

Science and Technology Group Annual Report FY2020

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1 Introduction

Centrioles are important organelles that function in centrosome organization and flagella assembly. Their highly conserved 9-fold symmetrical structures define the “9+2” pattern of ciliary/flagellar axonemes. Although recent proteomic studies have identified many centriole proteins, their functions in centriole assembly are still unclear.

For understanding the centriole assembly mechanism at the molecular level, I have used mutants of *Chlamydomonas reinhardtii*. At OIST, I am going to continue the studies with several newly isolated mutants with centriole defects.

2 Activities and Findings

- Lab set-ups

I moved to OIST in April 2020. Until the culture room construction was completed, I prepared equipment for molecular works and started basic experiments, including PCR, genome sequencing, etc.

After the culture room became available (October 2020), I started to culture *Chlamydomonas* cells and basic experiments, including observation under the light microscopes, genetic crossing, etc.

- Imaging

I started to prepare specimens for electron microscopy and observe some slices with Mr. Toshio Sasaki's (IMG section, OIST) support.

I got some images of the novel mutant *bld13* centrioles and found that the defects were more severe in the proximal part than in the distal part.

3 Collaborations

- Hosei University (Dr. Masafumi Hirono)
- Tokyo Institute of Technology (Dr. Ken-ichi Wakabayashi)
- University of Tokyo (Dr. Mikito Owa, Dr. Akira Noga)
- Paul Scherrer Institute (Dr. Manuel Hilbert, Dr. Michel O. Steinmetz)

4 Publications and other output

Presentations

- **Yuki Nakazawa**, Mao Horii, Saki Watanabe, Moeko Otsuki, Akira Noga, Ken-ichi Wakabayashi, and Masafumi Hirono, The 58th Annual Meeting of the Biophysical Society of Japan (Sept. 2020)
- **Yuki Nakazawa**, Masahito Nagao, Akira Noga, Manuel Hilbert, Michel O. Steinmetz, and Masafumi Hirono, The 14th *Chlamydomonas* workshop of Japan (Mar. 2021)

Grants

- Kakenhi KibanC 19K06749 (2019-2021)