIKEN BRC). We are committed to collecting, preserving, and distributing bioresources of the world’s highest level and to promoting research and development that facilitates the use and application of bioresources.

Bioresources, often referred to as biological resources, are essential experimental materials for life science research. Since its establishment in 2001, RIKEN BRC has been focusing on the major bioresources; i.e., experimental mouse strains, model plants, cell lines of human and animal origin, genetic materials, as well as relevant information associated with these bioresources. In 2005, microorganisms have been included in our scope. RIKEN established BRC as a research infrastructure for life science, by the understanding and support of Japanese government and half century-long request from research community. In order to respond to their expectation, we have been mainly collecting bioresources originally developed in Japan, so as to become a unique facility serving the world. Our Center is valuable for scientific community only when our bioresources are used. Therefore, our mission has been to collect and provide bioresources of the highest quality with guaranteed reproducibility in experimental results. So far, with the great support by research community, our Center has grown up to be one of the three major repositories of each of respective bioresources in the world. In these years, we have provided approximately 7,000 domestic institutions and 5,000 overseas institutions in 69 countries. In addition to these bioresource operations, we are engaged in Key Technology Development for effective and efficient preservation of bioresources that ever increases in number as well as in Bioresource Frontier Program for characterizing bioresources and developing novel bioresources that meet the need.

Sustainable and stable operation is required for a research infrastructure. However, as existence of needs is the precondition, we should grasp social and research needs as well as research trend and collect and provide required bioresources. Research is moving fast. New fields of sciences are explored one after another, and novel bioresources are constantly developed and demanded. Therefore, sustainability and leadership are required in the strategic operation of the Center while sustainability and flexibility is required for managing the organization. From this aspect, the Fourth Mid- to-Long-Term Plan had been discussed within our Center for more than 2 years and went through processes of vigorous review and recommendations by the international BioResource Center Advisory Council (BRAC) as well as the domestic committees including the five Resource Committees and the Review Committee for R&D. Out of these discussions and proposals, we terminate three of the existing research and development teams and create three new teams within the framework of the Bioresource Frontier Program. One of them is “the iPS Cell Advanced Characterization and Development Team” to accelerate drug discovery using the prominent discovery and invention of our nation, iPS cells, especially those derived from patients with intractable diseases. The other is “the Plant-Microbe Symbiosis Research and Development Team” to promote research for environment and food production. The last is “the Next Generation Human Disease Model Team” to realize precision medicine for age-related diseases and intractable diseases. Moreover, “the Drug Discovery and Development Team”, established in 2017 with the support of Kyoto Prefectural Government and RIKEN President and launched in cooperation with Kyoto University the Center for iPS Cell Research and Application (CRA), has started full-scale operation in a facility located in Keihanna Science City in 2018. In addition, we established a new “Integrated Bioresource Information Division” by uniting two function-related sections and expanding their capacities.

For founding RIKEN BRC, “the Report of Preparatory Committee for the Establishment of BioResource Research Center (Chairperson: Haruo Sugano, the former Director of Cancer Institute; Vice-Chairperson: Kazuo Moriwaki, the former Director of RIKEN BRC)” published in 2000 stated that “Research” should be included in its name, but the word “Research” had not been inserted for various reasons. “Research” is finally included after 18 years of operational activity. It is well said “No Resource, No Research” but vice versa, “No Research, No Resource.” BioResource Research Center will make an innovative effort to maximize synergetic effect between our resources and research activity. RIKEN BRC is committed to functioning as a research infrastructure under the three principles of “Trust, Sustainability, and Leadership.” We ask for your understanding and continued support.
The Fourth Mid-to-Long-Term Plan of RIKEN BRC

Collect, preserve and provide bioresources of the world first class with regard to usability, associated information and quality by grasping social and research needs (I), develop basic technologies for preservation and usage of bioresources (II), conduct research and development that promote active use of our bioresources (III). By all these activities, we aim to contribute to the effective and efficient promotion of cutting-edge research and innovation and to solution of social problems.

