

**The 1st Review Committee of iPS Cell  
Evaluation and Suggestions**

**(February 14, 2019)**

**Division/Team Name: iPS Cell Advanced Characterization and Development Team**  
**(Yohei HAYASHI, Team Leader)**

1. Achievements and plans for the Team

(1) Have the current achievements reached the standards of those made by the major international bioresource centers?

- Before Dr. Hayashi was appointed to the Team Leader (TL), he published his achievements using induced pluripotent stem (iPS) cells in highly-accredited international journals. He was evaluated as having reached the standards as the BRC's TL.
- Since it has only been a while since the establishment of the Team, there are not many achievements for evaluation. It is hoped this Team will make a world-class achievement in the near future.
- It is wonderful that the TL is developing his research in various directions. The committee encourages the Team to keep going forward with a hope that the Team will contribute to the development and operations of the BRC.

(2) Have sufficient achievements been made for contributing to society and to the research community within Japan and overseas?

- As the TL of the BRC, Dr. Hayashi's contribution is promising in the future.
- The TL is actively conducting outreach and educational activities.
- Contribution using the research outcome is an issue to be addressed in the future.

(3) Are current activities and plans based on the results of the 3rd Mid- to Long-Term Plan or the achievements in the previous position? Are they in line with the BRC's 4th Mid- to Long-Term Plan (7 years from 2018 to 2024)? Are they appropriate and do they contribute to the development of the center?

- The Team's plan and activities are based on his previous achievements, and in line with the Plan. An achievement made by the Team will surely contribute to the development of the center.
- It is recommended that new research and development should be generated and advanced in

collaboration with the other laboratories within the center.

- It is necessary to make plans that clearly distinguish the activities as the duties within the RIKEN BRC from those for research by competitive funding, and the TL should be more aware of this distinction.
- As pointed out in the committee meeting, it is advisable that Dr. Hayashi should revise his understanding of “advanced characterization”. The "advanced characterization" does not correspond to the analyses he is currently conducting. He needs to clarify first what are the analyses defined as "advanced characterization" based on experts’ opinions, then specify the activity that is feasible for the Team, and proceed with it.
- The Team should begin offering reporter cell lines as soon as possible. (On this comment, Dr. Hayashi answered at the committee meeting that the Team will begin it within fiscal year 2019.)

(4) What are resources to be developed and research/technological development to be undertaken in addition to those currently planned in the initial 4th Mid- to Long-Term Plan?

- The Team’s current basic research plan may be of a sufficient standard, but as the TL of BRC, it is desirable that the TL will develop a novel characterization method of iPS cell lines.
- Dr. Hayashi should further refine his idea for what is required for the research using iPS cells, and for what contribution to BRC’s operation can be made by such research from a global perspective.
- The Team should develop iPS cells derived from healthy individuals, in which basic plasmids of CRISPRi and CRISPRa are transferred, and made them available to users immediately. These cells should be designed so that they can be used simply by introducing gRNA. It would be desirable to develop cells that have drug-inducible characteristics.

## 2. SWOT analysis

(1) Are the results of the presented SWOT analysis valid?

- The results of the SWOT analysis are generally reasonable.

(2) Are the countermeasures for the results of the SWOT analysis appropriate?

- The countermeasures are appropriate.
- It appears that the TL is focusing on obtaining external funds, but it is better to downscale the future projects and strengthen the ongoing projects, rather than raising funds.
- Technical terms should be used appropriately.

### 3. International collaboration

- (1) Is the international exchange being actively addressed, and is the Team functioning as a hub of international scientific technology?
  - The Team consists of multinational members, which is regarded as the TL's commitment toward internationalization.
  - Whether the Team can function as an international hub is an issue to be addressed in mid to long-range.
  - The TL has worked internationally so far, and we expect him to be further committed to international collaboration through his contribution and to show his presence as a BRC staff member.

### 4. PI assessment

- (1) Is the PI fulfilling the role in line with the BRC mission?
  - It is evaluated that the PI is making much effort to fulfil his role in line with the BRC mission. However, it has only been a while since the establishment of the Team, and it is too early to evaluate his achievements at the present time.
  - The PI's challenging research for technological developments is hoped to yield unique outcome. At the same time, it is important to have a good balance with the outcome by his commitment to the projects for bioresource infrastructure.
  - The PI is planning to contribute to the research community through development and distribution of reporter cells, and he can be expected to fulfil his role in line with the mission.
- (2) Do the PI's achievements in research and development (R&D) satisfy international standards in light of the following three aspects? (i) Results output and impact, (ii) Contribution to specific missions of each laboratory regarding research support and collaborative exchange programs within RIKEN, (iii) Pioneering new fields of research, acquisition, and commercialization of intellectual property rights, social education for science, the fusion of different fields, and social contribution
  - The PI's achievements sufficiently meet international standards in all three aspects.
  - (i) The PI's achievements meet international standards.  
(ii) More effort is required for the achievement of the mission within RIKEN.  
(iii) The TL's activities for introduction of laser technology as well as for social enlightenment

sufficiently meet the international standards for a young PI and are appraisable.

(3) Is the PI appropriately tackling the management and operation of the Team? In addition, does the PI make efforts for training and development of young talent?

- As a young independent PI, the TL's capacities in management and operation are unknown, and we expect for the PI's future efforts
- The PI has newly established his laboratory, and he is tackling management and operations of his Team appropriately.
- The PI is also committed to training and development of young talent.

End