

Data-based discussion of ethical issues of iPS cell technology

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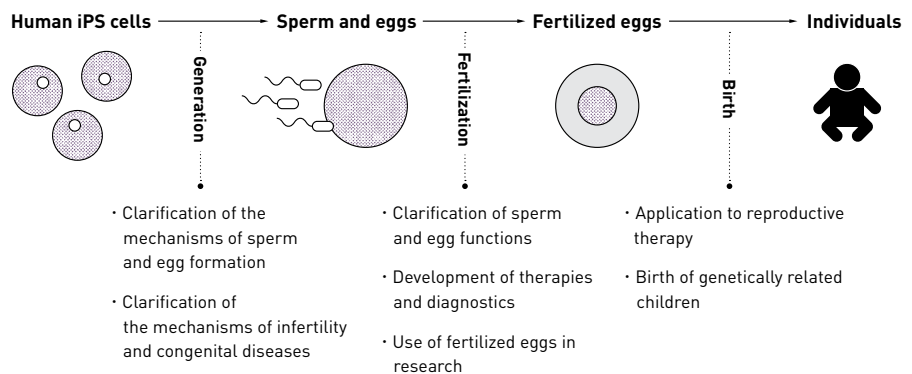
Profile

- 1992 Graduated from Faculty of Human Sciences, Univ. of Tsukuba
 2006 Ph.D., Graduate School of Medicine, Kyoto Univ.
 2008 Project Assistant Professor, Graduate School of Medicine, The Univ. of Tokyo
 2009 Assistant Professor, Graduate School of Medicine, The Univ. of Tokyo
 2013 Associate Professor, CiRA, Kyoto Univ.
 2018 Professor, CiRA, Kyoto Univ.

Publication Highlights

- (1) A rebuttal of Akabayashi and colleagues' criticisms of the iPSC stock project
 Fujita M *et al.*
JME (2019) doi: 10.1136
- (2) The Japanese generally accept human-animal chimeric embryo research but are concerned about human cells contributing to brain and gametes
 Sawai T *et al.*
Stem Cells Transl Med (2017) 6 (8): 1749-50
- (3) Recent court ruling in Japan exemplifies another layer of regulation for regenerative therapy
 Ikka T *et al.*
Cell Stem Cell (2015) 17 (5): 507-508

Research on the creation of germ cells



Summary

The clinical application of iPS cell technology will be difficult without public understanding and agreement. Accordingly, ethical, legal, and social issues need to be addressed. As a concrete example, we addressed the issue of research on genome-editing technology and research using human iPS cells to create germ cells.

Research Progress

Ethical issues in genome-editing technology

New genome-editing technology can modify genomic DNA with good accuracy and have expectations for new therapies and other benefits for human health and society. On the other hand, the birth of twins using this technology in the fall of 2018 sparked worldwide debate. We have analyzed the ethical issues on the

birth of humans born from genome-edited fertilized eggs and have adopted the stance that should be prohibited.

Research into the creation of germ cells

iPS cells have been used to successfully create the cells from which human eggs and sperm originate. In a questionnaire covering 3,096 members of the public, we found that the highest levels of expectation from this technology were directed toward the development of therapies and clarification of pathologies rather than application to reproductive therapy, and that there were strong concerns regarding the risk to unborn children and the phenomenon of designer babies.

Members

- Jusaku Minari (Associate Professor)
- Taichi Hatta (Assistant Professor)
- Tsutomu Sawai (Assistant Professor)
- Kyoko Akatsuka
- Kinuko Kasama
- Yuko Kuyama
- Keiko Mizuno
- Mika Suzuki
- Miki Tanigawa

Increasing the public credit in cutting-edge life science research

Jusaku Minari Ph.D., Associate Professor



Summary

Research into iPS cells and other cutting-edge life sciences relies not only on public support, but also the public's willingness to donate blood samples and other biological materials. Working with specialists from various fields in Japan and overseas, we explore a range of issues such as how to promote communication between researchers and the public, how to establish rules and guidelines to govern research, and how to respond to the social impact of research findings.

Research Progress

Society and life science research

To promote consideration towards the public and public confidence, we are currently addressing two exploratory items within the ISLE (Innovation for Science, Life and Ethics) project adopted by the Japan Science and Technology Agency.

Initiatives under the ISLE project

The two exploratory items are as follows. First, we are studying the optimal regulatory framework for life science research. Here, focusing on government guidelines, we have been looking into the background to their formulation and associated issues. Specifically, I have

used our findings among other things in the revision of the guidelines as a member of the revision committee from the fiscal year 2018.

The other line of research concerns how to create dialogue with the public. Here, we are engaged in discussion with specialists from a wide range of fields in the world on the optimal design of questionnaires and workshops to identify public perceptions and attitudes. We are also designing formats that integrate elements of art and design to include people with no great interest in life science research, allowing them to encounter the progress of the research and the associated ethical and social issues, express their own ideas and impressions, and experience new perspectives and value concepts. In the fiscal year 2018, in the framework of the Sado Island Galaxy Art Festival 2018, we organized a workshop on the subject of Connections between Humans and Nature.

Members

•Kinuko Kasama •Miki Tanigawa



Workshop in the framework of the Sado Island Galaxy Art Festival 2018 (Aug 19 2018 at the Sado Island, Niigata Prefecture)

Profile

- 2005 Graduated from Faculty of Environmental Engineering, The Univ. of Kitakyushu
- 2010 Ph.D., Graduate School of Environmental Engineering, The Univ. of Kitakyushu / Postdoctoral Fellow, Institute for Research in Humanities, Kyoto Univ.
- 2013 Assistant Professor, Graduate School of Medicine, Osaka Univ.
- 2015 Deputy Director, Dept. of Research Infrastructure, Japan Agency for Medical Research and Development (AMED)
- 2016 Assistant Professor, Graduate School of Medicine, Osaka Univ.
- 2017 Associate Professor, CiRA, Kyoto Univ.

Publication Highlights

- (1) Tensions in ethics and policy created by National Precision Medicine Programs
Minari J, Brothers KB, and Morrison M
Human Genomics (2018) 12: 22
- (2) Ethical, social and policy considerations for realizing genomic medicine (in Japanese)
Minari J
BIO Clinica (2018) Vol.33, 63-66
- (3) The novel approach of AMED in realizing genomic medicine. (in Japanese)
Minari J, Kato O, Sakurai M and Saito A
Idenshi Igaku MOOK (2018) Vol.33, 168-172