The Plans

I. Bioresource Infrastructure: Collect, preserve and provide cutting-edge

- Experimental Animal (mouse): Animal models for understanding of sophisticated life phenomena, promoting human health and conquering diseases R&D: Genome-edited KO and KI mice
- Experimental Plant: Maximizing the power of plants R&D: Stress response
- Cell Lines: From basic life science research, clinical research to innovation R&D: Hematopoietic stem cells

II. Key Technology Development: Develop novel technologies for effective and efficient preservation and quality control of bioresources

- Genetic Materials: Learn from living things and use their power R&D: Vectors with tissue-specific markers
- Microorganisms: Promotion of researches on health and environment R&D: Isolation, identification and characterization of microbes involved in symbiosis
- Integrated Bioresource Information: No Information, No Resource R&D: Visualize analyzed results of genome information, disease states and images of biological dynamism, and develop novel methods for utilization of bioresources

III. Bioresource Frontier Program: Conduct bioresource-related R&D to solve social problems

- IPS Cell Advanced Characterization
- iPS-Cell-based Drug Discovery (Keihanna)
- Plant-Microbe Symbiosis
- Next Generation Human Disease Model
- Mammalian Genome Dynamics
- Mouse Phenotype Analysis

Mission

Providing bioresources to life science researchers worldwide

No Resource No Research

Environmental Issues
R&D for bioenergy production, Global warming and biodiversity

Infectious Diseases
Eradication of disease mechanisms, Discovery based on genome information

Brain Science
Holistic understanding of cognition, memory, learning, health, and diseases

Food Production
Diets and nutrition

Basic and Fundamental Research
Essential materials supporting all fields of life science

Cancer Research
Advanced and novel methods for diagnostic, treatment and prevention

Innovative Drug Development
Discovery based on genome information

Global Network of Bioresources

- Varieties and quantity of bioresources produced and needed have been increasing dramatically and already exceeded the capacity of a single biological resource center or even single country.
- Global standardization or harmonization of quality of bioresources is needed.
- Need for Global Network of Bioresources

General

- Asian Network of Research Resource Centers (ANRRC)
- Mouse
- Human and Animal Cells
- Plant
- Microbes

International Research Infrastructure

- No or minimum licence fee for academic use of bioresources produced by research tools owned by commercial entities

Promotion of Research and Development by Mediating between Depositors and Users

- Material Transfer Agreement
- MTA*: For Deposition
- MTA**: For Distribution

No Resource No Research

Environmental Issues
R&D for bioenergy production, Global warming and biodiversity

Infectious Diseases
Eradication of disease mechanisms, Discovery based on genome information

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Holistic understanding of cognition, memory, learning, health, and diseases

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No Resource No Research
For basic researches to study our health and diseases

Mouse

We collect, preserve and distribute high-quality mouse resources useful for basic researches to contribute our health.

We develop novel mouse resources and technologies for preservation, distribution and quality control.

We offer training courses for advanced technologies for best use mouse resources.

(Experimental Animal Division and Bioresource Engineering Division)

Arabidopsis

Dicot model plant

We distribute mutant Arabidopsis resources that are useful for functional genomics.

(Experimental Plant Division)

Brachypodium

Monocot model plant

We distribute resources and technologies of Brachypodium that help crop breeding research.
Cell

The cell engineering division is providing a high quality cell lines free of mycoplasma infection and misidentification. In order to contribute not only to basic sciences but also to applied sciences, we are providing various cell materials such as human cancer cell lines, ES cells, iPS cells, and human somatic stem cells.

In addition, we are also offering training courses for the technologies relating to cell culture.

(Cell Engineering Division)

Gene

We aim to facilitate life science research for improvement of human welfare and for solution of environmental issues and hope to contribute to the sustainable development of science.

Genetic materials are the most fundamental and essential research tools. They are used in the all fields of the life science, from basic to applied researches.

The time has come to order genetic materials instead of cloning by yourself.

You can easily find genes of your needs by on-line search in our web site.

(Gene Engineering Division)
Microbe

For environmental preservation and human health

We are contributing to a wide range of researches from basic to innovation by collecting and providing diverse authentic type strains and their related strains of microorganisms.

