

Evaluations and Comments

3rd Meeting of the RIKEN BioResource Center Review Committee

(Technology and Development Unit for Knowledge Base of Mouse Phenotype)

April 3, 2014

1. Achievements

(1) Has the Division, Team or Unit achieved sufficient results? Please evaluate and give us advice and suggestions from the following view point:

- Has contribution been made to reinforcing BRC's raison d'être?
 - Have advanced, innovative results been achieved?
 - Have scientific results been produced?
 - Has there been social impact?
 - Has contribution been made to advancing BRC's resource infrastructure?
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- Organizing bioresource property information is a key issue for promoting the use of bioresources. The unit has made significant progress in three areas: (1) building a theoretical basis for data integration, (2) developing a database to integrate bioresource property information, and (3) promoting international cooperation for bioresource sharing. The first area in particular has produced academically outstanding results, including the establishment of genetics and phenotype ontologies. Therefore, the unit has made significant contributions to the development the bioresource infrastructure.
 - The activities of the unit such as bioresource property data generation and development geared toward international standardization will enhance the level of science in Japan. These projects also have significance at RIKEN BioResource Center (BRC). The database which links human diseases with the model animal phenotypes developed in collaboration with the Japan Mouse Clinic is particularly important for BRC.
 - The "recommended mice" function in the bioresource property database is useful. This function should be also available for the KO mouse data. The database should integrate molecular level data in future.
 - More efforts should be made to publicize this work.

- The versatility and reliability of the databases should be enhanced.
- Although the unit has presented fewer papers than other groups, it is still a respectable number considering there are fewer people in the unit.

(2) Other matters

- **Collaborations within BRC and within RIKEN**
 - **Collaborations inside and outside Japan**
 - **Public relations activities**
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- The unit has worked well with the Technology and Development Team for Mouse Phenotype Analysis within the center and with the Database Center for Life Science in Japan. At the international level, the unit has played an active role in IMPC. For example, it has become a member of the Data Analysis Advisory Committee and Statistics Technical Group of IMPC as well as data forwarding. It has also participated in the Cell Line Ontology Consortium, which was established for international standardization of cultured cell information. This activity has contributed to the creation of a standard format and is highly acclaimed.
 - The rapid increase in visitors to the website indicates that the public relations activities have been effective.
 - The national and international cooperative efforts for standardization have room for improvement.
 - The public relations activities should be more strategic.
 - More efforts, including press releases, should be made in this area.

(3) Response to previous year's evaluation and advice

- There were good responses to most of the comments in the last evaluation. One comment said the database was not user-friendly enough, so the unit developed its "recommended mice" interface, a kind of recommendation function allowing users to browse other mice with similar phenotypes in an organized way. This effort is highly acclaimed. Another comment suggested that top-level ontology should be promoted worldwide. Although a manuscript is being prepared, more effort should be made in this area.

- The unit responded to individual comments to make improvements. More effort should be made to gain public recognition of the importance to the database development. Furthermore, more specific and appealing activities to illustrate how the database is utilized should be planned.

2. Plans as RIKEN's proposed change of status to a new system for Independent Administrative Institutions

(1) Are their plans appropriate to the proposed change in RIKEN's status? Please evaluate and give us advice and suggestions from the following view point:

- **Can dramatic advances be expected from their strategies and plans for the next 5 to 7 years?**
 - **Should proposed plans be undertaken in BRC?**
 - **What topics are effective and essential to implementing BRC's resource infrastructure?**
 - **Can advanced and innovative results be expected?**
 - **Can achievements that will lead to innovation be expected?**
 - **Can a major impact on society be expected?**
 - **Are the proposed plans novel, do they have high priority, and are they sufficiently specific?**
- The three projects, i.e., (1) building up a basic theory, (2) database development and (3) international information sharing, are all in high-demand and are critical for promoting the use of bioresources. They are appropriate for RIKEN as a non-profit national R&D organization, and will have significant impacts on both academia and society.
 - The highest priority should be given to the database development. The division's human resources should be enhanced to spur significant progress with this development.
 - An integrated database for modeling animal phenotypes with human disease information has great value since the phenotype data can be utilized in specific studies. The unit, however, is short of staff for this work. Although the project could show its significance after RIKEN's possible status change to a non-profit national R&D organization, it is impossible to implement it without additional funds and staff. As is also the case with the Japan Mouse Clinic, a strategic approach has to be taken to further promote and develop this field.

(2) Are suggestions made previously reflected in their current plans and strategies?

Have they endeavored to re-inspect their activities to date and made appropriate decision about what should be continued or discontinued?

- The comments made in the last evaluation are well reflected in the current operations and results. The remaining funding issue has to be addressed by RIKEN as a whole rather than just BRC.
- The database integration of mouse phenotypes and human disease information is a highly attractive project. A user-friendly system should be constructed.