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The 4th Review Committee
Evaluation and Suggestions

(April 8, 2016)

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Technology and Development Unit for Knowledge Base of Mouse Phenotype
Unit Leader: Hiroshi Masuya

◎: Compulsory report items ○: Major report items ●: Optional report items

◎ *1-1a. Have sufficient results been achieved? (The BRC's standing in the world, contribution to society)*

- From the following perspectives, it can be evaluated as meeting expectations:
    1. In order to expand the use of bio-resources, phenotypes and other mouse trait information, which is expected to be even more important in the future, this Unit has developed a user-friendly and integrative mouse phenotype database. In addition, the Unit has developed softwares for other resources of the Center (for example, the Disease-Specific iPS Cell Bank) and has developed a web system for resource deposition for the entire BRC. The results have exceeded expectations in improving the information infrastructure in BRC as a whole. Furthermore, the Unit has made a notable international contribution by taking the data from International Mouse Phenotype Consortium (IMPC) and converting it to the Resource Description Framework (RDF) format, which is essential for semantic web technology.
    2. In the presentation, three barriers that impeded the information infrastructure project were pointed out, but this indicates that the problems inherent in these fields have been sufficiently analyzed. The Committee would like the unit to continue steadily trying to surmount these three issues.

- The Committee offers suggestions to produce sufficiently enhanced performance in the future:

1. There is an impression that international standardization has required many human resources, but it can be said that this is due to society's demands. Therefore, it would be desirable to accelerate the Unit's own unique knowledge-base research. For example, the importance of the text mining is clear, so the Committee definitely wants the unit to flesh out work in that area.

◎ *1-1b. Responses to previous comments and advice*

- From the following perspectives, it can be evaluated as adequately addressed:
    1. The previous Committee asked how the Unit manages all projects under the condition of insufficient funds and personnel. The fact that the Unit has received funding from the NBDC project of JST indicates that one of the items that we pointed out was dealt with. Also, good international collaborations, like those with the IMPC, the OBO, and the CLO, were performed, so the Committee commends the Unit for dealing with this item.

- The Committee offers the following suggestions for further improvement:
    1. The group has dealt with issues in a satisfactory manner, but because significant results are expected to be produced, the issues previously pointed out have not been assimilated sufficiently. One factor to be mentioned is insufficient personnel resources, and this Unit is not solely responsible for it, but the problem remains.

○ *1-2. Is the self-analysis of strengths and weakness adequate?*

- From the following perspectives, it can be evaluated as having been adequately analyzed:
    1. Self-analysis is reasonable. In particular, the lack of technological strength in data analysis is pointed out as a shortcoming, but this is an issue common to the entire field of data science in Japan. This problem, including the training of human resources for statistical analysis, text mining, and other areas, has to be dealt with in the future.

- The Committee offers the following suggestions for further improvement:

1. The problematic areas were sorted out well, but specific plans should have been indicated for preparing an economic foundation (including human resources) in order to overcome problems.

● *1-3. Is the plan reasonable for the medium to long term?*

- From the following perspectives, it can be evaluated as reasonable:
  1. These are appropriate medium- to long-term plans for collecting relevant genetic pathway and phenotype data for aging and specific incurable diseases, integrating the information with BRC resources, and using RDF technology to drive an expansion of resource information users.

● *2a. Have appropriate fields been earmarked for future prioritization?*

- From the following perspectives, it can be evaluated as appropriate:
  1. The Unit is commended for taking the initiative in using RDF for the purposes of standardization.

3-3. Innovation hub

● *(iii) Continuous operation and attracting new users*

- From the following perspectives, it can be evaluated as generally sufficient:
  1. Trying to expand the number of resource users by integrating information with RDF technology will be an important issue, and it will be vital not only for operating the technology in a stable manner, but also for expanding the number of new users in the future.

3-5. Training of global human resources

● *(ii) External*

- From the following perspectives, it can be evaluated as sufficiently presented.
  1. High-quality joint researches, such as NBDC and IMPC, are being carried out.