We hold a number of microbial strains useful for researches for solution of environmental issues such as production of bioenergy, development of biodegradable plastics, and bioremediation.

These are also strains that are beneficial for health science such as improvements of enteric condition and immunological competence, antibiotic production, and fermented food.

(Microbe Division/Japan Collection of Microorganisms)

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(Microbe Division/Japan Collection of Microorganisms)

Gene Engineering Division

NBRP DNA material

Head

Yuichi OBATA, Ph.D.

● Cutting edge resources that can accelerate researches that contribute to the elucidation of higher-order biological phenomena and the cause of diseases, the development of medical treatment, the drug discovery research and/or the problems in environment: reporter vectors visualizing biological activity, efficient gene transduction and expression vectors.

● Highly useful and convenient resources: variety of standard DNAs extracted from microorganisms, mice and cultured cells and ready-to-use expression vectors.

● Highly reliable biological resources with highest quality: quality tests under rigorous control and abundant literatures and information of biological characteristics.

Experimental Animal Division

NBRP Mice

Head

Akashih YOSHII, M.D.

● Collection, preservation, quality-control and distribution of mouse resources useful for basic researches to understand the higher-order biological phenomena and to conquer human complex diseases.

● Contribution to the promotion of life sciences by fostering research courses to disseminate advanced technologies for the best use and quality control of mouse resources in collaboration with global mouse repositories.

Experimental Plant Division

NBRP Arabidopsis

Head

Masatomo KOBAYASHI, M.D.

● Collection, preservation and distribution of Arabidopsis resources that are indispensable for plant science.

● Establishment of research infrastructure of Brachypodium distachyon, a model crop that contributes innovation in agriculture.

● Development and propagation of plant cultured cells, DNA materials and related technologies that promote studies on the environment, food, and production of useful materials.

Cell Engineering Division

NBRP Human and Animal Cells

Head

Yuki NAKAMURA, M.D.

● Collection and distribution of the following cells: cultured cell lines such as human cancer cell lines; stem cells such as ES cells, iPS cells (including disease-specific iPS cells) and human somatic stem cells; cells for human genome research.

● Accepting donation and deposition of cells that have been developed by life science community, carrying out quality control of them, standardizing them, and distributing high quality cell materials to all scientists around the world.

● Offering training courses of the technologies relating to cell culture, so as to contribute to the development of new technology such as human ES cells and iPS cells.

Integrated Bioresource Information Division

Head

Yasushi OOMATA, M.D.

● Collection, analysis, management of bioresource information and its dissemination to research communities through the web-based catalogs.

● Improvement of technologies for sharing and application of bioresource-related information in the Internet.

● Analysis and visualization of large-scale data to promote expanding uses and values of bioresources and contribution to solving various problems of human beings.
Support Unit for Quality Management

Uniform international quality standard : ISO 9001

- QMS (Quality Management System) in order for RBC to achieve total customer satisfaction and to deliver the highest value biological resources and services on time.
- Endeavor to deliver the biological resources of reliable quality.
- Maintenance of ISO 9001 certification to deliver the biological resources of reliable quality, and horizontal development of ISO management system framework.
- Endeavor for customer satisfaction, human resource development and continual improvement, based upon Total Quality Management (TQM) which has made Japanese manufacturing industry very strong.
- Realization and standardization of high-quality, speedy and simple job process, by means of the data digitization making use of the latest Information Communication Technology (ICT).

Bioresource Engineering Division

- Nuclear transfer cloning: Establishment of an efficient technique for production of cloned mice. A great leap to the practical use of cloning technology in mammals.
- Microinsemination (sperm injection): Production of normal mice using not only normal mature spermatooza, but also immature spermatids and spermatozoa retrieved from frozen mouse bodies.
- Cryopreservation of embryos and germ cells and their transportation: Development of embryo cryopreservation techniques applicable to a variety of mouse strains. Safe transportation of vitrified embryos in dry ice packages to avoid the use of dry shippers.
- Establishment of new stem cell lines: Mouse ES cells with different characters and different origins. Rabbit ES cells and iPS cells with potential usefulness as new experimental models.
- Technical training courses: Cryopreservation of sperm and embryos, and establishment and maintenance of mouse embryonic stem cells.

Technology and Development Team for Mammalian Genome Dynamics

- Technology development for functional genomic analysis: methods for high resolution genotyping and genome manipulation utilizing high quality BAC genomic resources.
- Technology development for characterization of embryo-derived stem cells and germ cells; analysis of molecular and epigenetic features of these cell types using novel imaging techniques and genomic analyses at single-cell level.
- Technology development for bioimaging: analysis of cellular behaviors and functions in vivo utilizing an intravitral microscope equipped with novel stick-type lenses.

Japan Mouse Clinic

- Systematic and comprehensive phenotypic analyses for genetically-modified mice based on the fundamental and in-depth pipelines in the Japan Mouse Clinic.
- Contribution to international mouse phenotyping project through the participation to International Mouse Phenotyping Consortium (IMPC).
- Intellectual infrastructure for the mouse resource through the integration of mouse phenotype information with the related clinical data on human diseases.
- Development of new phenotyping methods to analyze mouse resources.

iPSC-based Drug Discovery and Development Team

- Leading drug discovery technology that will open a avenue for new medicines.
- Using iPS cells of BioResource Center to develop infrastructure technology for drug discovery and medical study.
- Bridging RIKEN BRC and academia/industry in the field of translational iPS cell research.
- Engage in the development of drug discovery researches using disease-specific iPS cells of RIKEN BRC cellbank at Keihanna in collaborating with the Cell Engineering Division, and Center for iPS Cell Research and Application (CiRA), Kyoto University.

IPS Cell Advanced Characterization and Development Team

- Advanced characterization (e.g., pluripotency and genome) of disease-specific iPS cells deposited in RIKEN cell bank.
- Development of modified (e.g., mutation-corrected, mutation-introduced, and reporter-introduced) iPS cells using genome-editing technologies.
- Development of differentiation system and disease models using disease-specific iPS cells deposited in RIKEN cell bank/collaborative researches with domestic and international research communities.

Next Generation Human Disease Model Team

- Development of mouse models faithfully recapitulating genomic mutations and pathology of designated intractable diseases or diseases of the aged based on the patients’ genome information by the genome modification technology.
- Analyses and evaluation of the mouse models through the standard, disease-specific and ageing-specific phenotyping platforms of the international standard.
- Establishment of POC in preclinical studies by investigating disease mechanisms and pharmacokinetics in collaboration with experts.
- Provision of disease models with useful information for diagnosis, therapies and drug discovery to biomedical research community.

Plant-Microbe Symbiosis Research and Development Team

- Elucidation of the symbiosis between plants and rhizosphere microbes including mycorrhizal fungi.
- Construction of biosources and experimental systems of experimental plants and rhizosphere microbes for the symbiosis studies.
- Contribution to building a sustainable solution for world food and environmental problems through collaborative researches with domestic and international research communities.

Drug Discovery and Medical Technology Platforms: DMP

IPS Cell Research Unit for Drug Discovery

- This unit belongs to RIKEN Program for Drug Discovery and Medical Technology Platforms (RIKEN DMP).
- Basic researches using disease-specific iPS cells to identify the causal and/or associated cells of each disease.
- Development of methods to screen chemicals for drug discovery with the causal and/or associated cells derived from disease-specific iPS cells.
- Refinement of technologies to induce the causal and/or associated cells efficiently from disease-specific iPS cells, and the mass production of such cells for chemical screening.

Shinozaki Research Collaborative Group

- Construction of research infrastructure for the promotion of biomass engineering based on a model biomass plant Brachypodium.
- Contribution to advanced biosources on the collection of full-length cDNA and phenotype analysis of gene knock-out mutants in Arabidopsis.
- Discovery of useful genes for the application to molecular breeding of drought tolerant rice, wheat and soybean.
History

1917 March  RIKEN Foundation established.
1948 March  RIKEN Foundation dissolved and replaced by KAKEN (Kagaku Kenkyusho) Corporation
1958 October  RIKEN Act enforced.
1974 May  Dissolution of KAKEN Corporation and initiation of the Public Corporation RIKEN.
1984 October  Tsukuba Life Science Center founded.
1987 May  Gene Bank began operation.
2000 April  Tsukuba Life Science Center renamed Tsukuba Institute.
2003 October  RIKEN reorganized as Independent Administrative Institution.
2004 July  The Japan Collection of Microorganisms (JCM) in Discovery Research Institute in the Wako Institute was integrated with the BioResource Center.
2008 April  The second term as an independent administrative institution; Functional Genomics Research Group of the RIKEN Genomic Sciences Center was merged to the BioResource Center.
2011 January  RIKEN BRC 10th Anniversary
2012 October  JCM moved to Tsukuba campus.
2013 April  The third term as an independent administrative institution.
2014 October  "Tsukuba Institute" renamed "Tsukuba Branch".
2015 April  "Tsukuba Institute" renamed "Tsukuba Branch".
2016 October  RIKEN reorganized as Designated National Research and Development Institute.
2017 March  RIKEN 100th Anniversary.
2018 April  "BioResource Center" renamed "BioResource Research Center".

Budget (FY2017)

BioResource Center

Government subsidy/Operating expenses grant — 2.20 billion yen
Competitive external funds — 0.30 billion yen

Personnel (April, 2018)

- Developmental Research Staffs: 354
- Permanent Researchers: 30
- Contract Research Staffs: 39
- Technical Staffs: 79
- Special Postdoctoral Researchers: 2
- International Program Associates: 1
- Agency Staffs: 63
- Visiting Staffs: 36
- Outsourcing, Philantrons: 61
- Administrative Employees & Tsukuba Safety Center Staff: 61
  Total: 415

Organization

President of RIKEN

[Director: Yutaka OBATA, Ph.D.]
[Deputy Director: Kunio ABE, Ph.D.]
[Deputy Director: Masaharu KOBAYASHI, Ph.D.]

BioResource Research Center

- Advisory Council
- Resource Committee
- Review Committee
- Coordinator

BioResource Infrastructure Division
- Head: Katsuhiro YOSHIZAWA, Ph.D.
  [S. KOBAYASHI, Ph.D. (Secretary)]
- Head: Yuki NAKAMURA, M.D., Ph.D.
  [S. KOBAYASHI, Ph.D. (Secretary)]

Experimental Animal Division
- Head: Masahiro YOSHII, Ph.D. (Secretary)
  [S. KOBAYASHI, Ph.D. (Secretary)]

Experimental Plant Division
- Head: Masami KOBAYASHI, Ph.D. (Secretary)
  [S. KOBAYASHI, Ph.D. (Secretary)]

Cell Engineering Division
- Head: Yutaka OBATA, Ph.D. (Secretary)
  [S. KOBAYASHI, Ph.D. (Secretary)]

Gene Engineering Division
- Head: Motoyuki OHNUMA, Ph.D.
  [S. KOBAYASHI, Ph.D. (Secretary)]

Microbe Division
- Head: Michio OHNUMA, Ph.D.
  [S. KOBAYASHI, Ph.D. (Secretary)]

Regenerative Bioscience Information Division
- Head: Yutaka OBATA, Ph.D. (Secretary)
  [S. KOBAYASHI, Ph.D. (Secretary)]

Resource Advancement Unit
- Head: Hiroshi MASHIMA, Ph.D.
  [S. KOBAYASHI, Ph.D. (Secretary)]

Support Unit for Quality Management
- Head: Shigeo JOMOTEN

Bioresource Engineering Division
- Head: Akira OKAMOTO, VoM, Ph.D.
- Bioresource Frontier Programs
- Technology and Development Team for Mammalian Genome Dynamics
  [Team Leader: Junichi KIKUCHI, Ph.D.]
- Technology and Development Team for Human Phenome Research
  [Team Leader: Mamoru YAMAGUCHI, Ph.D.]
- IPS Cells Advanced Characterization and Development Team
  [Team Leader: Yohei NAKAMURA, Ph.D.]
- Next Generation Human Disease Model Team
  [Team Leader: Yutaka OBATA, Ph.D. (Secretary)]
- Plant-Microbe Symbiosis Research and Development Team
  [Team Leader: Yasuyuki TANAKA, Ph.D.]
- IPS Cell Research Unit for Drug Discovery (RIKEN OMD)
  [Team Leader: Yutaka OBATA, Ph.D. (Secretary)]
  [Research Collaborative Group]
- Human Research Collaborative Group
  [Lab Director: Katsuhiko HIREDAYAMA, Ph.D.]

Facilities

RIKEN BioResource Research Center

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RIKEN BioResource Research Center

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Activities of RIKEN BRC

**Participation in the International Mouse Phenotyping Consortium; IMPC**

International Mouse Phenotyping Consortium, IMPC was established in September 2011 for maintaining and expanding collaborative networks in phenotyping mice resources, with the goal to constitute a functional Encyclopedia of the Mammalian Genome. RIKEN BRC has committed to this effort. Outcomes of these collaborative activities will greatly contribute to enabling decipher of biological function to each gene, a better understanding of diseases, drug discovery and development as well as prediction of potential side-effects early in the drug discovery process, and moreover, deeper insights into higher biological functions. As of 2016 year-end, 18 organizations of 11 countries and regions are involved in the IMPC.

**Cooperation with among Asian Countries**

- We attended the 9th Annual Meeting of Research Resource Centers (ANRRC) International Meeting in Beijing in 2017.
- We attended the 11th Asian Mouse Mutagenesis and Resource Association (AMMRA) and the Asian Mouse Phenotyping Consortium (AMPC) business meeting in Incheon in 2017.
- We attended the 6th NanJing University MARC/RIKEN BRC/KMPC International Mouse Workshop in NIST Hotel, Incheon in summer 2017. Participants: 64 persons (3 countries).
- RIKEN BRC concluded MoU with the Korean National Research Resource Center (KNRRC) and Institute of Microbiology Chaminaden Academy of Sciences (IMCAS) in 2015.
- We provided opportunities for conducting research in RIKEN BRC to foreign researchers and students from France, Italy, Czech, Thailand, Malaysia, Indonesia, China and Korea in FY2017.
- RIKEN BRC concluded Record of Discussion (RoD) with the Biodiversity-Based Development Office (BEDO) in Bangkok in 2014.

**Training Courses: Advanced Technologies for the Best Use of Bioresources**

Courses (FY2017)

- Plant: Training course for basic technologies required for Arabidopsis research
- Cell: Training course for human iPSCs
- Microbiome: Basic instruction course for microbiology, isolation and preservation of filamentous fungi
- Reproductive Engineering: Technical training course for KI knock-in/knock-out (KO) and KO (retro)plasmid (KOP) injections of mice

Participants

Universities: Hokkaido, Yamagata, Tezuk, Korea, Tsukuba, Saitama, Tokyo, Tokyo Med, Tohoku, Yaohama, Kyoto, Nagoya, Nagoya Med, Tohoku, Gifu, Kyoto, Osaka, Hiroshima, Toyama, Kyoto, Oita, Shimane Med, Hiroshima, Medical, Tokyo, Saitama Med, Niigata Med, Kansai, Kobe, Tokai, Fujita Health, Osaka Dental, Konan University

Institutes: AST, NARC, NIES, NIBB

Industries: Pharmaceuticals, Food, Medical, Chemicals etc.

RIKEN’s Programs for Junior Scientists

The International Program Associate (IPA) is a non-Japanese doctoral candidate attending a Japanese or overseas graduate school participating in RIKEN’s joint graduate school program. The IPAs carry out research at RIKEN under the supervision of RIKEN scientists as part of work toward obtaining a PhD. Benefits include daily living expenses and a housing allowance. The Junior Research Associate (JRA) program provides part-time positions at RIKEN for young researchers enrolled in Japanese university participating in RIKEN’s Joint graduate school program. Remuneration includes salary and commuting allowance. The Special Postdoctoral Researchers (SPDR) is instituted to offer young and creative scientists the opportunity to be involved in autonomous and independent research that is in line with RIKEN objectives and research fields. RIKEN provides the SPDR with a salary and research budget.

**Public Relations Activities**

- We provide useful information about resources, protocols, Q&A etc. on our website.
- Our monthly newsletter and "the resource of the month" are dispatched by email from the Divisions.
- We introduce our activities, distribute handouts and answer questions from participants at our display booth at many scientific meetings.
- Our activities are on display at Tsukuba Science Innovation Center “BIVI Tsukuba.”
- We hold two public open days in the Science & Technology Week in April every year.
- We have an exhibition space for further understanding of our researches in the BioResource Building for Cell Research.
- We conduct BRC facility tour to nearly 1,500 junior high school and senior high school students every year.
- We plan to give a series of two-hour science lectures for adult citizens and offer hands-on learning opportunities at Tsukuba EXPO center.

**Tsukuba Global Innovation Promotion Agency**

Tsukuba Global Innovation Promotion Agency has been established for the purpose of becoming the new hub of leading academic innovations world-wide, as future suggested in “New Grand Design of Tsukuba,” by taking advantage of research institutions’ integrity at “Tsukuba International Strategic Zone” to full extent, BRC was appointed as organizer, Master’s/Doctoral program in Life Science Innovation was established in University of Tsukuba by this agency. Five scientists of BRC were delegated as guest professors in the program, They give a mandatory course on bioresource science and advocate the importance of bioresources.

**NBRP(National BioResource Project)**

General outline and purpose of the project

The National BioResource Project (NBRP) was started by the Ministry for Education, Culture, Sports, Science and Technology (MEXT) in 2002 and has been operated by the Japan Agency for Medical Research and Development (AMED) since FY 2015.

The aim of NBRP is to collect, preserve and distribute bioresources (such as animals, plants, microbes, cell lines and DNA materials) that are essential materials for life science researches, and to upgrade the bioresources responding to the demands of the present age by enriching values of bioresources through developing preservation technology, genome analysis and others. In addition, NBRP aims to improve the function of the information center which provides whereabouts and characteristics of bioresources.
### For further information

<table>
<thead>
<tr>
<th>Division/Team</th>
<th>URL</th>
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<tbody>
<tr>
<td>Experimental Animal Division</td>
<td><a href="http://mus.brc.riken.jp/en/">http://mus.brc.riken.jp/en/</a></td>
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<tr>
<td>Experimental Plant Division</td>
<td><a href="http://epd.brc.riken.jp/en/">http://epd.brc.riken.jp/en/</a></td>
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<td>Gene Engineering Division</td>
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<td>Microbe Division/JCM</td>
<td><a href="http://jcm.brc.riken.jp/en/">http://jcm.brc.riken.jp/en/</a></td>
</tr>
<tr>
<td>Support Unit for Quality Management</td>
<td>FAX +81-29-836-9523</td>
</tr>
<tr>
<td>Bioresource Engineering Division</td>
<td><a href="http://ja.brc.riken.jp/lab/kougaku/indexE.html">http://ja.brc.riken.jp/lab/kougaku/indexE.html</a></td>
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<tr>
<td>Technology and Development Team for Mammalian Genome Dynamics</td>
<td><a href="http://ja.brc.riken.jp/lab/mcd/mcd/pg2.html">http://ja.brc.riken.jp/lab/mcd/mcd/pg2.html</a></td>
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<td>Next Generation Human Disease Model Team</td>
<td><a href="http://hdm.brc.riken.jp/en/">http://hdm.brc.riken.jp/en/</a></td>
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<td>Shinozaki Research Collaborative Group</td>
<td><a href="http://genediscovery.riken.jp/English/index.html">http://genediscovery.riken.jp/English/index.html</a></td>
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<tr>
<td>Tsukuba Branch</td>
<td><a href="http://rtcweb.rtc.riken.jp/English/index-e.html">http://rtcweb.rtc.riken.jp/English/index-e.html</a></td>
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